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HP Forms and Font Manager

Installation and User Guide

For use with HP LaserJet printers with an HP Flash SIMM or HP hard disk installed

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HP Forms and Font Manager

Installation and User Guide

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English

Contents

1. Introduction

1.1 Introduction

HP Flash SIMM and HP hard disk drives are non-volatile, re-programmable memory options for HP LaserJet Printers. In this manual these will be referred to as **Non-Volatile Memory (NVM).**

Non-Volatile Memory, or NVM, can be used to store macros, forms, fonts and signatures created specifically for use in a customised environment which will remain stored even when the printer is turned off.

1.2 Benefits

Among the benefits of using NVM are:

- **Increased Throughput**
  As commonly used forms, fonts and signatures are stored in the printer, the volume of data transmitted to the printer and hence the time taken to download a job can be significantly reduced, resulting in faster overall printing times. The corresponding reduction in network traffic will help avoid network congestion.
- **Improved Document Management**
  More effective electronic document management through password protection, network download and update of company standard documents, provides a secure and easily managed printing environment.
- **Cost Savings**
  A reduction in stationery costs is achieved by the effective implementation of electronic documents, reducing the need for pre-printed stationery.
- **Better Mixed Language Printing**
  Conflicts between PCL and Postscript print jobs are reduced when operating in a mixed printing language environment. PCL data stored in the NVM is not overwritten when the printer switches languages.
- **Improved Printer Control**
  Printers on the network can be accessed using bidirectional communications allowing the status and contents of the NVM to be remotely interrogated and managed.

1.3 Compatibility Matrix

Printer Type/Product	1Mb SIMM	2Mb SIMM	4Mb SIMM	420Mb Disk
HP LaserJet 4/4M	C4025A	C4025B	C4025C	**-**
HP LaserJet 4+/4M+	C4025A	C4025B	C4025C	**-**
HP LaserJet 4P/4MP	C4025A	C4025B	C4025C	**-**
HP LaserJet 4V/4MV	C4025A	C4025B	C4025C	**-**
HP LaserJet 4Si/4Si MX	C4025A	C4025B	C4025C	**-**
HP LaserJet 5P	B1378A	B1379A	B1380A	-
HP LaserJet 5/5N/5M	**-**	C3930A	C3931A	**-**
HP LaserJet 5Si/5Si MX	B1375A	B1376A	B1377A	C2965A
HP LaserJet 6P/6MP	B1387A	B1388A	B1389A	-

Note: Not for use with HP LaserJet 4L, 4ML, 5L, 5ML, 5MP

1.4 System Requirements

- IBM or 100% compatible 286, 386, 486 or Pentium PC or PS/2 computer
- 8 Mb available disk space
- MS-DOS version 3.1 or higher
- Microsoft Windows 3.1 or higher or Windows 95, Windows NT or Win OS2

Note: When using Windows NT or Win OS2, the software operates in Windows 3.1, or higher emulation mode.

Network Requirements (for NVM use in a networked printer)

- HP JetDirect interface card with firmware rev. A.03.15 or higher installed in printer
- If using Novell Netware, it must be v3.11 or above with ODI or VLM workstation shell

Requirements for Network BiDi communications

- TCP/IP protocol enabled on the HP JetDirect card *(Refer to the HP JetDirect manual for instructions).*
- Windows Sockets v1.1 compliant TCP/IP stack running on a PC (e.g. Novell LanWorkPlace or Lan WorkGroup)

Warning: Bi-Di communication from Windows NT client workstations is not supported in this software revision.

Note: Information in this document is subject to change without notice.

2. Installation

2.1 Installing an HP Hard Disk

Refer to C2965-90001 manual shipped with the HP hard disk sub-system for installation instructions.

2.2 Installing an HP Flash SIMM

Check the HP Flash SIMM against the compatibility matrix on the previous page to ensure it is the correct unit for the printer concerned.

For information on how to install the HP Flash SIMM board in the printer, please refer to the section entitled 'SIMM board installation' in the printer's User Reference Manual and Figure 2.1 below.

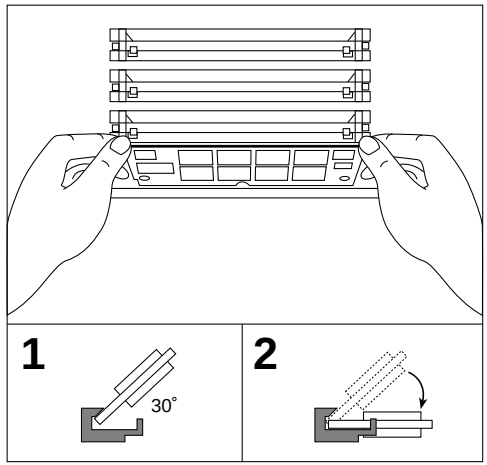

Figure 2.1 Installing the HP Flash SIMM

WARNING SIMM boards can be easily damaged by small amounts of static electricity. To reduce the risk of damage, keep the SIMM in its anti-static bag until ready to install. Touch something metal before the card and handle the board carefully at all times, avoiding flexing it or touching its components.

HP LaserJet 4P / 4MP

Prior to installation in the HP LaserJet 4P and 4MP, remove the blue jumper located on the SIMM board. For other printers the jumper must be left attached.

Resource Saving Considerations (HP LaserJet 4Si / 4V / 4Plus)

On the HP LaserJet 4Si printer, Resource Saving should be disabled. It is possible to operate with Resource Saving enabled but then it is necessary to switch the power OFF and then ON again, after downloading, for the HP Flash SIMM to work correctly.

On the HP LaserJet 4Plus and the HP LaserJet 4V printers, Resource Saving can be enabled but it will be disabled automatically by the installation of the HP Flash SIMM.

The following table shows hardware specific settings for the HP LaserJet family.

Printer Type	Jumper Setting on SIMM	Recommended Resource Saving Setting
HP LaserJet 4P/4MP	OFF	n/a
HP LaserJet 4Plus/4MPlus	ON	ON (S/W controlled)
HP LaserJet 4/4M	ON	n/a
HP LaserJet 4Si/4Si MX	ON	OFF
HP LaserJet 4V/4MV	ON	ON (S/W controlled)
HP LaserJet 5P	ON	ON (S/W controlled)
HP LaserJet 5Si / 5Si MX	ON	ON (S/W controlled)
HP LaserJet 5 / 5N / 5M	na	ON
HP LaserJet 6	ON	ON

Testing the Installation

To test that the HP Flash SIMM is properly installed, do the following:

- Turn the printer ON
- From the printer Control Panel, take the printer offline by pressing the **Online** key
- Use the **Menu** key to select the **Test Menu**
- In the test menu, scroll to the **Flash SIMM Page** using the **Item** key
- Press the **Enter** key

Note: *On the HP LaserJet 5P and 5Si it is not possible to print a status page from the printer's front panel. A status page can be printed using the HP Forms and Font Manager software included with the HP Flash SIMM.*

If installation is successful, the display will indicate **'FLASH PAGE'** and the printer will print an HP Flash SIMM Status Page. If the printer does not have a front panel display, the printer will just print the status page. If this fails, check you have followed the installation instructions correctly and that the HP Flash SIMM board is correctly seated in the SIMM slot.

2.3 Installing the HP Forms and Font Manager software

Accompanying the Non-Volatile Memory (NVM) is a software program called HP Forms and Font Manager. Its purpose is to manage the selection of macros, forms, fonts and signatures. It also manages the process of downloading to a printer and the contents and status of the NVM.

To install the software, do the following:

- Insert the diskette labelled **'HP Forms and Font Manager Disk 1'** in drive A:
- In Windows, from the Windows Program Manager choose **File/Run**
- In Windows 95, chose **Start** then **Run** from the TaskBar
- Type **A:\SETUP** (or specify the letter of the drive containing the installation diskette) in the text box
- Click **Next** to continue
- Follow the instuctions on the screen, clicking **Next** to select the recommended system defaults
- When Setup has finished working the message **'Installation Completed Successfully'** will be displayed. The README file can be reviewed at this point or later using Notepad or another text processing program.
- Remove the diskette from drive A. Installation is now complete.

