Harlequin RIP™

ProofReady Plugin for Epson Variable Size Droplet Printers

Version 1.2r1

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Note to OEMs: This document is presented for inclusion in end-user documentation, such as a manual based upon the *Harlequin RIP OEM Manual*, or for use as a supplement to that manual. You may wish to change the introduction to this document to suit the presentation you choose. (Notes like this one are not meant for onward publication to end-users. They give information of interest only to staff at Global Graphics and its OEMs.)

1.1 Introduction

This document describes the Epson VSD printer plugin and is suitable for the following Epson printers:

- Stylus Pro 4000
- Stylus Pro 5500
- Stylus Pro 7600
- Stylus Pro 9600
- Stylus Pro 10000
- Stylus Pro 10600

- Stylus Photo 2200

Using Micro Piezo™ print head technology these printers deliver extremely precise ink droplets to produce ultra-sharp resolution prints at high speeds.

Please refer to the Release Notes for the list of platforms on which the plugin is supported.

1.1.1 Plugin features

The Epson VSD plugin has the following built in features:

- Instant color management using color profiles

- Delivers a wide range of print resolutions and output quality

- Support for PhotoInk (CMYKcm) 6-color output and 7-color (CMYKcmk) output (some models only)

- Support for HEDS1 and HEDS2, Global Graphics' advanced screening technology

- Preview of the screened output

The Epson VSD plugin is provided with pre-configured color setups and calibration profiles that enable instant color management—hence the name *ProofReady*.

1.1.2 Biplane device type vs. 2-bit device type

The device type you select determines if the plugin implements two color planes (a *biplane device type*) or expects 2-bit screening information from the RIP (a *2-bit device type*). When selecting a device in a Page Setup dialog box, biplane devices include `VSDbi` in their name, for example, `SP10000 VSDbi Roll`. Whereas 2-bit device types include `VSD`, for example, `SP10000 VSD Roll`.

Note also that the HEDS2 plugin must be installed and enabled to output using the 2-bit device types, see "Installation procedure" on page 4 for details. In particular HEDS2 must be available when sending output to the Epson Stylus Pro 4000, 7600, 9600 and 10600, because there are currently no biplane device types available for these printers.

Note: If you try to use a 2-bit device type without installing and enabling the HEDS2 plugin, the RIP may unexpectedly quit or freeze. We therefore recommend that you use the supplied installer and a password file, to ensure that the plugin is correctly installed and enabled.

1.1.3 1-bit device types

A separate device type also exists for the Epson Stylus Pro 5500 and the Epson Stylus Pro 4000 when outputting at a resolution of 360 x 360 dpi. This *1-bit device type* outputs using a fixed dot size, which is more suitable for these printers at such a resolution. You can also use a 1-bit device type to output to the Epson Stylus Pro 5500 at 2880 x 720 dpi. This 1-bit device type produces faster prints, but we recommend that you use the equivalent 2-bit device type as it produces higher quality output.

For the same reason, a separate device type exists for the Epson Stylus Pro 7600/9600 and the Epson Stylus Pro 4000 when outputting at a resolution of 2880 x 1440 dpi. This *1-bit device type* outputs using a fixed dot size, which is more suitable for these printers at such a resolution.

You can also use 1-bit device types to output to the Epson Stylus Pro 7600/9600 at 360 x 360 dpi. Similarly, these 1-bit device types produce faster prints, but we recommend that you use the equivalent 2-bit devices types as they produce higher quality output.

The names for such 1-bit device types refer to the output device and do not include `VSD` or `VSDbi` in their label, for example `SP7600 Sheet`.

Note that must install and enable the HEDS1 (Harlequin 1-bit Error Diffusion Screening) plugin or enable the use of HDS/HDS Light to output using the 1-bit device types. "Installation procedure" on page 4 describes how to install the HEDS1 plugin, in case it is not automatically installed as part of the RIP. See Section 1.2.3 for details on enabling the use of HEDS1 and HDS screening.

> **Note to OEMs:** See Technical Note Hqn 046 for further details on how to enable Harlequin 2-bit and 1-bit EDS (HEDS2 and HEDS1) screening in version 5.5r1c or later of the RIP.

1.2 Installation procedure

Before installing the plugin, you should check that you meet the system requirements listed in Section 1.2.1.

1.2.1 System requirements

Before installing the Epson VSD plugin, ensure your system has the following requirements:

Harlequin RIP	Harlequin RIP 5.5r1c or later installed.
System memory	128 MB RAM.
Minimum disk space	1 GB (more if producing large format or high-resolution output).
Additional plugins	Enable *ColorPro* or *HIPP* to use the color profiles supplied with the plugin. See, "ProofReady profiles" on page 19. Enable *HEDS1* and/or *HEDS2* to use Global Graphics' advanced screening technology. Enable HDS or HDS Light to use Harlequin Dispersed Screening technology.

- For large format or high-resolution jobs, in the Configure RIP dialog box, increase the **Printer buffer** setting to at least `20000 KB` and **Disk space left for system** to `20 MB`.

- On Mac OS 9.*x*, increase the setting for **Minimum memory left for system** in Configure RIP to at least `30000 KB`.

1.2.2 Using the Product Installer application

This procedure describes how to install the Epson VSD plugin with the Product Installer application.

1. To start the installation procedure close the Harlequin RIP, if it is loaded.

2. Double-click the installer file (`install-macos9`, `install-macosx`, `install-linux` or `install.exe`), to start the Product Installer application (Figure 1.1).
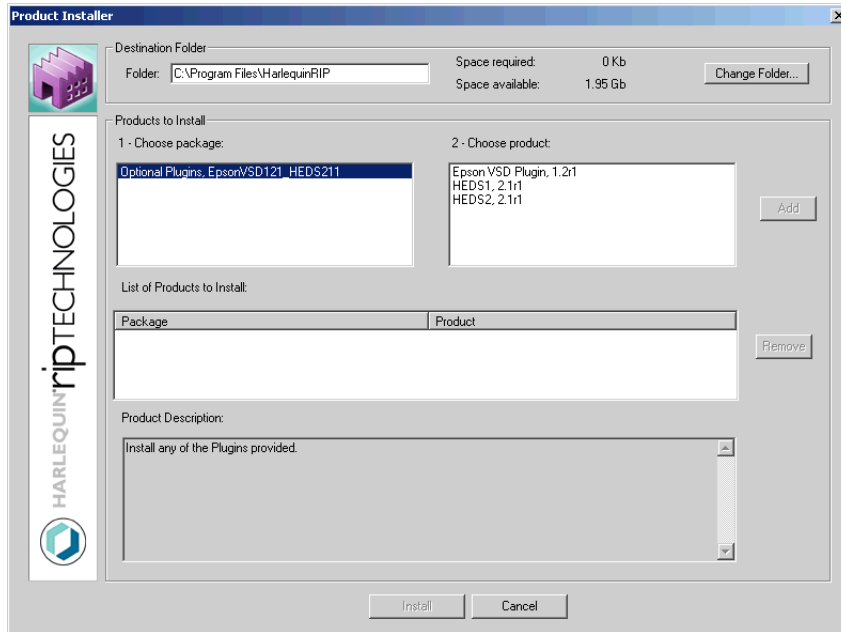
Figure 1.1 The Product Installer application

3. Check the destination folder matches the location of your RIP. If necessary click the **Change Folder** button to select the correct folder.

4. To install the Epson VSD plugin select the following options:

    Package: `Optional Plugins, EpsonVSD121_HEDS211`

    Product: `Epson VSD Plugin, 1.2r1`

5. Click **Add** to add the plugin to the list of products to install.

6. Many of the ProofReady profiles supplied with the Epson VSD plugin require HEDS1 and HEDS2 screening to be available in the RIP. If your RIP does not have these features installed, add them by selecting the following packages and products in the Product Installer:

   Package: `Optional Plugins, EpsonVSD121_HEDS211`

   Product: `HEDS1, 2.1r1`

                           `HEDS2, 2.1r1`

7. Click **Add** to add these items to the list of products to install.

8. When you are ready, click **Install** to copy the selected products from the CD to the destination folder. Then click **OK** to close the Product Installer application and restart the RIP.

Notice that as the RIP loads the following messages appear in the RIP monitor window:

```
ProofReady - Epson VSD
        Plugin Version 1.2r1 - Copyright (c) 2001-2004 Global
Graphics Software Ltd. All Rights Reserved.

Harlequin Error Diffusion Screening 1-bit Plugin Version 2.1r1
- Copyright (c) 1998-2003 Global Graphics Software Limited. All
Rights Reserved.

Harlequin Error Diffusion Screening 2-bit Plugin Version 2.1r1
- Copyright (c) 1998-2003 Global Graphics Software Limited. All
Rights Reserved.
```

If you do not see these messages try reinstalling the plugin and check carefully that the installation folder matches your RIP installation folder.

Before the printer can be used in a page setup you must enable the Epson printer(s) in the RIP options, as described in "Enabling the Epson VSD plugin in the RIP" on page 7.

1.2.3 Enabling the Epson VSD plugin in the RIP

The newly installed Epson VSD plugin and screening options must be enabled with a password before they become available in the RIP. Often your supplier will provide you with a password file that contains all the passwords for the relevant options. To use the password file, place it in `\HarlequinRIP\SW\Passwords\` and restart the RIP. If individual passwords have been supplied you must enter them in the Configure RIP Extras dialog box, as described next.

1. Start the Harlequin RIP and open the Configure RIP dialog box (**CTRL+R**).

2. In the Configure RIP dialog box, click the **Extras** button to open the Configure RIP Extras dialog box.

3. From the list of RIP extras, enable the following options by double-clicking the feature you wish to enable and entering the correct password:

`Epson, Stylus Pro <model> VSD`	Enables the Epson printer for use in page setups.
`Harlequin ColorPro`	Enables Harlequin ColorPro color management, as used by the ProofReady profiles supplied with the plugin. This option is only available to the Eclipse Release RIP.
`HIPP`	Enables HIPP color management. This option is only available for pre Eclipse Release RIPs.
`HEDS1`	1-bit screening technology used by the some of the supplied ProofReady profiles.
`HEDS2`	2-bit screening technology used by the some of the supplied ProofReady profiles.

<table>
<tr><td><code>HDS or HDS Light</code></td><td>Enable HDS or HDS Light to use VSDbi (biplane) device types.</td></tr>
</table>

4. Click **OK** until all open dialog boxes are closed to finish enabling the new RIP extras.
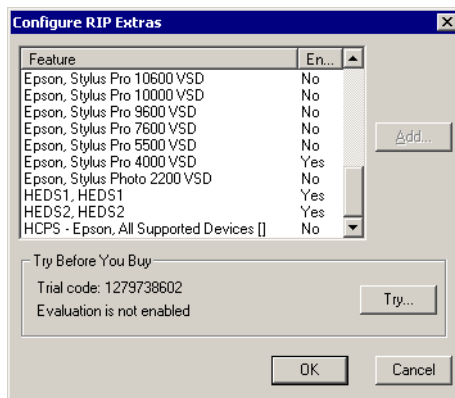
Figure 1.2 Epson printer and HEDS1 and HEDS2 enabled

1.2.4 Allocating additional memory to the RIP

For correct operation of the plugin you may need to allocate additional memory to the RIP. If insufficient memory is available, the RIP will not be able to process a job and may stop working altogether, requiring a restart.