To use the HP Forms and Font Manager in a network environment, the Network Operating System must be Windows Sockets v.1.1 compliant. The networked printers must have TCP/IP enabled on the HP JetDirect cards and IP addresses set *(Refer to the HP JetDirect manual, P/N J2552-90051, for instructions).*

3. Getting Started

Once the NVM is installed in the printer and the HP Forms and Font Manager software is installed on the PC, load the program by double-clicking on the icon in Program Manager. The HP Forms and Font Manager main screen will appear with the following icons in the toolbar.

Icon	Description
	New Project
	Open Project
	Save Project
	Download Project
	Print Status Page
	Project Contents
	Test print selected files
	NVM – Remove file
	Sort Ascending
	Sort Descending
	Enable BiDi
	Display BiDi information
	Autonumber
	Add or Remove file from Project

Toolbar Summary

3.1 Selecting a Printer

From the **File Menu** choose **Printer Select**

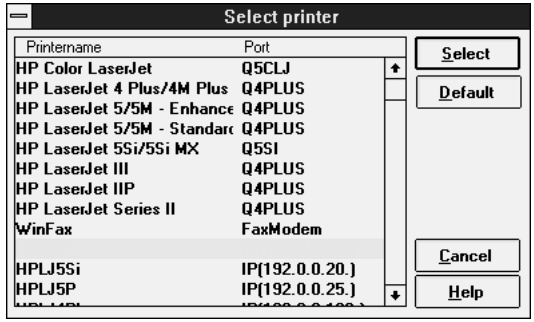

Figure 3.1 Printer Selection

From the drop down list, select the printer to be used. If it is a network printer, select it by its name and IP address, not by the port connection. If the printer is directly connected to your PC then select the printer driver and the port connection. Highlight the printer, click on **Select**, then click on **OK**.

3.2 Defining the Environment Parameters

From the **Options Menu** choose **Environment.** Select and modify parameters in each of the four tabbed sections as detailed below. Do **NOT** click on OK until all sections are completed as this will exit the Environment screen.

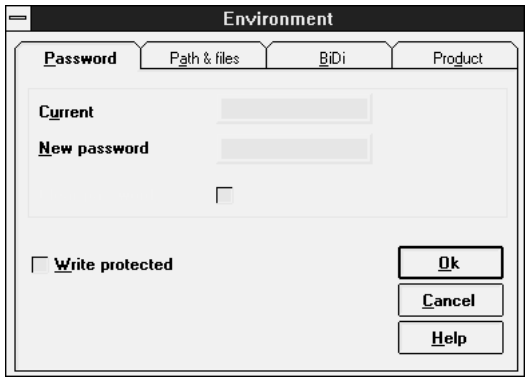

Figure 3.2 Environment /Password Screen

To be able to password protect the macros, forms, fonts and signatures which are stored in the NVM, a password must be set. Click on the **Password** tab and enter a password in the **Current Password** box and in the **New Password** box then click on the **Paths & Files** tab. Do **NOT** click OK.

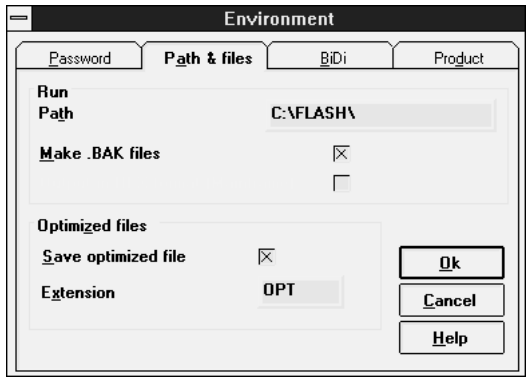

Figure 3.3 Environment/Paths & Files Screen

Click on the **Paths & files** tab. This screen is used to set the file storage location and how the files are processed. Initially, only specify the directory to be used to store the download files created. The default of C:\FLASH\DATA can be accepted. *(For information on the other parameters refer to Section 4.1.1.2 in this manual)*. Click on the **BiDi** tab. Do **NOT** click on OK.

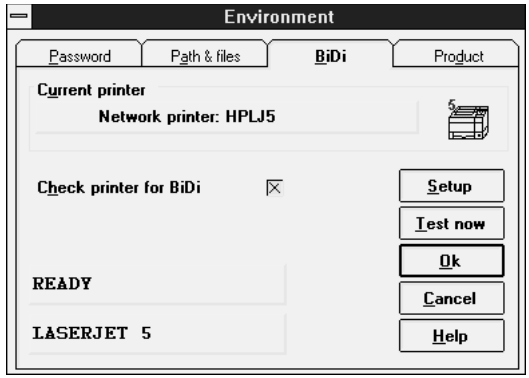

Figure 3.4 Environment/BiDi Screen

The printer displayed in the **Current Printer** box should be the one selected from the Printer Select list box shown in 3.1. Put a check mark in the **Check Printer for BiDi** box then click on **Test Now**. After a couple of seconds, **00 READY** should appear in the message box and also be displayed in the bottom right hand corner of the Flash SIMM Manager window. (***Note****: The selected printer must support BiDirectional communication. If it does not, this facility will not operate. Refer to Section 7: Glossary for more information).*

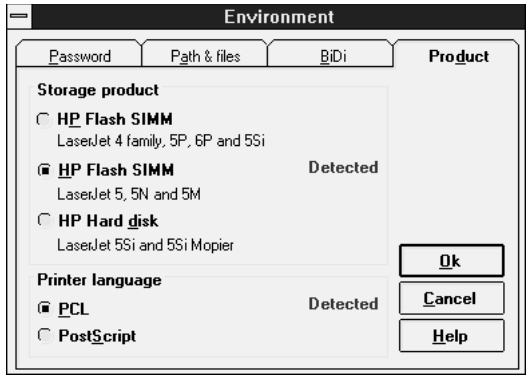

Figure 3.5 Environment/Product Screen

Click on the **Product** tab. This screen is used to choose the non-volatile storage product available in the selected printer. If BiDi is enabled, this will be automatically detected. If BiDi is not enabled, click on the non-volatile **Storage product** and **Printer language** required.

Now all four sections have been completed, click on **OK**. A pop-up message box will appear saying **'Password has changed. Update now?'** Click on **OK**. The password will be downloaded and set for the NVM. The other settings will also be saved.

3.3 Configuring Network Printers

If there are network printers with NVM installed in them, choose **Network Setup** from the **Options Menu**. (If there are no network printers go to Section 3.4).

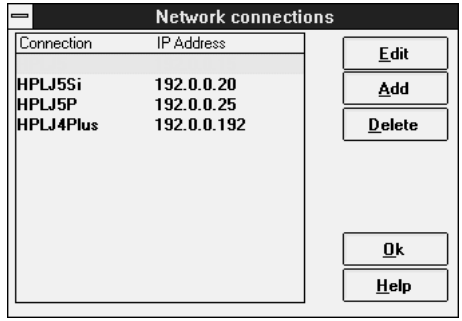

Figure 3.6 Network Printer Configuration

Add each network printer to the list in this screen, together with its IP address. (Your Network Administrator should be able to supply the IP addresses). Click on the **Add** button, type the printer's name and address in the dialog box and, when all the printers have been added, click on **OK**. The list may be edited later if necessary.

3.4 Downloading and Printing Examples

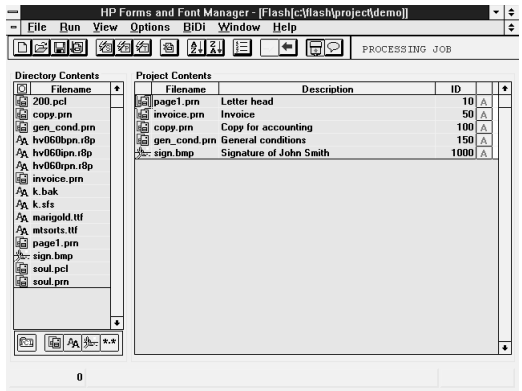

Figure 3.7 HP Forms and Font Manager Main Screen

To download and print an example form, font and signature, follow the instructions below.

Note: *Not all printers support all software functions. Functions not supported by particular printers will be 'grayed' out and not available for selection.*

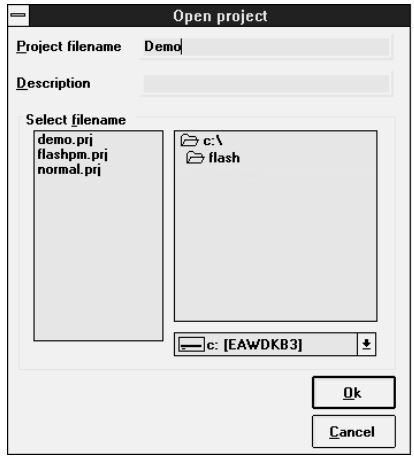

Figure 3.8 Open Project Window

- Click on **File**
- Select **Open Project.** The following screen will appear.
- Select **demo.prj** from the **Select filename** box. Click **OK.**
- Click on the [PRINT ICON] icon in the tool bar at the top of the main screen.
- The following dialog box will the appear and should identify the default printer with the NVM installed. Click **OK.**

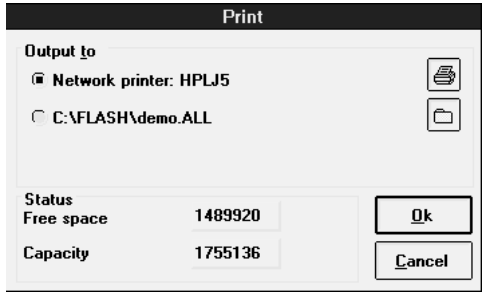

Figure 3.9 Print Dialog Window

The example form, font and signature will be downloaded to the NVM in the default printer. To print either the example form, font or signature, highlight the appropriate file in the main screen **Project Contents** box *(See Figure 3.7)* and click on the  icon.

If the project has been downloaded successfully, the lights on the right hand side of the screen will turn green.

3.5 Defining Project Defaults

From the **Options** menu, choose **Project Defaults.** Select and modify parameters in the tabbed sections as detailed below. Do **NOT** click on OK until all sections are completed as this will exit the **Project settings** screen.

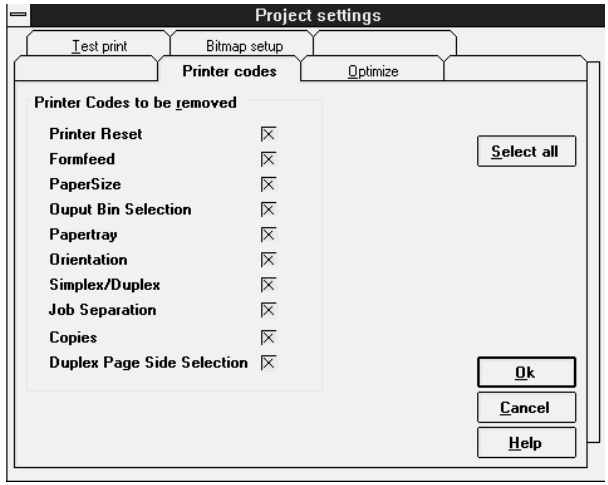

Figure 3.10 Project settings/Printer Codes Screen

Click on the **Printer codes** tab. This screen is used to select the default treatment of codes which control the mechanical functions of the printer. If the boxes are not checked then click on **Select All**. Do **NOT** click on OK

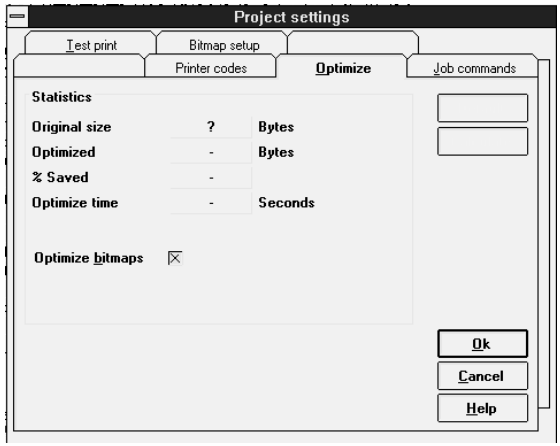

Figure 3.11 Project settings/Optimize Screen

Click on the **Optimize** tab. This screen is used to select whether or not bitmaps should be compressed. For now, make sure there is a check mark in the **Optimize** box. Do **NOT** click on OK.

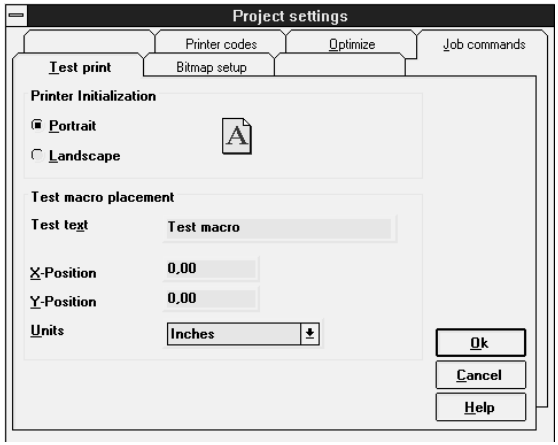

Figure 3.12 Project settings/Test print Screen

Click on the **Test print** tab. Select **Portrait** or **Landscape** orientation to suit the orientation of the macro. In the **Test text** box type some text to appear on test prints. In the boxes below choose the units of measurement to work in, and set the X and Y co-ordinates for the location on the page for test macros to be printed. Do **NOT** click on OK.

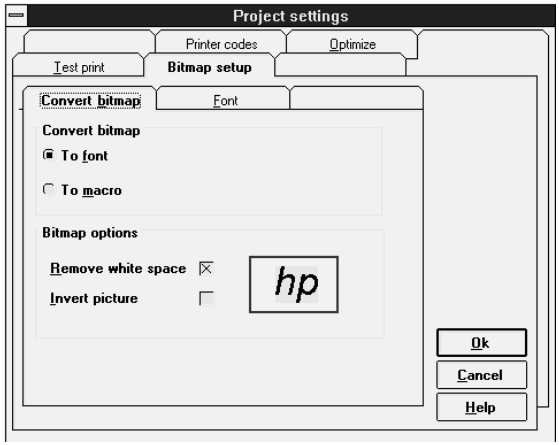

Figure 3.13 Project settings/Bitmap Conversion Screen

Click on the **Bitmap** tab and then on the **Convert bitmap** tab. This screen selects the type of conversion that will be applied to bitmaps. Select 'To macro' , the program defaults to 'To Font'. To remove the white space around the edges of all bitmaps put a checkmark in the box. To invert all bitmaps (i.e. have them print in negative) put a checkmark in the box. These settings can be changed for individual bitmaps later. Do **NOT** click on OK.