The precise amount of memory required by the RIP to process a particular job depends on the printer model, page size, output quality and the screening method employed. For a detailed analysis of how much memory to allocate, see "Calculating memory requirements for the Epson VSD plugin" on page 83. Alternatively, enter, using the figures below as a guide, enter settings for printer buffer, Some initial experimentation may therefore be necessary

before the optimum memory settings for the RIP are found. However, as a general guide we recommend setting the following options in the Configure RIP Options dialog box (Figure 1.3).
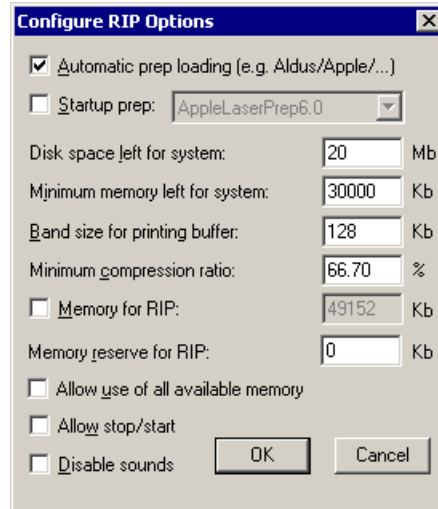
Figure 1.3 The Configure RIP Options dialog box

Standard size pages or low/medium resolution jobs

- Printer buffer: `20000 KB`
- Disk space left for system: `20 MB`
- Minimum memory left for system: `30000 KB`

Large size pages or high resolution jobs

- Printer buffer: `40000 KB`
- Disk space left for system: `20 MB`
- Minimum memory left for system: `30000 KB`

HEDS1 and HEDS2 screening allocate extra memory as follows

- Printer buffer: `50000 KB`
- Disk space left for system: `20 MB`
- Minimum memory left for system: `30000 KB`

If cost is not an issue, we recommend adding extra memory to your RIP box and increasing the memory allocation options accordingly. In general, the more memory you can allocate to the RIP, the quicker your jobs will be processed and the more stable the RIP will be.

1.2.5 Printer connection

The following figure and table show the supported methods for connecting Epson VSD printers to various platforms and interfaces. (Some printer interfaces are optional upgrades or available on a restricted range of Epson models.)
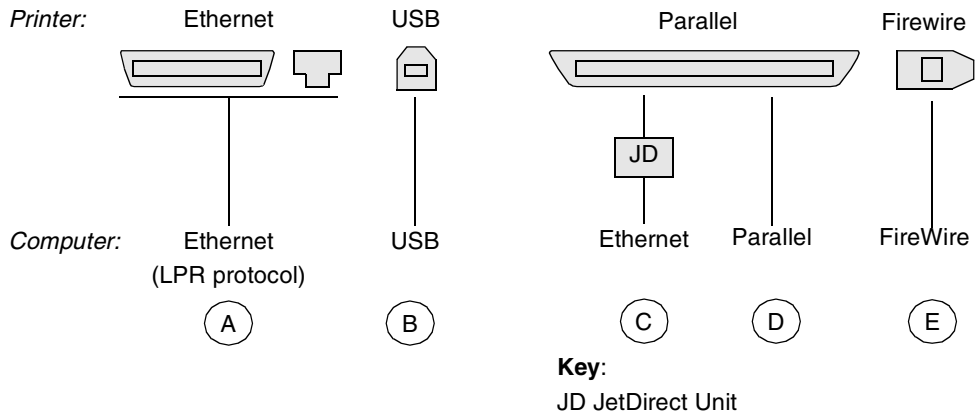
Figure 1.4 Printer connection methods

	10000/10600	5500	7600/9600	2200	4000
Windows ME	A, B, (C), D, E	(A), B, (C), D, (E)	(A), B, (C), D, (E)	B, D, E	A, B, E
Windows NT	A, (C), D, E	(A), (C), D, (E)	(A), (C), D, (E)	B, D, E	A, E
Windows 2000	A, B, (C), D, E	(A), B, (C), D, (E)	(A), B, (C), D, (E)	B, D, E	A, B, E
Windows XP	A, B, (C), D, E	(A), B, (C), D, (E)	(A), B, (C), D, (E)	B, D, E	A, B, E
Mac 9.*x*	A, B, (C)	(A), B, (C)	(A), B, (C)	B	A, B
Mac OS X	A, B, (C)	(A), B, (C)	(A), B, (C)	B,	A, B
Linux	A	(A)	(A)		A

Letters in brackets indicate the printer interface is optional or the connection requires additional software to be installed. For example, an internal 10/100 Base-T type B Ethernet card is optional on the Epson Stylus Pro 7600.

1.2.6 Notes on connections

When connecting the Epson printer to your computer, the following notes may prove useful:

- When connecting via a parallel printer port on a PC, ensure the parallel port is set to "Bidirectional" in the system BIOS. Consult your PC manual for details about accessing and setting the BIOS. If you have any problems using the parallel port, refer to page 72 and page 78 of the "Troubleshooting and tips" section.

- When connecting to Mac OS X via USB, ensure the printer has cycled through its initialization routine before starting the RIP. LCD-equipped printers should show "Ready", and non-LCD printers should have their "Operate" or "Ready" light on steady (not flashing).

- USB to parallel is also supported on Mac OS X, although so far this has currently only been tested using Epson's own cable (Epson USB Adapter ISO USB Smart Cable ISD-103).

- When using a USB connection on the Macintosh it has been found that a conflict can occur with the 'Internal V90 Modem' Extension. This can cause communications errors and system lockups during printing. Disabling this extension can resolve these problems.

1.3 Epson printer device types

Each Epson printer is supplied with a selection of device types. For example, the Epson 4000 VSD printer has four devices: `SP4000 Roll`, `SP4000 Sheet`, `SP4000 VSD Roll` and `SP4000 VSD Sheet`. The device you select establishes which ProofReady profiles are available to the RIP, which in turn determines the media type and resolution the output is optimized for.

The first time you enable an Epson VSD printer *all* supported device types for that printer are made available in the Device Manager and in the **Device** menu in the Page Setup dialog box. However, if you enable another Epson VSD printer you must manually create the device types, as described next.

1.3.1 Creating device types

Roll-fed devices and sheet-fed devices are distinguished by the inclusion of a suffix; either `Roll` or `Sheet`. The `VSDbi` suffix indicates that the device type uses two colorant planes to achieve the variable size dot effect (a *biplane device type*), and the `VSD` suffix indicates that the device type expects 2-bit screening information from the RIP (a *2-bit device type*), as described in the "Introduction" on page 1.

Device types that do not include either a `VSD` or `VSDbi` suffix are *1-bit device types* that use a fixed dot size to produce more suitable output for some of the printers at particular resolutions. For example, a 1-bit device type is used when printing to the Epson Stylus Pro 7600/9600 devices at a resolution of 2880 x 1440 dpi to help prevent overinking.

If the **Device** menu in the Page Setup dialog box does not contain the device that you require, you must use the Device Manager to create such a device:

1. Use the menu option **Harlequin RIP > Device Manager** to open the Device Manager. Alternatively, click the Device Manager icon next to the **Device** menu in the Page Setup dialog box.

2. Depending on your platform, choose either `epsonvsd.i32` or `epsonvsd` from the **Plugin** menu and click **New**.

    Choose the device type you require from the **Type** menu in the Device Manager Edit dialog box and enter a name for the device in the **Name** text box. If you use the same name as the device type, it must match the use of uppercase and lowercase letters. Otherwise an error will appear when using a page setup with this device type, as described on page 76.

3. Click **OK**. The device will be listed in the Device Manager and become available for selection in the Page Setup dialog box.

You can now create a page setup using the device, as described on page 13.

1.4 Plugin Limitations

The ProofReady plugin generates an output color format that the printer can accept. This format is either 6-color or 7-color PhotoInk composite and is screened using one of several screening options.

The 6-color and 7-color PhotoInk formats impose the following restrictions:

- No use of trapping using EasyTrap and no use of trapping in Eclipse Release RIPs when using PhotoInk formats. You must use TrapWorks 5.5r0 to trap PhotoInk formats. Note that TrapWorks and TrapPro treat light inks as separate colors rather than creating a single trap for all inks of the same color. For example, Cyan and Cyan light are trapped separately.

- EDS, Error Diffusing Screening is currently not supported on Mac OS X. However, HEDS1 (1-bit Harlequin Error Diffusing Screening) and HEDS2 (2-bit Harlequin Error Diffusing Screening) are both supported.

1.5 Creating page setups in the RIP

The procedure for creating a page setup that includes color management differs according to the RIP version you are using. "Creating a page setup in pre Eclipse Release RIPs" on page 17 describes the procedure for supported pre Eclipse Release RIPs. The following instructions are for Eclipse Release RIPs and later.

1.5.1 Creating a page setup in Eclipse Release RIPs

To create a ProofReady page setup in the Eclipse Release or later of the Harlequin RIP, you simply need to select a ProofReady profile, as described in the procedure below.

For each numbered step of the procedure the corresponding numbers in Figure 1.5 highlight where choices are made in the New Page Setup dialog box.

Figure 1.5 Creating a page setup in Eclipse Release or later RIPs

① Open the Page Setup Manager and click **New**.

② Choose the device required from the **Device** menu.

   Note: If the device you require is not in the **Device** menu, see "Creating device types" on page 12.

③ Click **Configure device** to modify configuration settings as desired. See "Device configuration" on page 28 for details.

If using a supplied profile choose the **Enhanced Microweave** option from the **Quality** menu, because the supplied profiles were created using this setting.

④ Choose a profile from the **ProofReady** menu that matches the currently selected ink/paper type. The correct resolution for the profile is automatically selected and should not be changed.

For example, **(Ucm Enhanced Matte 720)** is a profile for Epson Enhanced Matte Paper based on a resolution of 720 x 720 dpi using UltraChrome™ inks. See "ProofReady profiles" on page 19 for a full list of supplied profiles.

Note: When you select a ProofReady profile, a default **(ProofReady)** color setup is automatically selected in the **Color** menu. Choose **(None)** from the **ProofReady** menu if you wish to use a ColorPro color setup that you have created, as described in "Creating a HIPP or ColorPro color setup" on page 60.

⑤ Choose a Separations, Screening and Color option from the **Style** menu. There is usually just one option available, which suits the style required by your output device.

⑥ If using a biplane device type, check in the Edit Style dialog box that screening is set to its default value of **HDS Super Fine.**

Otherwise skip to step⑦.

To open the Edit Style dialog box, click the Separations Manager icon. Click **Edit** in the Separations Manager and check the screening option in the **Dot shape** menu. Click **OK** twice to return to the Page Setup dialog box.

⑦ Choose **(None)** from the **Calibration** menu.

Note: Selecting a **ProofReady** profile includes a default calibration profile. For optimum results you can choose a calibration set that has

been generated for the actual printer rather than for a reference printer. See "Calibrating the printer" on page 54 for details.

⑧ Click **Page Layout** to specify the positioning of the page, using the margin and centering controls.

Note: If you are using a sheet-fed device, you must refer to details on how to control top and bottom margins provided in the Page Layout section on page 51.

⑨ Click **Save As** and enter a page setup name in the **Save As** text box. Click **Save** in the Save Setup dialog box and then **OK** in the Page Setup Manager.

You can now use this page setup when printing to produce color managed output.

Note: When printing on a sheet or roll-fed device the paper source must match the paper source setting on the front of the printer. Otherwise, if a printer is loaded with a roll of paper but the paper source is set to sheet the printer may treat the roll as if it were a single sheet. When printing, the printer then attempts to feed to the end of the roll.

1.5.2 Creating a page setup in pre Eclipse Release RIPs

This section describes how to create a page setup that includes color management in supported pre Eclipse Release RIPs.

For each numbered step of the procedure the corresponding numbers in Figure 1.6 highlight where choices are made in the New Page Setup dialog box.