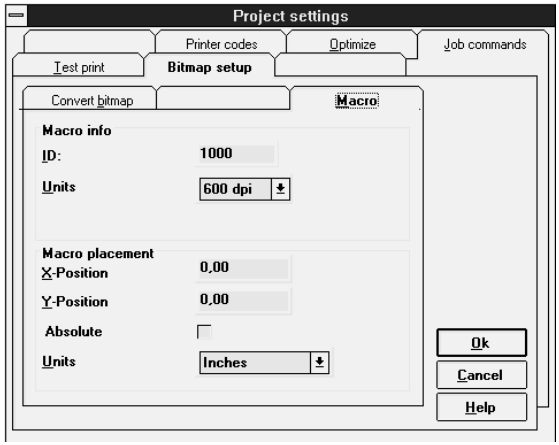

Figure 3.14 Project settings/Bitmap/Macro Screen

Click on the **Macro** tab. Leave the ID as zero, set the **resolution** to match the selected printer and set the units of measurement. The X and Y default co-ordinates can be set here. These are relative to the last cursor position, unless the **Absolute** box is checked. For now leave the co-ordinates at zero and the **Absolute** box unchecked.

Once the above sections have been completed, click on **OK**. The main screen will re-appear.

3.6 Assembling the Project

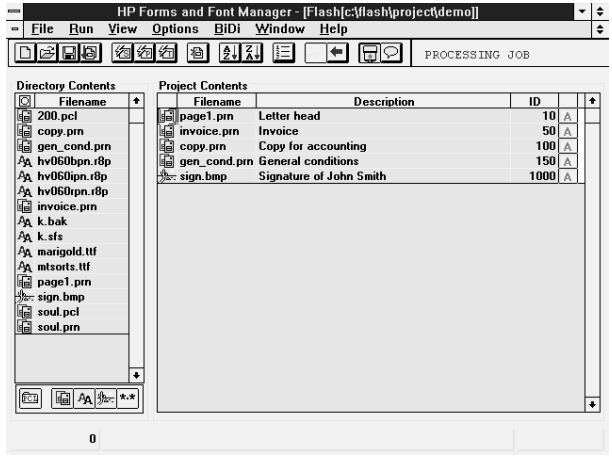

Figure 3.15 Main Screen/New Project

Click on the  icon (or select **View/Select Directory**) to select the directory which contains the files to be included in the Project. Select the files required and either drag and drop them into the **Project Contents** window or click on the arrow button to transfer them across.

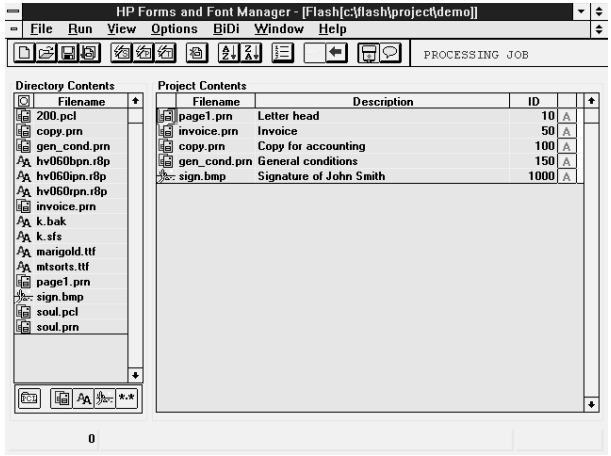

Figure 3.16 Main Screen/ Project Contents

Allocate an **ID number** to each macro in the Project. Highlight the ID column and use the **Autonumber** button at the far right of the button bar to allocate numbers automatically. A description can be entered for each file.

3.7 Saving the New Project

From the **File Menu** choose **Save Project As.**

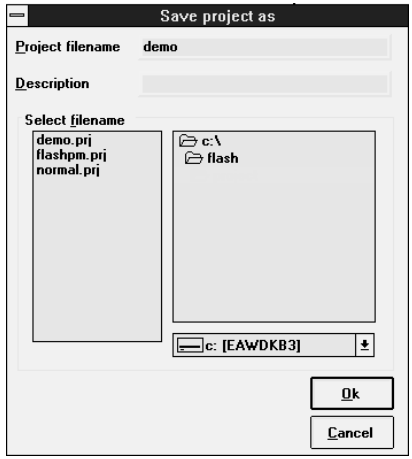

Figure 3.17 Saving a Project

Give the Project a name and, optionally, a description to help identification. Change the directory if necessary. Then click on **OK**.

3.8 Download the Project to the NVM

From the Main Screen, select **Run** and then select **Download to the Printer.**

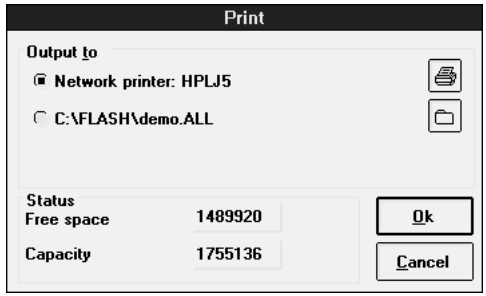

Figure 3.18 Output Selection Screen

Select **Output to** the printer. It is also possible to select output to a file for later downloading to several printers at once. Click on **OK**. A progress screen will be displayed.

If the download has been successful (and provided that BiDi is enabled) a green bar will be displayed by each file in the Project. A test print of each file in the Project can now be produced. Highlight a file and click on the **Test print** button in the button bar. The NVM can be checked using the BiDi facility (if available). Click on the **BiDi Information** icon in the tool bar to see the contents of the NVM.

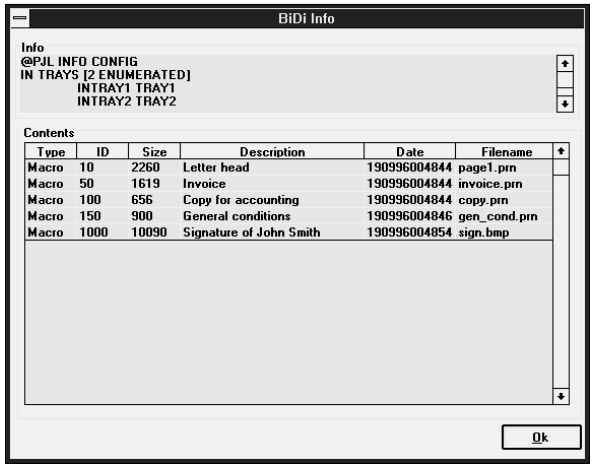

Figure 3.19 BiDi Information Screen

4. Managing the NVM

4.1 Setting up the HP Forms and Font Manager

Having followed the steps in the Getting Started section, the HP Forms and Font Manager will be configured and running.

4.2 Defining Your Environment

The first step in creating a new Project is to configure the environment in which the project will operate. From the **Options Menu,** select **Environment** to display the environment screen. *(shown in Figures 3.6, 3.7 and 3.8 in the Getting Started Section).*

4.2.1 Password

The Password panel allows a new password to be set or an existing password to be modified or deleted. This panel can be used on its own or in conjunction with a Project. *(Instructions for setting a password on a new NVM module are in the Getting Started section).*

To change the password on an NVM module that is already password protected, do the following:

- Select **Options/Environment**
- Type the current password in the **Current Password** box.
- Type the new password into the **New Password** panel. Select **OK**. A dialog box will appear with **'Password is changed. Update now?'** displayed. Click on **Yes.**
- The password will be downloaded to the NVM and **'NVM Open'** will be briefly displayed on the printer's front panel
- When the download is complete, **'Ready'** will appear on the printer's front panel.
- To download a macro and/or font with password protection, the password in the **Current Password** box must be the one set on the NVM and the **Password** box must be checked in the **File Properties** screen

To delete a password from the NVM do the following:

- Select **Options/Environment**
- Type the current password into the **Current Password** box
- Leave the **New Password** field blank and check the **Clear Password** box
- Select **OK**. A dialog box will appear with **'Password is changed. Update now?'** displayed. Click on **Yes**.
- The password deletion will be downloaded. **'NVM Open'** will be briefly displayed on the printer's front panel.

- When the update is complete **'Ready'** will appear on the printer's front panel.
- To verify that the password has been disabled, either click on the **Status Page** button to print a status page or click on the **BiDi Info** button to see the status on screen.

Remember: *if the password is deleted, none of the macros, forms, fonts or signatures in the NVM will be password protected. If the password is forgotten the NVM will have to be re-initialised, which will erase all data stored in it.*

4.2.2 Paths and Files

The paths option allows the path to the directory in which the download files should be saved to be specified. A backup of the existing download file can be created each time a new one (the .ALL file) is saved if the **Make .BAK** file option is checked. If it is not checked a backup file will not be created.

If the .ALL files are to be stored in hexadecimal format (typically for use in environments that support only 7-bit ASCII) a check mark should be put in the **Hex Format** box.

4.2.3 BiDi

BiDi must be enabled in the Environment/BiDi screen *(See Figure 3.5 in the Getting Started section)* to allow BiDi communications with any printer on the network without interrupting print jobs.

This option allows monitoring of the status of the selected printer by displaying messages from its front panel on your computer screen.

Choose the printer to be monitored from the **File/Printer Select** menu in the HP Forms and Fonts Manager Main Screen. Highlight the required printer from the drop down list box and click on **Select**.

Check the **Check Printer for BiDi** box then click the **Test Now** button. The printer front panel message should be appear in the box below. When working on a Project the front panel messages will be displayed at the right hand end of the tool bar. If **Check printer for BiDi** is not selected the HP Forms and Font Manager will not monitor BiDi signals from any printer. This setting controls the action of the **BiDi Connect** button.

Note: *If the PC is connected to a network* ***and*** *has a local printer physically connected to LPT1, be aware that selecting the printer on LPT1 in the Printer Select box enables BiDi communication with the physically connected printer. If network printer redirection of LPT1 is enabled to allow printing to a printer on the network, data will be downloaded to the network printer even though the BiDi communication is with the local printer. Be particularly careful of this when using General Updates functions.*

4.3 Setting Project Defaults and Using the Advanced Options

The Project defaults will affect all of the files in the Project. If necessary, they can be over-ridden on a file-by-file basis, using Advanced Options which can be accessed by clicking on the Red A to the right of the file name in the Projects Contents window of the Main Screen. Some of the settings are file specific and screens which control these are not available when setting Project Defaults.

4.3.1 File Properties

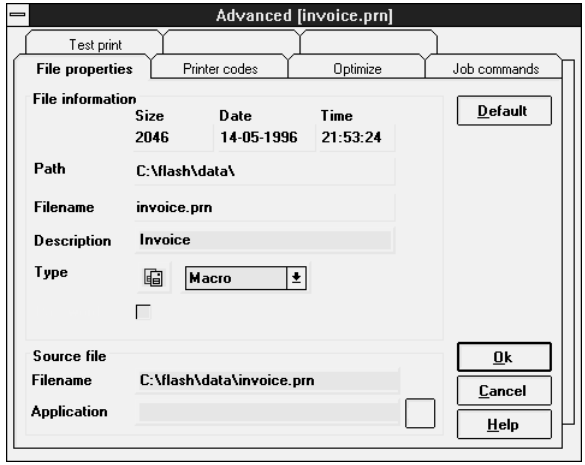

Figure 4.1 Advanced Options/File Properties Screen

This screen is available in the Advanced Options set only. It shows information about the selected file. The description field allows text to be entered to help identify the file. The file type is determined by the HP Forms and Font Manager by examining the contents of the file. If the file type is incorrect, it can be altered by selecting the correct file type from the drop down list box. If the macro is to be password protected, check the **Password** box.

The lower part of the screen allows the name of the source file from which the macro was made to be entered, so that it can be edited if required. If the source file is to be edited, click on the **Run** button to launch the associated application. (This feature relies on the associations set up in the Extensions section of the WIN.INI file).

4.3.2 Font Information

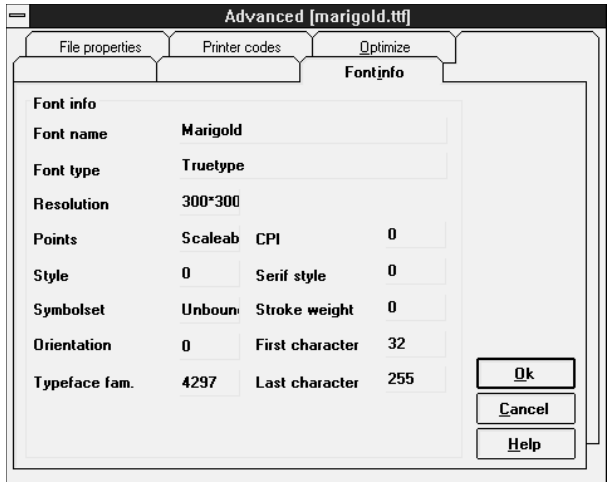

Figure 4.2 Advanced Options/Font Information Screen

This screen is only available from the Advanced Options set and gives detailed information about the selected font. There are no settings here to configure. *For an in-depth explanation of PCL font characteristics please refer to the Hewlett-Packard PCL5 Printer Language Technical Reference Manual (HP Part N°. 5961-0509).*

4.3.3 Printer Code Exclusion

The **Printer Code Exclusion** panel allows the selection of escape sequences and printer commands to be excluded from the files added to the project.

Most applications will insert printer commands when creating output files. These commands may not be required when using the file as a macro. (e.g. an invoice template should not print and formfeed before the invoice data has been merged).

The default is to strip all the codes which control the mechanical functions of the printer. These codes are listed in the panel. Any necessary control codes can then be inserted at the right place in the Project using the **Job Command** functions *(see below)*. This panel is also available in the Advanced Options set, to allow the default settings for individual files to be over-ridden.

4.3.4 Job Commands

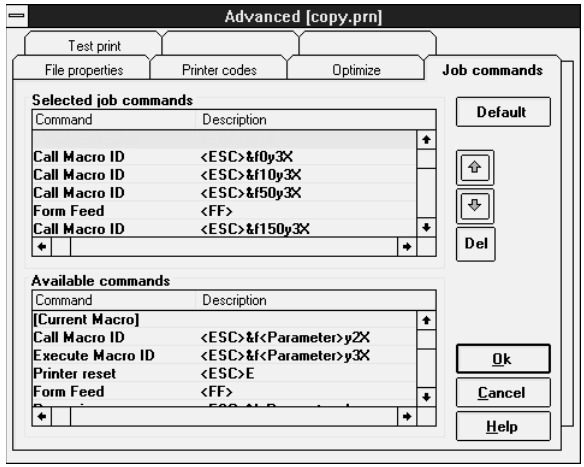

Figure 4.3 Advanced Options/Job Commands Screen

This is accessed through selecting **Options/Project/Defaults.** Select those printer control commands from the list of Available Commands that should be issued before or after the file. (e.g. a Form Feed command may be required before printing a letterhead macro to ensure that it is always printed at the top of a new page). The order of commands can be re-arranged by highlighting one and then clicking on the Up and Down arrows at the side of the Selected Job Commands window to move it relative to the others. Commands can be included which are not predefined in the list of Available Commands by selecting **Use Escape** and supplying your own parameters.

The ability to send printer control commands before and after macros allows the construction of complex print jobs which are then very simple to use.

4.3.5 Optimize

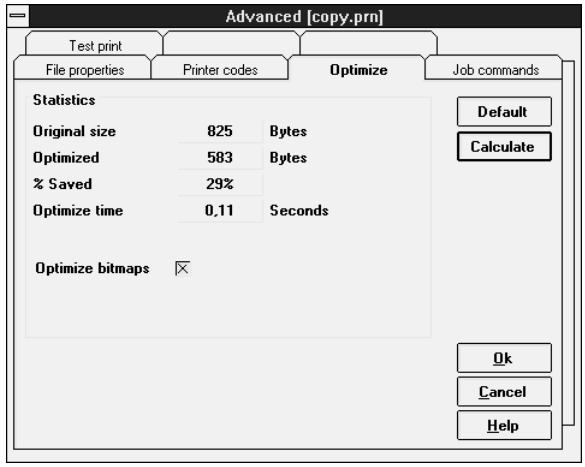

Figure 4.4 Optimization Screen

Optimization uses a compression algorithm to minimise the amount of storage space taken up on the NVM. The default is to optimize all files. If **Optimize bitmaps** is deselected, any bitmap files in the Project will not be compressed. This panel is also available in the Advanced Options set, and can be used to calculate the the amount of space saved by compressing the file, as well as the time taken to carry out the compression.