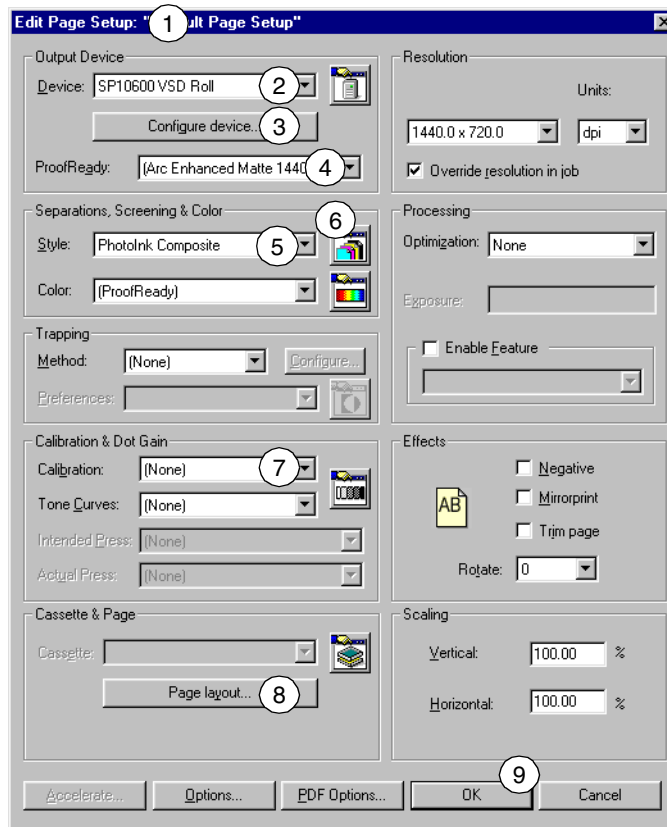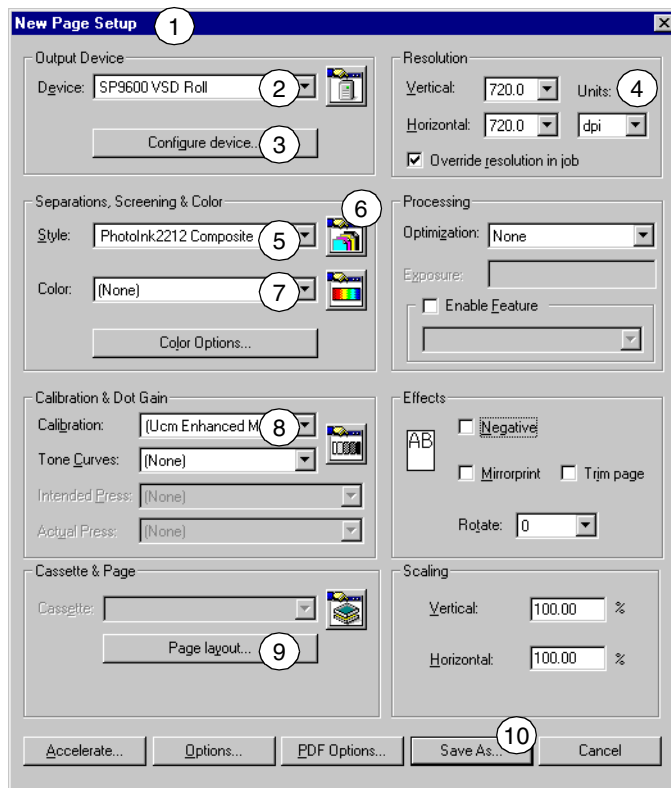**Figure 1.6** Creating a page setup in pre Eclipse Release RIP*s*

① Open the Page Setup Manager and click **New**.

② Choose the device required from the **Device** menu.

Note: If the device you require is not in the **Device** menu, see "Creating device types" on page 12.

③ Click **Configure device** to modify configuration settings as desired. See "Device configuration" on page 28 for details.

If using a supplied calibration profile choose the `Enhanced Microweave` option from the **Quality** menu, because the profiles were created using this setting.

④ Choose the desired resolution from the **Vertical** menu. This sets the **Horizontal** resolution to be the same. For example, if you choose 1440 x 1440, this is set to 1440 x 720 when your file is processed. See page 50 for details.

⑤ Choose a Separations, Screening and Color option from the **Style** menu. There is usually just one option available, which suits the style required by your output device.

⑥ If using a biplane device type, check in the Edit Style dialog box that screening is set to its default value of `HDS Super Fine.`

Otherwise skip to step ⑦.

To open the Edit Style dialog box, click the Separations Manager icon. Click **Edit** in the Separations Manager and check the screening option in the **Dot shape** menu. Click **OK** twice to return to the Page Setup dialog box.

Edit Style for 'PhotoInkBiplane Composite' - PhotoInkBiplane - Composite -> P

Separation	Print ?	Angle	Ink
Photo Cyan	Yes		Normal
Photo Cyan Small	Yes		Normal
Photo Magenta	Yes		Normal
Photo Magenta S...	Yes		Normal
Photo Yellow	Yes		Normal
Photo Yellow Small	Yes		Normal
Photo Black	Yes		Normal
Photo Black Small	Yes		Normal

Separations are generated in list order.

To change order select and drag to new position

Set print to 'Yes' to automatically print 'other colors in job'.

Edit selected row: Photo Cyan `Yes` ▼ `Normal` ▼

Dot shape: `HDS Super F` ▼
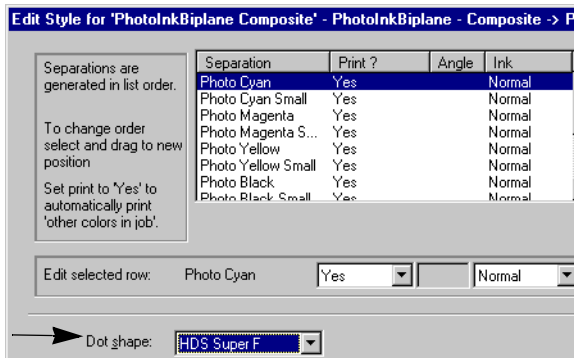
⑦ Choose `(None)` from the **Color** menu.

Note: Selecting a calibration profile or calibration set includes a default color setup. You can choose an option from the **Color** menu if you wish to use a color setup that you have previously created. See "Creating a HIPP or ColorPro color setup" on page 60 for details.

⑧ Choose a profile from the **Calibration** menu that matches the currently selected ink/paper type and resolution (as specified in step ④).

For example, `(Ucm Enhanced Matte 720)` is a profile for Epson Enhanced Matte Paper based on a resolution of 720 x 720 dpi using UltraChrome™ inks. See "ProofReady profiles" on page 19 for a full list of supplied profiles.

For optimum results you can choose a calibration set that has been generated for the actual printer rather than for a reference printer. See "Calibrating the printer" on page 54 for details.

⑨ Click **Page Layout** to specify the positioning of the page, using the margin and centering controls.

Note: If you are using a sheet-fed device, you must refer to details on how to control top and bottom margins provided in the Page Layout section on page 51.

⑩ Click **Save As** and enter a page setup name in the **Save As** text box. Click **Save** in the Save Setup dialog box and then **OK** in the Page Setup Manager.

You can use this page setup when printing to produce color managed output.

Note: When printing on a sheet or roll-fed device the paper source must match the paper source setting on the front of the printer. Otherwise, if a printer is loaded with a roll of paper but the paper source is set to sheet the printer may treat the roll as if it were a single sheet. When printing, the printer then attempts to feed to the end of the roll.

1.6 ProofReady profiles

Instant output color management is provided in the Eclipse Release RIP with the inclusion of ProofReady profiles. Each ProofReady profile has been developed by Harlequin RIP color specialists to produce the most natural and vivid colors possible when used with a particular paper type.

To use a profile, open the Page Setup window and choose an appropriate device from the Device list and profile from the ProofReady list, as shown in Figure 1.7.

Device list

ProofReady profiles
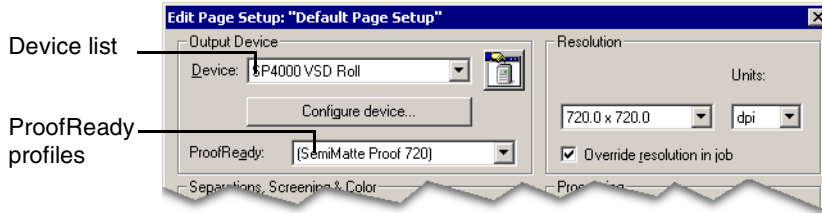
Figure 1.7 Availability of ProofReady profiles in Eclipse Release RIPs

Table 1.1 lists the ProofReady profiles supplied with the Epson VSD plugin and shows the screening method used to create each profile. OEMs wishing to use screens other than HDS SuperFine, HEDS1 or HEDS2, as appropriate, must make their own profiles.

Table 1.1 Epson VSD ProofReady profiles

ProofReady Profile (*Device name*)	Paper (part no.)	Screening
Epson 2200		
`Premium Glossy 720/1440` (*SP2200 VSD*)	Premium Gloss (S041286)	HEDS2
`Premium SemiGloss 720/1440` (*SP2200 VSD*)	Premium Semi-Gloss (S041331)	HEDS2
`MkLk Enhanced Matte 720/1440` (*SP2200 VSD*)	Enhanced Matte (S041341)	HEDS2
Epson 4000		
`Enhanced Matte 360` (*SP4000*)	Epson Enhanced Matte Paper (SO41725)	HDS Super Fine
`Premium Glossy 250g 2880` (*SP4000*)	Epson Premium Glossy Photo Paper 250g (SO41315)	HDS Super Fine
`Enhanced Matte 720/1440` (*SP4000 VSD*)	Epson Enhanced Matte Paper (SO41725)	HEDS2

Table 1.1 Epson VSD ProofReady profiles *(continued)*

ProofReady Profile (*Device name*)	Paper (part no.)	Screening
`Mitsu PRN Newsprint 720` *(SP4000 VSD)*	Mitsubishi Newsprint	HEDS2
`Premium Glossy 250g 720/1440` *(SP4000 VSD)*	Epson Premium Glossy Photo Paper 250g (SO41315)	HEDS2
`Premium Luster 250g 720` *(SP4000 VSD)*	Epson Premium Luster Photo Paper 250g (S041737)	HEDS2
`SemiMatte Proof 720/1440` *(SP4000 VSD)*	Epson Proofing Paper Semi-Matte (SO41724)	HEDS2
`SWOP-cert SemiMatte Proof` *(SP4000 VSD) See "Notes on the profiles" below.*	Epson Proofing Paper Semi-Matte (SO41724)	HEDS2
Epson 5500		
`Archival Matte 720` *(SP5500 VSDbi)*	Epson Archival Matte Paper (SO41339)	HDS Super Fine
`Premium SemiGloss 720` *(SP5500 VSDbi)*	Epson Premium Semigloss Photo Paper (SO41327)	HDS Super Fine
`Pro Glossy 720` *(SP5500 VSDbi)*	Epson Professional Glossy Paper (SO41430)	HDS Super Fine
`Archival Matte 720/1440` *(SP5500 VSD)*	Epson Archival Matte Paper (SO41340)	HEDS2
`Premium SemiGloss 720/1440` *(SP5500 VSD)*	Epson Premium SemiGloss Photo Paper (S041328)	HEDS2
`Pro Glossy 720/1440` *(SP5500 VSD)*	Epson Professional Glossy Paper (SO41457)	HEDS2
Epson 7600		
`Ucm Enhanced Matte 2880` *(SP7600)*	Epson Enhanced Matte Paper (S041595)	HEDS1
`Ucm Premium Glossy 250g 2880` *(SP7600)*	Epson Premium Glossy Photo Paper (250) (S041638)	HDS Super Fine
`Ucm Glossy Photo Wt 2880` *(SP7600)*	Epson Glossy Paper Photo Weight (S041388)	HEDS1