4.3.6 Bitmap

4.3.6.1 Convert Bitmap

This panel is used to define how the NVM will handle the conversion of bitmap files. The HP Forms and Font Manager can convert a bitmap to either a macro file or a font. Generally the default should be set to **macro**. Use conversion to a **font** when processing bitmaps to be included in a text stream (e.g. scanned signature bitmaps).

When a bitmap is saved there will probably be white space saved around the edge of the graphic. If the white space is not required select **Remove White Space**. Any extraneous white space will be stripped, which will save memory in the NVM.

If the graphic is black on white but a negative image is required (white on black), check the **Invert Picture** box. If the graphic is inverted, the white space around it becomes black. This should be taken into consideration when deciding whether or not to select **Remove White Space.**

4.3.6.2 Font

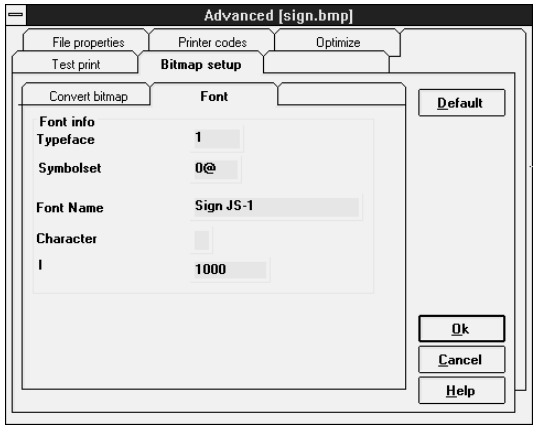

Figure 4.5 Advanced Options/Font Definition Screen

Advanced Options only: If bitmap **To font** conversion is chosen it will be necessary to assign a typeface ID number to the font. There may already be soft fonts stored in the printer's memory, and each of these fonts has an ID number. A listing of these can be obtained *(Refer to the printer's User's Reference Manual)*. The ID number allocated here should be different from those already in the printer (otherwise an existing font will be over-written). Enter the two character code for the symbol set required *(Refer to the HP PCL Technical Reference Guide, P/N 5961-0509, for a list of the Printer Commands for selecting symbol sets)*, give the font a name (up to 16 characters) and then select which letter will be used to call the bitmap. The ID at the bottom is the Font ID number assigned in the Project Window.

4.3.6.3 Macro

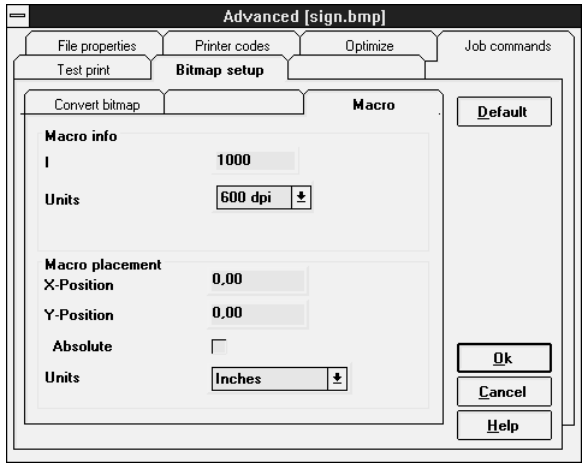

Figure 4.6 Macro Definition Screen

This screen is used to set the printing resolution for graphics and the co-ordinates for positioning the graphic on the page.

The Units list box allows the selection the units of measurement. The co-ordinates given will be measured relative to the last cursor position, which is where the preceding text stops. If an exact position on the page needs to be specified, check the **Absolute** box. The co-ordinates given will then be measured from the top left hand corner of the printable area of the page. *(Refer to the PCL 5 Printer Language Technical Reference Manual part No. 5961-0509 for information on the printable area of the page).*

In the Advanced Options set the Macro ID number assigned in the Project Window will be seen. Any of the default settings can be over-ridden.

4.3.6.4 Test Print Position

This screen is used to set the page orientation and the position on the page of test prints. As in the previous screen, select the units of measure from the Measures list box and then enter the co-ordinates for the placement of the test print. The co-ordinates are measured from the top left hand corner of the printable area of the page.

4.4 Creating a New Project

Now that the Environment settings and Project Defaults have been configured, a new Project can be created.

4.4.1 Selecting Files for Inclusion

Select the files to be added to the Project from the list box on the left hand side of the Main Screen (see Figures 3.11 and 3.12). The four buttons across the bottom of the list box allow the selection of the file types to be displayed by clicking on one or more buttons.

The following can be selected:

 font files,  macros,  bitmap files,  or all files.

Use the left-most  button to select the drive and directory which contains the files to be included. By default, the **FLASH/DATA** sub-directory is shown. The files will be listed with an icon identifying the file type beside the name. Any bitmaps in an unsupported format will be indentified in the listing with a red cross over the bitmap icon.

4.4.2 Assembling the Project

Click the mouse on the file to be included in the Project to highlight it. Multiple file selection follows normal Windows conventions using the Shift key (sequential) and the Ctrl key (non- sequential). Now either drag the files over to the **Project Contents** window and drop them in, or double click on the highlighted area, or click on the arrow to transfer it.

In the Project Window, select each file in turn and assign it a unique ID number, files cannot be downloaded without one. Click on the ID field to the right of the file name and type in a number. *ID numbers must be in the range 1 to 32767 (excluding the reserved range 31100 to 31400).*

If there are several files in the Project and sequential ID numbers are to be used, only the first one need be entered. The rest can be numbered automatically by choosing **View/Autonumber** from the menu bar or clicking on the **Autonumber button**. When all the required files have been gathered into the **Project Contents** window and IDs assigned to each the Project should be saved.

4.4.3 Saving the Project

Click on the **Save Project** button in the toolbar or select **File/Save** from the Menu bar. A dialog box will appear prompting for a Project name. Enter the Project name and optionally a brief description to help later Project identification. Click on **OK**.

The file will automatically be given the extension .PRJ and be saved into the **\PROJECTS** subdirectory.

4.4.4 Printing a Project list

A Project list can be printed which will show general information about the Project, information on the default settings, and all the fonts and macros included in the Project, along with the ID number for each one. To print this list either click on the **Print Project List** button in the toolbar, or select **Options/Documentation/Print Project List** from the menu bar. The Project must be open.

4.5 Working on an existing Project

Select **Open Project** in the **File Menu** or click on the **Open Project** button in the toolbar. An **Open Project** window will appear showing all Projects saved in the Projects subdirectory. (A different drive and directory can be selected if the required file is saved elsewhere.)

Select the Project to work on by clicking the mouse on the Project name to highlight it. It will appear in the Project field, along with a description if one has been entered. Click on **OK.**

The macros and font files contained in the Project will appear in the Project Window. Files can be deleted from the Project (highlight them using the arrow keys and then press the **Delete** key) or added (by copying them from the file list box on the left). Files may also be marked for deletion from the NVM (select the file and click on the **Remove file** button in the tool bar). If necessary, alter the configuration parameters of any file by clicking on the red **A** to the right of the file name to access the **Advanced Options**.

Files can be moved from one project to another by Drag and Drop.

When working with the selected Project is finished, click the mouse on the **Save Project** button or select **Save Project** from the **File Menu**. If the modified Project is to be saved as a different file, select **Save Project As** from the **File Menu**. A dialog box will appear prompting for a new Project name. Type a name in the box and, optionally, enter a description in the box below. Click on **OK.**

4.6 Downloading Data to the NVM

4.6.1 Download to one printer

Once a Project has been saved, click on the **Printer** button or select **Download to the Printer** from the **Run** menu. A window will appear asking where the output should be sent. The options are:

- Send it directly to the printer (a batch download file, using the same name but with the extension **.ALL**, will be automatically be saved into the **FLASH\DATA** subdirectory).
- Create a batch download file with the extension **.ALL**

Select **Output to** selected printer. **'NVM Open'** will be briefly displayed on the printer's front panel as the data is transferred into the NVM. Then, when the update is complete, **'READY'** will appear on the printer's front panel. If BiDi is enabled these printer messages will appear in the right hand end of the tool bar.

4.6.2 Test Print

Having assembled the Project and downloaded it, any of the files can be checked by producing a test print.

Highlight the file to test in the **Project Contents** window and either click on the **Test Print** button in the toolbar or select **Run/Test Selected Files** from the **Menu** bar.

If BiDi is enabled a message should appear briefly in the BiDi box saying **'NVM Open'**, and the selected file will then be printed.

4.6.3 Downloading to Network Printers

When a Project is to be used on multiple printers, do the following:

- Select **File/Open Project** and select a project.
- Select **Run/Batch printing** and select the printers to be updated. Make sure that those which are not to be updated are deselected.

4.6.4 Status Page

To check that the download has been successful, print a status page by clicking on the **Status Page** button in the toolbar or selecting **Documentation/status page** from the **Options** menu. A status page will be printed showing a list of macros and fonts stored in the NVM, together with a report of used and available memory.

4.7 General Updates

This feature allows the deletion of macros, forms, fonts or signatures in the NVM.

5. Accessing Stored Fonts and Macros

Once the Project has been downloaded to the NVM, it must be checked to ensure the fonts and macros can be accessed. To make fonts available it will be necessary to add them to the printer set-up.

5.1 Making Fonts available to Windows

In order to be able to use the fonts stored in the NVM from Windows applications, they must be defined in the Windows Printer Setup.

To set up the fonts for Windows, do the following:

- From **Control Panel,** select **Printers** and select the printer
- Select **Printer Set-up**
- Select **Fonts** and click on **Add/Delete** font. Select **Add Fonts**
- Select the drive and directory containing the Fonts Driver File *(when the software was installed this was set to **C:\PCLFONT**)*. Available Projects containing fonts will be displayed
- Select the required Project(s) and click on the **Add** button
- A prompt will ask for for the destination directory (default is **C:\PCLFONT)**
- Select **OK** and the selected Projects will be displayed in the Printer Window
- Select **Exit** to return to the **Setup** dialog. The installed Projects will appear in the list of Cartridges/ SIMMS. Highlight those containing fonts to be used. *(LaserJet 5SI: This step does not apply)*.
- Select **OK** to enable the font selection and exit Printer Setup

For Windows 95, do the following:

- From the **Start** menu, select **Settings/Printers**. The Printers dialog box will appear.
- Highlight the printer to be used by clicking on it and then select **File/Properties** from the menu.
- Click on the **Fonts** tab in the dialog box that appears.
- Choose either Download Fonts or run HP Font Smart and follow the instructions to select the fonts required.

The fonts are now available to all Windows applications and will appear on font lists.

5.2 Calling Fonts and Macros from Applications

5.2.1 Fonts

Fonts which have been downloaded to the NVM and installed in Windows *(See Section 4)* will appear in the font selection list boxes in applications.

5.2.2 Macros

In order to access Macros in the NVM, either the FlashPM™ utility can be used or an Escape Sequence can be inserted into the document. Consult the application documentation for instructions on how to insert Escape Sequences.

The FlashPM™ utility is included with the HP Forms and Font Manager and will have been installed automatically. To activate it, click on the FlashPM™ icon in the Windows Program Manager Flash SIMM group. Instructions on how to use the utility can be found by clicking on **Help** once the program has loaded.

The Escape character which begins an Escape Sequence, is a special character which cannot be typed directly from the keyboard and most applications have a special method for inserting it. Consult the application manual for instructions on how to insert the Escape character and then follow the steps below:

- Move the cursor to the point in the document where the Macro is to be inserted
- Type: **ESC&f####y3X** (Where **ESC** is the accepted method of entering an Escape Character and **####** is the Macro ID). It is important to type lower case 'f' and 'y' and a capital 'X'.

As an example, to insert an Escape Sequence in a Microsoft Word for Windows Version 6.0 or 7.0 document, do the following:

- Select the **Insert** menu from the menu bar. Select **Field**
- Scroll down the **Field Names** box and select **Print**
- In the **Field Codes** box below, the word PRINT appears. Type in the escape sequence between quotes but without the escape character after the word PRINT e.g. **"&f123y3X"**
- Click on **OK**

- From the **Tools** menu in the menu bar, select **Options**
- In the **View** screen, click on **Field Codes** check box to activate it. Click on **OK**.
- The Field Code is now displayed in the document. Position the cursor after the opening quote and before the **'&'** and insert the escape character by holding down the **ALT** key and typing **027** from the numeric keypad. It will be displayed as a box character.

6. PCL Commands

This section gives a brief explanation of the Job Commands in the HP Forms and Font Manager Advanced Options Menu. *For a full explanation of PCL commands, consult the PCL 5 Printer Language Technical Reference Manual (Part No. 5961-0509).*

Call Macro ID
Calls the macro whose identification number is specified. When a macro is called the current print environment is saved before the commands in the macro are carried out, and restored once the macro has completed.

Execute Macro ID
When a macro is executed, any changes which are made to the print environment remain in force once the macro has completed.

Form Feed
Causes the printer to eject a sheet of paper.

Papersize
Specifies the size of paper the printer is using.

Output Bin Selection
On printers which have more than one paper collection bin, selects output bin.

Papertray
On printers which have more than one input paper tray, selects the paper tray from which paper will be fed into the printer.

Orientation
Selects whether the job should print in portrait or landscape mode.

Simplex/Duplex
On printers that have duplex printing capabilities, selects whether to print on one or on both sides of the paper.

Job Separation
Some printers are able to separate one print job from the next by offsetting the sheets of paper in the output tray. This command causes the printer to offset a print job in the output tray.

Copies
Specifies the number of copies required.

Escape Sequence
This command inserts the Escape character and takes whatever parameter is supplied. The HP LaserJet Printer User's manual has a useful section on Printer Commands.

7. Glossary

BiDi

BiDi is a facility which allows two-way communications between a computer and a printer.

If the printer is connected directly to the parallel port of a PC, the parallel ports must be capable of supporting nibble mode as defined in IEEE 1284.

If the printer is connected to a PC by a network, the Network Operating System must conform to the Windows Sockets specification.

HP Forms and Font Manager is capable of operating with any Windows Sockets Compliant protocol implementation. HP Forms and Font Manager has a Windows Sockets Interface and is a Windows Sockets Application.

Font

A font is a complete set of characters of a given size and style. A font is identified by three elements; the type face (such as Times Roman or Courier), the type style (such as Bold or Italic) and the type size (such as 12pt). For example:

Times Roman Bold 10pt

Courier Italic 14pt

The HP Forms and Font Manager supports PCL Bitmap Fonts, Intellifont Scaleable Fonts, TrueType fonts and user-defined Symbol Sets if these facilities are available in the printer.

Font Drivers

The **Drivers** sub-menu allows the creation of drivers for fonts included in the Project. These drivers will be used to make the fonts available to application programs.

Macro

A macro is a group of printer commands and/or data which is downloaded for storage in the NVM.

Macros can be created using popular Word Processing/Forms Design software packages or from within the HP Forms and Font Manager program. Each macro is assigned a unique ID number (any number between 1 and 32767, excluding the range 31000 to 31400).