Table 1.1 Epson VSD ProofReady profiles *(continued)*

ProofReady Profile (*Device name*)	Paper (part no.)	Screening
Ucm SemiMatte Proof 2880 *(SP7600)*	Epson SemiMatte Proofing Paper (S041658)	HEDS1
Dye Glossy Paper Hvy 720 *(SP7600 VSD)*	Epson Glossy Hvy Wt (S041291)	HEDS2
Dye Pres Matte 720 *(SP7600 VSD)*	Epson Presentation Matte (S041295)	HEDS2
Dye SemiGloss Hvy 720 *(SP7600 VSD)*	Epson Semi-Gloss Hy Wt (S041292)	HEDS2
Ucm Enhanced Matte 720/1440 *(SP7600 VSD)*	Epson Enhanced Matte Paper (S041595)	HEDS2
Ucm Glossy Photo Wt 720 *(SP7600 VSD)*	Epson Glossy Paper Photo Weight (SO41388)	HEDS2
Ucm Premium Glossy 250g 720/1440 *(SP7600 VSD)*	Epson Premium Glossy Photo Paper (250) (S041638)	HEDS2
Ucm SemiMatte Proof 720/1440 *(SP7600 VSD)*	Epson SemiMatte Proofing Paper (S041658)	HEDS2
Epson 9600		
Ucm Enhanced Matte 2880 *(SP9600)*	Epson Enhanced Matte Paper (S041595)	HEDS1
Ucm Glossy Photo Wt 2880 *(SP9600)*	Epson Glossy Paper Photo Weight S041388	HEDS1
Ucm Premium Glossy 250g 2880 *(SP9600)*	Epson Premium Glossy Photo Paper (250) (S041638)	HDS Super Fine
Ucm SemiMatte Proof 2880 *(SP9600)*	Epson SemiMatte Proofing Paper S041658	HEDS1
Dye Glossy Paper Hvy 720 *(SP9600 VSD)*	Epson Glossy Hvy Wt (S041291)	HEDS2
Dye Pres Matte 720 *(SP9600 VSD)*	Epson Presentation Matte (S041295)	HEDS2
Dye SemiGloss Hvy 720 *(SP9600 VSD)*	Epson Semi-Gloss Hy Wt (S041292)	HEDS2

Table 1.1 Epson VSD ProofReady profiles *(continued)*

ProofReady Profile (*Device name*)	Paper (part no.)	Screening
`Ucm Enhanced Matte 720/1440` (*SP9600 VSD*)	Epson Enhanced Matte Paper (S041595)	HEDS2
`Ucm Glossy Photo Wt 720` (*SP9600 VSD*)	Epson Glossy Paper Photo Weight (S041388)	HEDS2
`Ucm Premium Glossy 250g 720/1440` (*SP9600 VSD*)	Epson Premium Glossy Photo Paper (250) (S041638)	HEDS2
`Ucm SemiMatte Proof 720/1440` (*SP9600 VSD*)	Epson SemiMatte Proofing Paper (S041658)	HEDS2
Epson 10000		
`Arc Enhanced Matte 720/1440` (*SP10000 VSD*)	Epson Enhanced Matte Paper (S041595)	HEDS2
`Arc Prem SemiGloss 720/1440` (*SP10000 VSD*)	Epson Premium SemiGloss Photo Paper (S041393)	HEDS2
`Arc Premium Glossy 720/1440` (*SP10000 VSD*)	Epson Premium Glossy Photo Paper (S041390)	HEDS2
`Dye Glossy Paper Hvy 720/1440` (*SP10000 VSD*)	Epson Glossy Paper Heavy Weight (S041291)	HEDS2
`Dye Pres Matte 720/1440` (*SP10000 VSD*)	Epson Presentation Matte Paper (SO41295)	HEDS2
`Dye SemiGloss Hvy 720/1440` (*SP10000 VSD*)	Epson SemiGloss Paper Heavy Weight (S041292)	HEDS2
`Dye Glossy Photo 360/720/1440` (*SP10000 VSDbi*)	Epson Glossy Photo Paper	HDS Super Fine
`Dye Pres Matte 720` (*SP10000 VSDbi*)	Epson Presentation Matte	HDS Super Fine
`Dye Semigloss 720` (*SP10000 VSDbi*)	Epson Semigloss Photo Paper	HDS Super Fine
Epson 10600		
`Arc Enhanced Matte 720/1440` (*SP10600 VSD*)	Epson Enhanced Matte Paper (S041595)	HEDS2

Table 1.1 Epson VSD ProofReady profiles *(continued)*

ProofReady Profile (*Device name*)	Paper (part no.)	Screening
`Arc Prem SemiGloss 720/1440` *(SP10600 VSD)*	Epson Premium SemiGloss Photo Paper (S041393)	HEDS2
`Arc Premium Glossy 720/1440` *(SP10600 VSD)*	Epson Premium Glossy Photo Paper (S041390)	HEDS2
`Dye Glossy Paper Hvy 720/1440` *(SP10600 VSD)*	Epson Glossy Paper Heavy Weight (S041291)	HEDS2
`Dye Pres Matte 720/1440` *(SP10600 VSD)*	Epson Presentation Matte Paper (SO41295)	HEDS2
`Dye SemiGloss Hvy 720/1440` *(SP10600 VSD)*	Epson SemiGloss Paper Heavy Weight (S041292)	HEDS2
`Ucm Enhanced Matte 720/1440` *(SP10600 VSD)*	Epson Enhanced Matte Paper (S041595)	HEDS2
`Ucm Glossy Photo Wt 720/1440` *(SP10600 VSD)*	Epson Glossy Paper Photo Weight (S041388)	HEDS2
`Ucm SemiMatte Proof 720/1440` *(SP10600 VSD)*	Epson SemiMatte Proofing Paper (S041658)	HEDS2

See "Halftone screen selection" on page 27 for details on screen sets. If you need to use the printer in another configuration, you must obtain your own calibration and color profiles.

1.6.1 Notes on the profiles

The following notes are applicable for the Epson VSD profiles:

- The `SWOP-cert SemiMatte Proof` profile for the Epson 4000 is based upon the SWOP (CGATS TR001) data set, and was made by measuring the IT8 color target over a black background, since this is how the CGATS TR001 data set was prepared. For this reason, proofs printed using this profile should be measured or viewed with the print placed on a black background. (When calibrating the printer for this profile, however, the calibration target should still be measured over white.)

- Some paper types are named differently in different markets. The UK: and US: prefixes in the Paper Type column show where these differences are known.

1.7 Profiles and ink types

Epson VSD printers use a variety of ink types, with some models supporting more than one type. The major types are Photographic Dye, Archival (ColorFast) and UltraChrome. Some UltraChrome printers also support the use of different types or combination of Black inks.

If your printer is one that provides a choice of ink type, the type or combination your printer is using should be selected in the **Ink Type** menu from one of:

Dye ink	Photographic Dye
Archival (pigment) ink	Archival/ColorFast
UltraChrome ink	UltraChrome, using the default or only variation. The default, unless otherwise stated, is Photo Black for single-black devices, Photo Black with Light Black for dual-black devices.
UltraChrome (PhotoK+LightK)	UltraChrome using Photo Black with Light Black
UltraChrome (MatteK+LightK)	UltraChrome using Matte Black with Light Black
UltraChrome (MatteK*2)	UltraChrome using 2 Matte Blacks
UltraChrome (PhotoK)	UltraChrome using Photo Black on its own
UltraChrome (MatteK)	UltraChrome using Matte Black on its own.

The exact list of options is device dependent, see "Device configuration" on page 28 for more information.

ProofReady profiles supplied by Global Graphics use a prefix to the profile name to differentiate, for printers supporting more than one type of ink, the ink type selection which must be used for the profile.

The prefixes for devices supporting more than one major ink type are:

`Arc`	Archival (pigment) ink
`Dye`	Dye ink
`Ucm`	UltraChrome (PhotoK) or UltraChrome (PhotoK+LightK)
`UcmMkLK`	UltraChrome (MatteK+LightK)
`UcmMk`	UltraChrome (MatteK) or UltraChrome (MatteK*2) for dual-black printers.

For example:

```
Arc Enhanced Matte 720
Dye Pres Matte 720
Ucm Prem SemiGloss 720
```

The prefixes for devices only supporting UltraChrome ink (such as the Stylus Photo 2200) are:

`MkLk`	UltraChrome (MatteK+LightK)
`Mk`	UltraChrome (MatteK) or UltraChrome (MatteK*2) for dual-black printers

For example:

```
Premium Glossy 720
MkLk Enhanced Matte 720
```

Most professional series printers will reject a job (see "`Command error...`" error message, as documented in "Printer-specific messages and symptoms" on page 62) if the ink type used when the job was processed by the RIP does not match the inks loaded in the printer. The plugin also tries to query the ink type where possible, in order to avoid sending a job of the wrong type to the printer (see "`The selected ink type is incorrect...`" "Printer-specific messages and symptoms" on page 62).

Warning: The Stylus Photo 2200 however does not inform the plugin of the ink combination in use and does not reject jobs with the wrong ink type.

1.7.1 Halftone screen selection

The Epson 5500 and 10000/10600 print using six inks, for which the RIP supplies density values by conversion from CMYK. As well as the conventional Cyan, Magenta, Yellow, and Black inks, there are Light Cyan and Light Magenta inks. Similarly, the Epson Stylus Pro 7600/9600 and the Epson Stylus Pro 4000 print using 7 inks, which include Light Cyan, Light Magenta and Light Black. The light inks produce improved highlight rendition.

The RIP supplies a set of screens specially designed for use with six or seven inks. Each of these halftone screens ensures that the total ink coverage is limited to a maximum of 400%. These halftone screens are:

HEDS2   This is one of the in-RIP EDS screens used to produce the supplied profiles for 2-bit device types. It produces the highest quality output for inkjet printers. To use this screen, the HEDS2 screening plugin must be installed and enabled, as described in "Installation procedure" on page 4.

HEDS1   This is one of the in-RIP EDS screens used to produce the supplied profiles for 1-bit device types. It produces the highest quality output for inkjet printers. To use this screen, the HEDS1 screening plugin must be installed and enabled, as described in "Installation procedure" on page 4.

HDS Super Fine
                This is one of the screens used to produce the supplied profiles for biplane device types. If using a supplied profile based on this screen, ensure that this option is selected from the Edit Style dialog box accessed from the Separations Manager. This screen is only available for use with biplane or 1-bit device types.

HDS Fine	This is an alternative to HDS Super Fine, producing a coarser screen than HDS Super Fine. This screen is only available for use with biplane or 1-bit device types.

HDS Medium
HDS Coarse
HDS Super Coarse

The Medium, Coarse, and Super Coarse variants of HDS are only recommended as special effects screens. These screens are only available for use with biplane or 1-bit device types.

Chain   See "Using Chain screening" on page 79 for details of recommended settings when using Chain screening. This screen is only available for use with biplane or 1-bit device types.

Refer to the *Harlequin RIP OEM Manual* for further details of screens supplied with the RIP.

1.8 Device configuration

Device options are accessible from the Configuration Device dialog box, shown in Figure 1.8. To access this window, click **Configure device** in a page setup screen.

Figure 1.8 Epson VSD Configuration dialog box

The options in Configure Device are as follows:

Output method

> This option should be set to match your connection interface, or to `File` if outputting to disk. The options that appear in the list depend upon the operating system you are using and the port types it supports.

> If you choose `Network`, specify the IP address and port number in the Network Output settings. If you choose `File`, in the File Output settings specify an output location and a file naming template.

> For Windows platforms the standard options are: `Network`, `File`, and `LPT1`.

> Any local Epson printers containing the word `Epson` (not case-sensitive) as part of their name, will also appear in this menu, with the `SPL:` prefix. Choosing this option will use the Windows printer spooler and the Epson printer driver to send the plugin data to the printer. This output method can be used to drive the printer via mechanisms not supported directly by the plugin.

Note that on Windows ME/98, the names of network printers may also appear. This is because Windows ME/98 drive network printers via the local print provider. We recommend that you disable print spooling, otherwise the Epson driver will copy the output to file first, which is unnecessary and can require gigabytes of disk space. The mechanism for disabling is dependent on the Windows driver. If necessary, refer to your systems administrator for further assistance.

On Mac OS 9.*x* the standard options are: `Network`, `File`, `Port: Printer` and `Port: Modem`, and on Mac OS X they are: `Network` and `File`.

On all platforms you will see an extra entry, prefixed with `USB:` if you are driving an output device with a USB port. When using a USB port on Mac 9.*x*, the USB option may not appear in this list if you connect to the device after starting the RIP. If this happens, re-start the RIP. The USB option should become available. If you have two or more Epson printers connected to a Mac OS X machine via USB, the plugin differentiates between them in the **Output Method** list by adding a numbered prefix to the printer description, for example `USB: #2 Epson Stylus Pro 1000`.

File Output: Change

The text box alongside this button shows the location where the plugin will produce the output file.

Note to OEMs: The file produced is not directly usable on Mac OS 9.x computers. If you transfer the file to a Windows platform, you can then use Windows printer services.