Once stored in the NVM, a macro can be called from within an application using the assigned macro ID number.

Practical uses of macros include forms such as invoices and purchase orders, standard letters, letterheads, logos and lengthy printer commands.

Further information on macros, PJL and HP PCL can be found in the Hewlett-Packard Technical Reference Documentation Package (Part No. 5961-0601).

Non-Volatile Memory (NVM)

Non-volatile memory is a term used to describe memory which retains its contents even when the power is switched off. In the context of this manual, this means HP Flash SIMM or HP hard disk options installed in an HP LaserJet printer.

Password Protection

Password protection prevents accidental or unauthorised modification or deletion of macros and/or fonts stored in the NVM.

Projects

One or more files (macros and/or fonts) grouped together. The details of the components of the Project are stored in a Project control file that is created when the Project is saved. Project control files are given the file extension .PRJ as a default and are held in the project directory.

8. Sample Projects

8.1 Working with Bitmaps

This assumes that a company logo is available as a Windows Bitmap. Use a graphics application to print the image to a file.

- From the **Windows Control Panel**, select the **printers** icon. A list of printers connected to the computer will be displayed.
- Select the printer to print to and click on the **Connect** button. A new dialog box will open with a list of ports to which the printer can be connected. Scroll down until you see **FILE:** and select it, then click on **OK**.
- Close the printers dialog box and then close Control Panel.
- Now print the image of the company logo. A prompt box will appear asking for a filename for the print file. Enter the complete path, for example, **c:\flash\data\logo.prn**
- From the HP Forms and Font Manager main screen, select the print file from the **Directory Contents** box on the left and double-click to copy it into the **Project Contents** box. Enter a **macro ID** number in the ID column.
- Save the project by clicking on the **Save Project** icon in the tool bar or by selecting **File/Save as...** from the menu bar. Give the project a name and description, if required, then click **OK**.
- Download the project to the printer by clicking on the **Download to the Printer** button and selecting the printer as the **Output to** option. The HP Forms and Font Manager will download the data.
- Do a test print by clicking on the **Test Selected Files** button in the tool bar.

8.2 Working with Fonts

- From the HP Forms and Font Manager software main screen, select **Files/ New project.**
- Select **Options/Environment.**
- In the **Directory Contents** window, double-click on a font file to move it to the **Project Contents** window.
- Enter the **Font ID** in the ID column.
- Save the project by clicking on the **Save Project** icon in the tool bar or by selecting **File/Save as...** from the menu bar. Give the project a name and description, if required, then click **OK**.
- Select **Run/Download to the Printer** then select the printer NVM option from the dialog box. HP Forms and Font Manager will download the project to the printer.
- Select **Options/Driver**.
- Font drivers will be created and placed in C:\PCLFONT (for Windows) and in C:\AUTOFONT (for DOS applications).
- To test the Font, highlight it in the Project Window and select the **Test Macro** button. A font sample will print on the default printer.
- Now install the font driver into Windows *(See Section 5)*.

8.3 Converting Bitmaps to Fonts

- Scan a signature or other graphic and save it as a file, for example, c:\flash\data\sign.bmp.
- From the HP Forms and Font Manager main screen, select the bitmap file of the signature from the **Directory Contents** box. If the file is not shown, use the **folder button** under the list box to choose the drive and directory to which the file was saved.
- Highlight the file and double-click to copy it over into the **Project Contents** window. Enter an ID number in the ID column.
- Select **Options/Project Defaults**.
- Select the **Bitmap** tab and check the **To Font** option.
- Click on the **Font** tab. Enter a typeface number, a symbol set selection code (use 15Q which is the Roman8 symbol set), and a name for the font.
- Enter the character to be typed whenever your signature is to be printed. The ID number below is the Font ID number which was assigned to this file in the **Project Contents** window. Click on **OK**.

- Save the project by clicking on the **Save Project** icon in the tool bar or by selecting **File/Save as...** from the menu bar. Give the project a name and description, if required, then click **OK**.
- Select **Run/Download to the Printer** then select the printer NVM option from the dialog box. HP Forms and Font Manager will download the project to the printer.
- Select **Options/Driver**.
- Font drivers will be created and placed in C:\PCLFONT (for Windows) and in C:\AUTOFONT (for DOS applications).
- Do a test print by clicking on the **Test Macro** button in the toolbar.
- Now install the font driver into Windows (See Section 5).
- To print your signature in a word-processing document type the chosen character, highlight it, apply the font name to it, and print the document.

8.4 Complex Jobs

By using appropriate Job Commands to control a series of macros it is possible to automate the printing of complex documents. In this example the document is a duplicate sales invoice bearing the Terms and Conditions of trade on the reverse of the original and the word COPY on the duplicate. This example assumes that the output printer is capable of duplex printing and has two paper trays.

- Using a word processor or Forms Design software, prepare a blank invoice (portrait format) and **print to a file** called INVBLANK.PRN. (See Section 8.1 above).
- Using a word processor prepare the Terms and Conditions to appear on the reverse of the invoice and **print to a file** called T&C.PRN.
- Using a graphics program or a word processor prepare the "COPY" text. Select a large font size and an outline typeface and position the word "COPY" in the middle of the page. **Print to a file** called COPYTXT.PRN.
- From the HP Forms and Font Manager software main screen, select **Files/ New project.**
- Highlight the three files INVBLANK.PRN, T&C.PRN and COPYTXT.PRN in the **Directory Contents** box and double-click to copy them into the **Project Contents** box.

- Assign **macro ID** 1 to INVLBLANK.PRN, 2 to T&C.PRN and 3 to COPYTXT.PRN
- Click on the red A to the right of the COPYTEXT.PRN file, then click on the **Job Commands** tab.
- From the list of **Available Commands** double click on **Simplex/Duplex** and type **'1'** in the prompt box. The command is copied into the upper window.
- From **Available Commands** select **Papertray** and type **1** in the prompt box to select the main papertray.
- From **Available Commands** select **Call Macro ID**, and enter 4 in the prompt box. (This ID will be for the invoice data). The command is copied to the upper window.
- From **Available Commands** select **Call Macro ID**, and enter 1 in the prompt box. (This is INVBLANK.PRN). The command is copied to the upper window.
- From **Available Commands** select **<FF>.** (This will eject the page with the invoice form and invoice data printed on the front).
- From **Available Commands** select **Call Macro ID**, and enter 2 in the prompt box. (This is T&C.PRN). The command is copied to the upper window.
- From **Available Commands** select **<FF>.** (This will eject the page with the invoice form and data printed on the front and the terms and conditions on the back).
- From the list of **Available Commands** double click on **Simplex/Duplex**, choosing **Simplex** when the prompt box appears. The command is copied into the upper window.
- From **Available Commands** select **Papertray** and type **5** in the prompt box to select the secondary papertray. (This tray can be filled with coloured paper).
- From **Available Commands** select **Call Macro ID**, and enter 4 in the prompt box. (This is the invoice data for the copy invoice). The command is copied to the upper window.
- From **Available Commands** select **Call Macro ID**, and enter 1 in the prompt box. (This is INVBLANK.PRN). The command is copied to the upper window.
- The last entry in the top window is Current Macro, which is the COPY text to be overprinted on the copy invoice
- Click on **OK.** Save the project

- Click on the **printer** button in the toolbar to download the project to the printer.
  - To do a test print, highlight the COPYTXT.PRN macro in the project window and click on the **test print** button in the toolbar. The test should produce a blank invoice with the Terms and Conditions text printed on the back and another blank invoice with COPY overprinted.
  - In your invoicing application enter the following escape sequence at the beginning of the invoice: **<esc>&f4y0X**
    This starts recording the macro that contains the data for this invoice. Then enter the invoice data. At the end of the data enter the following escape sequence: **<esc>&f1x9x3y3X**
    This will call the COPYTXT macro which will call the others in sequence.