The initial folder is the `SW` folder, which is a subfolder of the RIP application folder. Click the **Change** button to display the Select Folder dialog box where you can navigate to and select any folder visible to the computer running the RIP. Alternatively, on Windows only, you can edit the text if you know the exact location of an existing folder.

Note: You can send files to a printer using Windows print spooling by installing Windows printer drivers on a PC print server, and by entering the name of the *print server* in this text box. See "Sending files to a printer using Windows printer drivers" on page 82 for full details.

File Output: File template

The text box alongside this button shows the file name template used to name an output file. (This file is suitable for sending directly to the printer.)

The default file name template is `<dos>out<5unique><dot>epf`. This template produces a file name that is cross platform (8.3 file name) and suitable for multi-page jobs. It produces file names of the format `out00001.epf`, `out00002.epf` and so on. See "Output file naming" on page 37 for details on creating a file name template.

Note: You can send files to a printer using Windows print spooling by installing Windows printer drivers on a PC print server, and by entering the name of the *printer* in this text box. See "Sending files to a printer using Windows printer drivers" on page 82 for full details.

Network Output: IP address

This text box shows the network address of the print server. This address is a configurable property of a JetDirect unit or similar device. Enter the network address of the print server that you are using. If your network supports the use of names, you can enter a name and this will be resolved to the IP address.

Network Output: Port Number

The text box alongside this button shows the number of the port you wish to use. If you have installed a 10/100 Base-T type B Ethernet card the **Port Number** should be set to `515`, unless you are using an Epson 10/100 Base TX Internal Print Server 2 interface card (C12C823914), or later, in which case you can set it to `9100`, for bidirectional communication.

If sending output to a single printer using a JetDirect unit the **Port Number** must be set to `9100`.

Some print servers can drive several printers simultaneously and the different physical connections or ports have their own numbers (which may vary with the type of server). For example, on a JetDirect unit with three output ports, the physical ports named 1, 2, and 3 have port numbers `9100`, `9101`, and `9102` respectively.

The RIP supports the use of another printer connected to the same print server. For example, two computers running the RIP and driving the same print server can address any compatible printer connected to that server.

Inks and Media: Media Type

Choose the media type that matches the media installed in your printer. Media for use with Archival™ inks appears with a **(Arc)** prefix. Media for use with Photographic Dye™ inks appears with a **(Dye)** prefix. Media for use with UltraChrome™ inks appears with a **(Ucm)** prefix.

You must choose the correct media type because this determines which inking regimes and media optimizations are used. For example, choosing the correct media type ensures the correct adjustment for media movement. Although, when using the Epson Stylus Pro 10600/9600/7600/4000, you can "fine tune" the adjustment for media movement using the **Paper Feed Adjustment Offset** option, described below.

Note: The **Media Type** and **Ink Type** settings required by supplied profiles are known to the plugin and these settings override any settings you may have changed. This is to ensure correct color management.

Note to OEMs: For each of the supplied profiles located in the relevant device folder within **SW\Devices\epsonvsd\Profiles**, an extra file of exactly the same name has been added to the **ProfileHooks** folder (also within the **epsonvsd** folder), which ensures that the ink and media types are forced to be those required by the profile. We encourage you to do the same when you create your own profiles.

This means for example, that if a user selects a Photographic Dye™ ink profile when outputting to an UltraChrome device, the job will fail. In this case, either the plugin detects that the wrong ink is in the printer, or

the printer generates the "`Command error...`" error message, as documented in "Printer-specific messages and symptoms" on page 62.

In the absence of a hook for a profile, if the ink or media type are not those required by the profile, the results will be less color accurate.

Inks and Media: Ink Type

Choose the ink type installed in your device. You must choose the correct ink type, otherwise an error message will be generated and you will not be able to print (except on the Stylus Photo 2200, which is unable to recognize when an incorrect ink type is selected). When using the Epson Stylus Pro 5500, the `Archival (pigment) ink` option is automatically selected and cannot be changed because this printer only supports pigment-based ink sets.

The options for the Epson Stylus Pro 10600 include `UltraChrome (PhotoK)` and `UltraChrome (MatteK)`, which correspond to the two black ink modes available when using an UltraChrome™ ink set with this device: *Photo Black mode* (optimized for photographic and ink jet coated media types) and *Matte Black mode* (optimized for matte or plain media).

The options for the Epson Stylus Pro 7600/9600 include `UltraChrome (PhotoK+LightK)`, `UltraChrome (MatteK+LightK)`, and `UltraChrome (MatteK*2)`, which correspond to the three black ink modes available when using an UltraChrome™ ink set with this device: *Photo Black mode* (optimized for photographic and ink jet coated media types); *Matte Black mode* (optimized for matte or plain media, where quality is favored over print speed); and *Dual Matte Black mode* (optimized for matte or plain media, where print speed is favored over quality).

The **Media Type** and **Ink Type** settings required by supplied profiles are known to the plugin and these settings override any settings you may have changed. This is to ensure correct color management.

For example, if you change the **Ink Type** from `UltraChrome` to `Dye`, and use a supplied profile for an UltraChrome device, the **Ink Type** will be

changed back to `UltraChrome` by the plugin. To check which settings are used when outputting a job, you can open the Configure Device dialog box from within the Output Controller.

Paper Feed Adjustment Offset

This option is currently only available when using the Stylus Pro 10600/9600/7600/4000 (firmware feature).

Enter a value in the range between -70 and +70 to control the rate of feed of the paper for your particular printer. The default value is `0`. Positive values increase the rate of feed to reduce dark banding. Negative values decrease the rate of feed to reduce white banding.

Quality

The options that appear in this menu are methods of driving the printer, which offer combinations of speed and image quality which may depend on the printer's capabilities.

If using supplied calibration sets and profiles it is recommended that you use the `Enhanced Microweave` option, otherwise choose according to the following criteria:

Choose `Enhanced Microweave` when you need optimum quality and are prepared to wait longer for the printed image.

Choose `Faster Microweave` if you want fast output and color quality is not a high priority. For example, you should use this mode when producing positioning proofs.

Choose `Standard Microweave` if you wish to compromise between speed and quality of output.

Choose `Printer Microweave` if you wish to send raw data to the printer and use the printer's own internal microweaving. This requires potentially less data to be sent to the printer, which may reduce print times, but may also result in more banding than the `Standard Microweave` or `Enhanced Microweave` options.

Compression mode

The options that appear in this menu are methods of coding the data sent to the printer.

`None` sends the data uncompressed, so the data size is always a predictable value though sometimes larger than it need be.

`Run Length` performs a lossless compression that enables the exact data to be recreated. For many images, using `Run Length` will reduce the size of the data and the time taken to transmit it. For some very complex pages containing large areas of fine detail, it may take longer to send a page coded with `Run Length` than to send the same page coded with `None`.

Paper Size

This menu appears in versions of the RIP prior to the Eclipse Release. To specify your paper size in the Eclipse Release or later of the Harlequin RIP, you must use the controls in the Page Layout dialog box, as described on page 51.

The options that appear in this menu are the sizes of paper supported by the plugin and the printer, as well as the option to create a custom paper size. There is a small unimageable margin around the edge of all media, which varies according to the printer model and media size. Refer to your printer documentation for details.

The standard paper sizes are also available as transverse paper sizes, for example `A4 Transverse`. The dimensions of these paper sizes are reversed, which means that you must choose a transverse paper size if you have installed the paper in your printer in a landscape orientation. Landscape is the long edge of the paper leading into the printer and portrait is the short edge of the paper leading into the printer.

You can create a custom paper size by selecting the `Page Layout media size` option from this menu and specifying the dimensions of the paper size in the Page Layout dialog box. To open this dialog box, click **Page layout** in the Cassette & Page section of the Page Setup dialog box. Enter dimensions for the paper in the **Media Width (MW)** and **Media Length (ML)** text boxes. If using a roll device, the **Media Length (ML)** text box is grayed out. Note that clipping may occur if you change the paper size in a page setup that used a custom paper size. See page 65 for full details.

You can control the positioning of the imaged job on the media by using the controls in the Page Layout dialog box. See page 51 for details.

Note: You must also select the same paper size using the switches on the paper tray of the printer. If you fail to make consistent settings, the output may appear in an unexpected position on the page and be clipped.

Paper bin

The options in the **Paper bin selection** menu specify the paper source and are only available when using the Epson Stylus Pro 5500 and the Epson Stylus Pro 4000.

- `Automatic` automatically selects the paper bin which contains the paper size and type specified in the Device Configuration dialog box. If the paper bins do not contain the specified paper size then an appropriate alternative is selected.

  Note: You must also ensure that the switches on the front of the printer for the paper size and type are set correctly, when choosing the `Automatic` option.

- `Default paper bin` selects the default paper bin, regardless of the size of paper installed in it.

- `Paper bin 1/Paper bin 2` specifies which paper bin the printer should use.

- `Manual Feed` sets the printer to expect paper to be manually fed.

Cut paper at end of each page

If using a roll-fed device you can select this check box to set the printer to cut paper at the end of each page. You must also ensure that the `Roll Auto Cut` option is selected from the Printer Setting menu on the control panel of your printer. If you select **Roll Cutter Off** in the control panel of your printer, this plugin option is overridden.

Bidirectional printing

Select this check box to use bidirectional printing, which will decrease the time taken to print each page but may also reduce the quality.

Post Processing: Enable

Select this check box to enable a post-processing command, as entered in the **Command** text field. Leave it unselected to disable post-processing.

Post Processing: Create window

Select this check box (selected by default) to display a command prompt window: for example, to display any messages produced by the post-processing command. The command window closes at the end of the command so, to read any messages, you may need a timed delay before the command finishes. (A wait for a key-press may be useful for testing but becomes unworkable with many output files.)

On Mac OS X platforms, the window may not automatically close when the post-processing command has finished. To change this behavior, choose **Terminal > Window Settings > shell** and then select an option.

Post Processing: Command

You can enter commands in this field to perform actions once the page buffer has been sent to the printer or once the output file has been created. For example, you may wish to change the format of the output file or generate a report. For full details, see "Post processing" on page 45.

Note: The plugin does not support post processing on Mac OS 9.x computers.

1.8.1 Output file naming

Using text and tags you can automatically generate an output file name from the job name, job details such as colorant information and resolution, or date and time information. The tags are entered in the **File Template** field in the Epson Configuration dialog box, and a complete list of supported tabs can be found in Table 1.2, page 38.

Most tags are content tags, representing variables such as the date and time a job is processed; the other tags allow you to reject names that would be illegal in a specified operating system. The maximum length of variables can be specified by preceding the tag name with an integer. For example, `<5jobname>` truncates the job name to a maximum of five characters. Tags that produce

numeric values are truncated from left to right, whereas tags that produce alphanumeric strings (strings containing the characters a-z, A-Z, and 0-9) are truncated from right to left. See "Examples of tag usage" on page 40 for further details.

Fixed text can be part of the file name stem or extension. For example, *stem_*`<3unique><sepname><dot>epf` would generate a file name of the form: *stem_*`000Cyan.epf`, in which *stem_* can be any identifying text.

Try to use a file name extension that does not clash with any established convention. The extension `epf` is a suggestion only and is formed from the initial letters of *Epson Printer File*.

Note: This file naming scheme does not provide useful file names derived from job names that contain double-byte characters.

1.8.2 Content generating tags

The following tags are available and can be used in any order:

Tag	Description
`<ascii>`	This limits the character set of the file name (from the point of the tag onwards) to ascii characters in the range 32 (0x20) to 126 (0x7E). Charactors outside this range are discarded. If the user wishes to substitute invalid characters rather than discarding them, prefix the ascii tag with the substitution character value in decimal.
`<colorant>`	The color space of the device, such as **PhotoInkBiplane**
`<colorname>`	The name of the separation, such as `Cyan`.
`<date>`	The date when the job is processed, in the format `YYYYMMDD`, unless a truncated form is specified.
`<dot>`	Separates the stem of the file name from the file extension, and appears as a period character (`.`) in the file name. For example, *stem*`<dot>`*ext* appears as `stem.ext`. The use of the `<dot>` tag enables the verification of the stem and extension lengths.
`<job#>`	The job number allocated by the RIP. Automatic numbering means that successive jobs have incremented job numbers: 000, 001, 002, 003, and so on.

Table 1.2 Output file name tags

Tag	Description
`<jobname>`	The page buffer name without the page number prefix and without characters illegal to the operating system. White space characters are used, if present in the job name.
`<jobname1>`	The page buffer name without the page number prefix, and using only alphanumeric characters (a-z, A-Z, 0-9). White space characters are *not* used.
`<jobonly>`	This gives the job name without the separation name in brackets, For example, where <jobname> would give `myjob(PANTONE Reflex Blue CVC)`, <jobonly> will give `myjob`.
`<page#>`	The page number (allocated by the RIP), within the current job. For example: 002.
`<prefix>`	The page number prefix from the page buffer name, such as `1.`, `2.`, and so on.
`<prefixonly>`	You can use this tag to include the characters from the prefix before the full stop in the job name (that is, the prefix, not including the dot and space characters).
`<time>`	The time when the job is processed, in the 24-hour format `HHMMSS`, unless a truncated form is specified.
`<unique>`	A unique sequence number used to make file names unique when outputting files to a directory.
`<xres>`	The horizontal resolution of the page, as specified in the page setup.
`<yres>`	The vertical resolution of the page, as specified in the page setup.

Table 1.2 Output file name tags

1.8.3 Checking tags

The plugin always checks the legality of an automatically generated file name against the requirements of the operating system on which the RIP and the plugin are running.

To enable portability of files from one operating system to another, you can also use tags to specify the operating system for which generated file names must be suitable. The use of these tags changes the rules by which a file name is deemed valid. The tags do not modify the file names generated, but cause error messages if the file name is invalid. See "Messages for file name templates" on page 73 for details.

For example, you can create the template `<dos>Averylongfilename.epf`, but an error is generated. This error occurs because DOS file names require the 8.3 format for stem and extension, which this template fails to meet by having 17 characters in its stem. Table 1.3 lists the operating system tags.

Tag	Description
`<dos>`	Verifies that the file name is a legal file name for the MS-DOS operating system.
`<mac>`	Verifies that the file name is a legal file name for the Mac OS 9.x operating system.
`<macosx>`	Verifies that the file name is a legal file name for the Mac OS X operating system.
`<unix>`	Verifies that the file name is a legal file name for the UNIX operating system.
`<win32>`	Verifies that the file name is a legal file name for Windows operating systems: Windows 95, Windows 98, Windows NT, or Windows 2000.

Table 1.3 Operating system tags

1.8.4 Examples of tag usage

The following examples demonstrate the format of strings produced by individual tags. Some examples also show how the tags may be used in combination to form a template. The examples are based on these job details:

Page buffer name: 1. Uncalibrated Target: Epson Stylus Roll-Fed 4-Color Target

Date: 12th of April, 2001

Note: When creating multiple copies of a file, the same page buffer provides tag information. If a template contains dynamic tags (such as `<time>`, where the value changes each time that a page buffer file is output), then multiple copies of the file are created. If the template contains just static tags (such as `<jobname>`, where the job name remains constant), then a single output file is created because previous files are overwritten.

`<colorant>`

This tag includes the color space of the device in the file name string.

For example, the template `<colorant><dot>epf` produces a file name of the form `PhotoInk.epf` for a device using a PhotoInk color space.

`<colorname>`

The tag `<colorname>` can be used to include the name of the separation in a file name, for example: `Cyan`. You can include just the first letter of the separation by using the tag `<1colorname>`, which truncates the separation name to its first letter. If a composite style is used this is indicated by the string `Composite`. If a monochrome style is used this is indicated by the string `Gray`.

`<date>`

The template `<date><dot>epf` produces the file name `20010412.epf`. You can remove the year information by using the tag `<4date>` to produce the file name `0412.epf`.

`<dos>`

The use of this tag verifies that the file name is suitable for use in a DOS operating system. Illegal characters such as a colon, and white space characters are removed.

For example, the template `<dos><jobname><dot>epf`, would generate an illegal file name because the job name is greater than the eight characters allowed in DOS operating systems. Truncation can be forced by using the template `<dos><8jobname><dot>epf`, which produces the file name `Uncalibr.epf`.

`<dot>`

This tag separates the file name stem from the file name extension and enables the verification of their lengths. It is particularly necessary when creating file names compatible with DOS and Windows, otherwise the extension may be considered as part of the file name.

For example, the template `<dos><8jobname>.epf` would cause an error because the dot is removed as an illegal character and `epf` is then considered part of the file name stem.

`<job#>`

> You can use this tag to include the job number in the file name string. The default length of the number is three digits, so the first file name created with this tag would be 000, unless a different length is specified. You can specify the length of the job number by preceding the `<job#>` tag with an integer. For example, `<5job#>` creates job numbers five digits long.
>
> In multi-page jobs use the `<page#>` tag as well as the `<job#>` tag to differentiate between the different pages of a job.

`<jobname>`

> This tag ensures that only legal operating system characters are used in the job name.
>
> For example, in the RIP running under any Microsoft Windows operating system, the template `<jobname><dot>epf` can produce the file name `Uncalibrated Target Epson Stylus Roll-Fed 4-Color Target.epf`. The colon character (`:`) is removed from the file name, because this is not a valid file name character for any version of Microsoft Windows.

`<jobname1>`

> This tag ensures that only alphanumeric characters are used in the job name.
>
> For example, in the RIP running under a Windows operating system, the template `<jobname1><dot>epf` can produce the file name `UncalibratedTargetEpsonStylusRollFed4ColorTarget.epf`. The colon, hyphens and white space characters are removed from the file name, because they are not alphanumeric characters.

`<mac>`

> The use of this tag verifies that the file name is suitable for use in a Mac OS 9.x operating system. Illegal characters such as an asterisk, colon, and quotation marks are removed. The maximum length of a file name is thirty-one characters (including the file extension).

For example, using the template `<mac><28jobname><dot>epf` produces the file name `Uncalibrated Target Epson S.epf`, in which the colon has been removed.

`<macosx>`

The use of this tag verifies that the file name is suitable for use in a Mac OS X operating system. Illegal characters such as a colon, or double-quotation marks are removed.

For example, the template `<macosx><jobname><dot>epf` produces the file name `Uncalibrated Target Epson Stylus Sheet-Fed 4-Color Target.epf`, in which the colon has been removed.

`<page#>`

You can use this tag to include the page number in the file name string.

For example, the template `<page#><dot>epf` produces a file name of the form `001.epf`. It is advisable to use this tag with the job number tag to differentiate between the same pages of different jobs.

`<prefix>`

You can use this tag to include the page number prefix from the page buffer name in the file name string.

For example, based on the page buffer name above, this tag produces the string `1.`

`<time>`

You can use this tag to include the time a file is processed in the file name string.

For example, if printing to file at 15:39:36 (approximately 3:39 pm) this tag produces the string `153936`.

`<unique>`

You can use this tag to generate a unique sequence number for the page. The default length of the number generated is four digits long, so the

first number would be `0000`. The length of the number can be specified, as detailed in the example for the tag `<job#>`.

When restarting the RIP, the unique numbering will attempt to restart at its initial value, for example: `0000`. However, if a file exists with that number, the next available unique number is used.

`<unix>`

The use of this tag verifies that the file name is suitable for use in the UNIX operating system. Illegal characters such as an asterisk, colon, and quotation marks are removed. The `<dot>` tag cannot be used with this tag because file names in UNIX are composed of a single string and are not considered to have separate file extensions.

For example, using the template `<unix><255jobname>.epf` produces the file name `UncalibratedTargetEpsonStylusRoll-Fed4-ColorTarget.epf`, in which the colon and white space characters have been removed.

`<win32>`

The use of this tag verifies that the file name is suitable for use in a Windows operating system. Illegal characters such as an asterisk, colon, or quotation marks are removed.

For example, the template `<win32><jobname><dot>epf` produces the file name `Uncalibrated Target Epson Stylus Sheet-Fed 4-Color Target.epf`, in which the colon has been removed.

`<xres>`

You can use this tag to include the horizontal resolution of the page in the file name string.

For example, you can differentiate between pages with a resolution of 1440 x 720 dpi and 720 x 720 dpi by using this tag. This tag produces a string such as `1440` or `720`, depending on the horizontal resolution.

`<yres>`

You can use this tag to include the vertical resolution of the page in the file name string. For example, on a page with the resolution 1440 x 720, this tag produces the string `0720`.

1.8.5 Post processing

The Configuration dialog box has a **Post Processing: Command** text box in which you can enter commands and their options, in the same way as a command line. These commands are carried out after the page buffer has been sent to the printer or once the output file has been created. The commands available depend on the platform on which you are running the RIP.

Note: You cannot perform post processing if you are using a Mac OS 9.x computer.

The command can be a simple batch file or a complex application, provided that you give the command all necessary options and information; a command needing operator intervention is likely to cause problems. You can specify options understood by the application, and data such as the path of the relevant input or output files.

You can use post processing commands to convert the file to a different format or to send somebody an e-mail notifying them that a job has been processed. There are several other possibilities, such as extracting information for use in reports, limited only by your ability to obtain or create a suitable application and to supply information to it.

If the string you enter into the **Post Processing: Command** text box refers to a post processing application then this application must be available on the computer running the RIP. The string should normally include the file extension and the full path name of the application file. However, you can type just the file name if the application file has the extension **.EXE** and is in one of the directories specified by the **PATH** variable.

Your string can contain substitution codes, which are expanded by the RIP. See "Post processing substitution codes" for details.

1.8.5.1 Post processing substitution codes

When using the post processing feature of the Epson VSD plugin, the RIP recognizes the substitution codes in the following list. You can insert an integer between the percent character and the letter code, to restrict the maximum number of characters used in the result string. For example, `%6j` represents the first six characters of the job name.

Post processing substitution codes	Description
%c	The current separation color, represented by a string with a default length of one character. Typical separation names are `Cyan`, `Magenta`, `Yellow` and `Black`. Examples for the default length are: `C`, `Y`, `M`, and `B`.
%d	The current date in the format YYYYMMDD, with a default string length of 8. For example, 26 October 2000 becomes: 20001026.
%f	The output file name, as created by the template specified in the **File Output: File Template** text box in the Configuration dialog box. For example: `out00001.epf`.
%g	The current page buffer name as shown in the Output Controller/Monitor, after removal of the numeric prefix and non-alphanumeric characters. For example: the page buffer name `1. Apple.ps` becomes `Appleps`.
%j	The current page buffer name as shown in the Output Controller/Monitor. For example: `1. Apple.ps`.
%n	The current job number, an integer that the RIP increments each time it processes a new job. For example: `15`.
%o	The full output directory path specified in the **File Output: Change...** text box. For example: `C:\SWNT\SW\Output\`.
%p	The current page number within the job. For example: `4`.
%r	The job resolution in dots per inch. For example: `300`.
%s	The current page buffer name as shown in the Output Controller/Monitor, after removal of the numeric prefix, any bracketed text and any text that appears before a colon (:), semi-colon (;), a commercial at symbol (@), and a hyphen (-). For example: the page buffer name `1. Apple-test(new).ps` becomes `test.ps`.

Table 1.4 Post processing substitution codes

Post processing substitution codes	Description
%t	The current time in the format HHMMSS, using the 24 hour clock. The default length is 6. For example, a time just after 7:30 pm would be shown: `193211`.
%x	The current file name suffix. For example: `epf`.
%z	The current file name stem. For example: `out00001`.

Table 1.4 Post processing substitution codes

1.8.5.2 Checking the command string

The RIP reports each command and the working directory in the main RIP monitor window, in the following form. Italics show which text can vary with different jobs and page setups.

```
Running post-job command "C:\test\logfile.bat out00002.epf
112442" in directory C:\SWNT\SW\Output
```

The above example refers to a batch file (`logfile.bat`) which uses a program to send an e-mail confirming that a job has been processed. The e-mail contains the output file name (`out00002.epf`) and the time it was processed (approximately 11:24). These details were provided by using the substitution codes `%f` and `%t` in the post processing text box. The working directory is the output file folder specified in the **File Output: Change...** text box. If no output file folder is specified then the working directory is the '`..\SW\`' directory, which is one level below the directory containing the RIP executable.

For a more thorough test of how commands behave when used at the command prompt of the operating system, try creating a batch (`.BAT`) file with these contents and using the name of the batch file as the application in your command string.

```
echo %1 %2 %3 %4 %5 %6 %7 %9
pause
```

Note: If you have problems with a command, test it outside the RIP by opening a command window and running the command manually. If you think that you have used any substitution code from which the RIP might generate

an element containing characters with a special meaning to your operating system, try surrounding that code with double quotes. For example, use `"%f"` in the post processing text box rather than just `%f`.

If there are no special characters involved, look at the number of substitution codes that you are using and the length of the command string both before and after expansion of the substitution codes. The limit on the length of the expanded command string varies with the Microsoft Windows environment but you should have no problems with up to 125 characters in the string after expansion.

1.9 Routine plugin use

Details on general usage of the plugin are provided under the following headings:

- "Page Setup settings" on page 48- explains the choices in the page setup dialog box.

- "Roaming page buffers" on page 53 - offers details on previewing output to PhotoInk devices.

1.9.1 Page Setup settings

To send output to a device or file you must create a page setup. This involves two main steps. Firstly, you must choose your device from the **Device** menu in the Page Setup dialog box and configure the device as described in "Device configuration" on page 28. Secondly, you must set the desired page setup options to complete a page setup.

The page setup controls that you generally need to consider are described below. See the *Harlequin RIP OEM Manual* for further details.

Device

The **Device** menu offers a list of supported device types.

If the device type that you require is not available in this menu, see "Creating device types" on page 12.

ProofReady

This menu appears in Eclipse Release or later RIPs. You can choose a ProofReady profile from this menu which uses a color setup and calibration profile for a particular paper, ink and resolution combination. See "ProofReady profiles" on page 19 for further details.

When you select a profile from this menu, the correct resolution is automatically set and should not be changed. A default `(ProofReady)` color setup is also used. If you wish to use a color setup that you have created, choose `(None)` from this menu. See "Creating a HIPP or ColorPro color setup" on page 60 for details on how to create your own color setup.

Style

By default, there is only one option in the **Style** menu in the **Separations, Screening & Color** section of the Page Setup dialog box: `PhotoInkBiplane Composite.`

Make the choice offered; it suits the format required by the printer.

You can create other styles using the Separations Manager. Refer to the *Harlequin RIP OEM Manual* for details. See "Using Chain screening" on page 79 if you have problems with Chain screening.

Color

In versions of the Harlequin RIP prior to the Eclipse Release, the selection of a supplied calibration profile, or a calibration set created on the basis of a supplied profile, includes a default color setup. Set **Color** to `(None)` if you wish to use the default color setup. You can use the supplied color profiles to create your own color setup, as described in "Creating a HIPP or ColorPro color setup" on page 60. "Creating and installing ICC profiles" on page 58 describes the production and installation of your own profiles, which you can then use to create a color setup.

In the Eclipse Release or later RIPs, the selection of a profile from the **ProofReady** menu includes a default `(ProofReady)` color setup. You can use the supplied color profiles to create your own color setup, as described in "Creating a HIPP or ColorPro color setup" on page 60. To use your own color setup, you must choose `(None)` from the **ProofReady** menu.

You can also create a **New 'ProofReady' Setup** if you wish to use a **ProofReady** profile but modify some of the default settings, such as those for overprinting. To create a **New 'ProofReady' Setup** you must access the Color Setup Manager with a **ProofReady** profile selected. The options are the same as those for a **New 'No Color Management' Setup**, as described in the *Harlequin RIP OEM Manual*.

Note to OEMs: The default color setup for ProofReady profiles uses `SWOP (CGATS TR001)` as the CMYK input profile and `Trinitron` as the RGB input profile. This can be changed using PostScript. Contact support for more details.

Resolution

Choose resolutions that satisfy your desire for speed of output (lower resolution) or quality (higher resolution).

In the Eclipse Release the supported resolutions can be selected from a single list, whereas in pre Eclipse Release RIPs the resolutions are selected from **Vertical** and **Horizontal** lists that have been designed to prevent you from selecting an invalid combination. For example, you can choose 360 x 360, but not 360 x 720. A message confirming this change is displayed in the RIP monitor.

Similarly, if you wish to output at 2880 x 720 dpi (Epson Stylus Pro 5500) or 2880 x 1440 dpi (Epson Stylus Pro 7600/9600/4000), you must choose 2880 x 2880 and the resolution is changed during processing.

Note: If you use profile based on a specific resolution, ensure the resolution matches.

Calibration

You can select a calibration profile or calibration set from the **Calibration** list in the **Calibration & Dot Gain** section.

In versions of the RIP prior to the Eclipse Release, the selection of a calibration profile or calibration set includes a default color setup, unless you choose an alternative from the **Color** menu. Note that if you choose an alternative color setup, ensure that it is suitable for the paper type, ink and resolution.

In the Eclipse Release and later RIPs, the selection of a profile from the **ProofReady** menu includes a default calibration profile. Set **Calibration** to `(None)` if you wish to use the default calibration profile. For optimum results you can choose a calibration set that has been generated for the actual printer rather than for a reference printer. See "Calibrating the printer" on page 54 for details.

Page Layout

The margins and centering options control where the imaged job appears on the media. There is a small unimageable margin around the edge of the media, which varies according to the printer model. Refer to your printer documentation for details. The positioning of the job is also different for roll and sheet-fed devices.

Roll-fed　　　　　When the device is roll-fed, the page defined by the job is located at the top-left of the sheet, unless you set a non-zero **Left Margin** or select the **Center page on Media Width** check box. You can also set both the **Top Margin (TM)** and the **Bottom Margin (BM)**. If you increase the **Bottom Margin (BM)** on a roll-fed device this adds space to the bottom of the page.

Sheet-fed　　　　When the device is sheet-fed, the origin of the page defined by the job is located at the bottom-left of the sheet. However, in the Page Layout dialog box of some versions of the RIP, only the **Top Margin (TM)** is editable with a default value of `0.00` inches. If these default settings were applied the job would be located at the top-left of the sheet. To prevent this, the **Top Margin (TM)** is applied as the **Bottom Margin (BM)**. If your version of the RIP needs to swap these values a message confirming this is displayed in the RIP monitor window.

If you increase the **Bottom Margin (BM)** on a sheet-fed device, space cannot be added to the bottom of the page. This means that the space available on the sheet is reduced.

The **Page size** represents the frame within which text and images are printed. Whereas **Paper Size** (specified in the Epson Configuration dialog box) is the size of the medium printed on. In order to print unclipped pages the page size must not exceed the paper size. Because the **Paper Size** is specified in the Epson Configuration dialog box, you do not need to specify the **Media Width** or **Media Length**, unless creating a custom paper size.

Note: The **Page size** that you can choose here is only important if you print a job that does not specify its own page size. Such jobs are rare, but include EPS files and the job created by the menu option **Fonts > Proof Fonts**.

The use of the media controls depends on the RIP version that you are using:

Pre Eclipse Release RIPs:

> The **Page size** represents the frame within which text and images are printed. Whereas **Paper Size** (specified in the Epson Configuration dialog box) is the size of the medium printed on. In order to print unclipped pages the page size must not exceed the paper size. Because the **Paper Size** is specified in the Epson Configuration dialog box, you do not need to specify the **Media Width** or **Media Length**, unless creating a custom paper size.
>
> **Note:** The **Page size** that you can choose here is only important if you print a job that does not specify its own page size. Such jobs are rare, but include EPS files and the job created by the menu option **Fonts > Proof Fonts**.

Eclipse Release or later RIPs:

> The **Page size** represents the frame within which text and images are printed. Whereas **Media Size** is the size of the medium printed on. In order to print unclipped pages the page size must not exceed the media size.
>
> From the **Media Size** menu choose either a standard media size or `Other` to use the **Media Width (MW)** and **Media Length (ML)** text boxes to specify a custom media size. If using a roll device, the **Media Length (ML)** text box is grayed out.
>
> When you select a standard paper size, its dimensions are shown in the **Media Width (MW)** and **Media Length (ML)** text boxes. All the standard paper sizes are also available as transverse paper sizes, for example `A4 Transverse`. The dimensions of these paper sizes are reversed, which means that you must choose a transverse paper size if you have installed the paper in your printer in a landscape orientation. Landscape is the long edge of the paper leading into the printer and portrait is the short edge of the paper leading into the printer.

Make all other settings as normal, following the suggestions in the *Harlequin RIP OEM Manual*.

1.9.2 Roaming page buffers

You can view page buffers on screen using the standard RIP tools, but some things are potentially confusing when you are viewing PhotoInk page buffers:

- The title bar of the Roam window displays asterisk (`*`) characters, where you might expect to see letters representing the colors in the page buffers. This is normal when the color system is not Gray, RGB, or CMYK.

- Objects that are drawn in shades of colors, for which there are two or more inks in use, disappear only when you turn off the display of both inks. For example, when the cyan component uses both Photo Cyan and Photo Cyan Light, some of the cyan component remains visible until you use the Roam Options dialog box to turn off both inks.

- When using Roam to preview output, the image displayed has poor color fidelity. In particular, the image may appear less saturated. This is because the Roam preview does not account for the dot gain that occurs when printing.

- When viewing a page that uses a resolution of 1440 x 720 dpi the aspect ratio is maintained, which may cause the file to appear elongated.

1.10 Color management

This section describes the processes involved in color management, including:

- "Calibrating the printer" on page 54
- "Creating and installing ICC profiles" on page 58.
- "Creating a HIPP or ColorPro color setup" on page 60
- "Using Harlequin Full Color System (HFCS)" on page 61

For more information on managing color in the Harlequin RIP, see *Harlequin Color Production Solutions User's Guide* (for details on HIPP and HFCS) and *Harlequin ColorPro™ User's Guide* (for details on ColorPro).

1.10.1 Calibrating the printer

We recommend calibrating the printer for each device type and paper/resolution that you use. To provide a useful starting point the plugin is supplied with a number of calibration profiles which define the ideal or 'reference' state for the printer. The profiles are installed in
`…RIP_folder\SW\Config\Devices\DevCalibration\`, one for each device type.

The response of your printer (the 'user printer') may differ from the reference printer. To obtain optimum output quality you need to calibrate the printer so that it responds in the same way as the reference printer. The adjustments

needed to correct the user printer so that it matches the reference printer are defined in a calibration set. The supplied calibration profiles are distinguished from user-generated calibration sets by being enclosed in parentheses, like these ( ).

The way in which you calibrate your device depends on the Harlequin RIP version that you are using. For details on calibration in the Eclipse Release and later RIPs, see "Eclipse Release calibration procedure" on page 55. For details on calibration in pre Eclipse Release RIPs, see "Calibration procedure for pre Eclipse Release RIPs" on page 57.

1.10.1.1 Eclipse Release calibration procedure

To ensure accurate calibration, it is recommended that three targets are printed and measured. For subsequent recalibrations, an accurate profile can be achieved with one pass, as described in "Recalibrating the printer" on page 58. Before you begin calibrating, load the correct paper and initialize the printer according to the manufacturer's instructions.

Print and measure an initial target

1. Create a page setup in the Harlequin RIP with the following options:

   - **Device**—select the correct device

   - **ProofReady**—select **(None)**

   - **Calibration**—select the paper/resolution type

2. In the Harlequin RIP, click **Output > Print Calibration** to open the Print Calibration window. From the list choose your page setup then click **Print uncalibrated target**.

3. Measure the printed target with *Genlin*, or your preferred calibration program. *Genlin* is installed with the Harlequin RIP and is described in the *Harlequin RIP OEM Manual*.

4. In the Harlequin RIP, click **Output > Calibration Manager** to open the Calibration (Dot Gain) Manager. In the Manager click **Device** and select the correct device, and then click **New** to open the Edit uncalibrated target for… window.

5. In Edit uncalibrated target for…, click **Profile** and select the correct paper/resolution type. All other options should be left at their default settings (ensure **Force solid colors** remains unchecked).

6. In the **Name** field, enter an appropriate name for the initial profile, for example `Ucm Enhanced Matte 720-1` and click **Import > Import** to read the calibration data.

7. Click **OK** until all open windows are closed.

Print and measure a second target

1. Open your page setup (the one you used to print the initial target). From the **Calibration** list, select the calibration profile you just created (`Ucm Enhanced Matte 720-1`) then click **OK** to close the page setup window.

2. Open the Print Calibration window. Select your page setup and click **Print calibrated target** (note this time you are selecting *calibrated* target). Measure the printed target.

3. Open the Calibration (Dot Gain) Manager. Select the appropriate device and choose the calibration profile that you made with the initial target.

4. Click the **Copy** button to create a duplicate of the profile. From the list select the copy and click **Edit from calibrated target** to open the Edit calibrated target for… window.

5. Change the name of the profile to `Ucm Enhanced Matte 720-2` and click **Import > Import** to add the calibration set.

6. Click **OK** until all open windows are closed.

Print and measure a final target

1. In the RIP, open your page setup and from the **Calibration** list select `Ucm Enhanced Matte 720-2`. Click **OK** to close the window.

2. Open the Print Calibration window. Select your page setup and click **Print calibrated target**. Measure the target with *Genlin* or your favorite calibration program.

3. Open the Calibration (Dot Gain) Manager. Select the device and the calibration set you created for the second target.

4. Click the **Copy** button to create a copy of the profile. Select the copy and click the **Edit from calibrated target** button.

5. Name the profile `Ucm Enhanced Matte 720-F`, to indicate it is the final calibration set. Click **Import** to read the calibration data, and click **OK** to add the calibration set to the Calibration Manager. You should remove all the intermediate calibration sets from the Calibration Manager to avoid choosing the wrong profile in a page setup.

6. Modify your page setup so that it uses the final calibration set.

1.10.1.2 Calibration procedure for pre Eclipse Release RIPs

The calibration procedure described here is for users of supported pre Eclipse Release RIPs. Perform the calibration procedure for each device type and paper/resolution that you use. Recalibrate the printer at regular intervals to maintain accuracy, as described in "Recalibrating the printer" on page 58. Before beginning a calibration, load the correct paper and initialize the printer according to manufacturer's instruction.

1. Create a page setup in the Harlequin RIP with the following options:

   • **Device**—select the correct device

   • **Calibration**—select the paper/resolution type

2. In the Harlequin RIP, click **Output > Print Calibration** to open the Print Calibration window. From the list shown, choose your page setup then click **Print uncalibrated target**.

3. Measure the printed target with *Genlin*, or your preferred calibration tool. *Genlin* is installed with the Harlequin RIP and is described in the *Harlequin RIP OEM Manual*.

4. In the Harlequin RIP, click **Output > Calibration Manager** to open the Calibration (Dot Gain) Manager. In the Manager, click **Device** and select the correct device, and then click **New** to open the Edit uncalibrated target for… window.

5. In the Edit uncalibrated target for… window click **Profile** and select the correct paper/resolution type. All other options should be left at their default settings (ensure **Force solid colors** remains unchecked).

6. In the **Name** field enter a name for the profile, for example `Ucm Enhanced Matte 720` and click **Import > Import** to read the calibration data, and then click **OK** until all open windows are closed.

7. Modify your page setup so that it uses the named calibration set.

1.10.1.3 Recalibrating the printer

You should periodically recalibrate the printer to ensure consistent output results, as follows:

1. Click **Output > Print Calibration** to open the Print Calibration window. Select the appropriate page setup and click **Print calibrated target**. Measure the printed target.

2. In the RIP, click **Output > Calibration Manager** to open the Calibration (Dot Gain) Manager window and select the calibration set used in the page setup.

3. Click **Edit from calibrated target** to open the Edit calibrated target for… window. Click **Import > Import** to read the calibration data and **OK** to save the profile. You may want to enter a new name for the profile to indicate it is an updated profile, for example `Ucm Enhanced Matte 720-Date`.

4. Modify your page setup so that it uses the new calibration set.

1.11 Creating and installing ICC profiles

The creation and installation of an ICC profile involves these processes:

*   Creating a suitable page setup

*   Printing and measuring ICC profiling target to produce an ICC profile

*   Installing the ICC profile in the RIP

When creating a page setup to use for printing profiling targets you have two main options:

Raw State   You can create a page setup that contains no color management data:

Pre Eclipse Release RIPs

In this case both the **Color** and **Calibration** menu options in the page setup must be set to `(None)`.

Eclipse Release or later RIPs

In this case both the **ProofReady** and **Calibration** menu options in the page setup must be set to `(None)`, and you must choose `(No color management)` from the **Color** menu.

Note: The printer in this 'raw state' may not be a suitable basis for creating profiles.

Golden State   You can use a temporary calibration profile or calibration set in your page setup that supplies a reference state for the printer.

The option that you choose affects the ICC profile and how you import it.

Note to OEMs: The SetGold utility can be used to create a suitable reference state calibration profile. See the *SetGold User Guide* for details. Alternatively, you can manually create a linearization profile by referring to the manual *Harlequin Profiles and Calibration*.

Having created a suitable page setup, use it to print the ICC profiling target and measure it using an appropriate software package.

The exact procedure you should use varies from package to package, but it is possible to give some general hints:

- **Total area coverage:** For some paper types the total area coverage should be limited. This depends on the paper, ink type, resolution and screening used, but a good guide is to limit the coverage to 320% for uncoated papers and to 400% for coated papers. Some experimentation may be required to determine the optimum setting.

- **Black generation:** Because the printer does not have a light black ink (does not apply to 4000, 7600 and 9600 models), any black ink that is imaged in highlight regions is visible and can introduce an unnecessarily grainy appearance to some images. Select a setting which images

black only in dark regions. (If it is not clear which settings will image
black only in dark regions, select the minimum amount of black genera-
tion allowed by the ICC profiling package.)

- **Number of patches:** Although the number of color patches printed and
  measured is not always a guide to color quality, it is generally true that
  printing more patches produces better results for any given ICC profil-
  ing package.

Having created the ICC profile, install it using the menu option **Color > Install
ICC Profile**. In the **Linear Calibration From** menu in the Install ICC Profile dialog
box choose either:

- `Linear` if the page setup you used contained no color management data
  (raw state); *or*

- The name of the calibration profile or calibration set that you used in
  the page setup (golden state). The calibration data is incorporated into
  the ICC profile when you import it. This means you can delete the tem-
  porary calibration profile or calibration set once you have imported the
  ICC profile.

You can create a color setup using this profile (see "Creating a HIPP or Color-
Pro color setup" on page 60 for details).

1.12 Creating a HIPP or ColorPro color setup

The selection of a calibration profile (pre Eclipse Release RIPs) or a
ProofReady profile (Eclipse Release or later RIPs) automatically includes a
default color setup to provide instant color management. The color profiles
used in the default color setups are also available for the creation of your own
color setups. Alternatively, you could also create a color setup using imported
ICC profiles. See "Creating and installing ICC profiles" above for further
information. Creating your own color setup allows you to specify the input
profiles as well as other color setup options.

Follow these steps to create a color setup:

1. Choose the menu option **Color > Color Setup Manager.**

2. Choose the device for which you want to create this color setup from the
   Device menu.

For example, choose `SP10600 VSD Roll`.

3. Click **New** or **New 'ColorPro' Setup**, depending on your RIP version.

4. If using a pre Eclipse Release RIP, click **Create** in the ICC (HIPP) section of the Create Color Setup dialog box.

5. In the New Color Setup dialog box, choose the options for the color setup you are creating.

    For example, choose `3M Matchprint` for the CMYK input profile and `sRGB` for the RGB input profile and then choose `Ucm Enhanced Matte 720` as the output profile.

6. Choose `(->Default)` from the **ICC Rendering Intents** or **Main intent** menu, depending on your RIP version.

7. Set the remaining options as desired. For details of these options see the *Harlequin Color Production Solutions User's Guide* or the *Harlequin ColorPro™ User's Guide*.

8. Click **Save As** to save this color setup.

9. Enter a name for the color setup in the **Save As** text box in the Save Setup dialog box. Click **Save** and then **OK** to close the Color Setup Manager.

You may now use this color setup in a page setup.

1.13 Using Harlequin Full Color System (HFCS)

In versions of the RIP prior to the Eclipse Release, the Harlequin Full Color System (HFCS) can be used to create a color setup, as described in the *Harlequin Color Production Solutions User's Guide.*

Take care to select an appropriate profile for the paper being used and ensure that the resolution and screening settings are as required by the profile.

When using HFCS there is no need to install ICC profiles for the printer because HFCS will automatically produce color rendering dictionaries from the data contained in the selected profile. Should you wish to do so, however, it is possible to install and use ICC profiles with HFCS in the same way as with HIPP.

1.14 Troubleshooting and tips

This section describes messages that may appear in the RIP monitor window and offers troubleshooting advice and tips on how to maximize your use of the plugin. If you have difficulty understanding any message, report the exact message to your support organization.

Note: Most of these messages appear in the RIP monitor window and are preceded by details of the plugin and device that you are using. For example:

```
ProofReady - Epson VSD (SP10600 VSD Sheet)
        Message...
```

1.14.1 Printer-specific messages and symptoms

You can clear most output problems by aborting the output from the RIP and then clearing the media from the printer. Here are some messages and other symptoms that require different cures:

`Auto sheet feeder will not be used because it is not allowed with the selected media`

This message indicates that manual sheet feed has been forced on media that does not support it. These include: Smooth Fine Art Paper, Textured Fine Art Paper, Velvet Fine Art Paper.

`Auto cut has been switched off because it is not allowed with the selected media`

This message indicates that auto-cut has been prohibited on the selected roll media type.

`Printer rear cover open`

Output will stop until the printer cover is closed.

`Multi-sensor error`

See printer documentation.

`Cleaning failed`

See printer documentation.

`Ink levels MK n%, C n%, M n%, Y n%, PK n%, LCn%%, LM n%, LK n%`

Where `n%` represents a number followed by a percent sign, for example, `87%`. Indicates the remaining percentage of ink for each of the cartridges on an 8-color printer loaded with 8-color inks.

`Ink levels K n%, C n%, M n%, Y n%, K2 m%, C2 n%, M2 n%, Y2 n%`

Remaining percentage of ink for each of the cartridges on an 8-color printer loaded with dual-CMYK inks.

`Ink levels K %N, C %N, M %N, Y %N, LC %N, LM %N , LK %N`

This message is a warning rather than an error message. It appears periodically and reports as a percentage the amount of ink available in the printer. To prevent the 'Ink out' error message you should monitor these ink levels.

`Warning - ink low - cartridge %s`

Where `%s` is a string, for example, `#3`, or `#2`, `#5`, `#7`. This message indicates that one or more ink cartridges are getting low – the numbers refer to the cartridge positions, from left to right, on the printer.   (The numbers should also be printed above the ink cartridge position on the printer). `#3` means cartridge number 3 is low. `#2, #5, #7` means cartridge number 2, cartridge number 5 and cartridge number 7 are all low.

`The selected ink combination does not match this printer`

This issue occurs, for example, when an attempt is made to send Matte black to a printer which only has Photo black (and is unable to auto-switch), or when attempting to send a 7-color job to a dual-CMYK printer.

Note: The plugin is only able to output this message when it is able to query the printer and check the ink variant. On unidirectional communication connections, or if the printer is in a state which prevents it responding to the query, the plugin may be unable to detect the mismatch before it starts to send the job. In such cases, a command-error will occur on the printer.

Control panel in use

> This message occurs when the printer control panel is being used. The plugin resumes printing when the printer allows it, that is, when the control panel is not being used.

Paper gap error

> The paper is too thick or the adjustment lever is in the wrong position.

Cutter position error

> The roll paper cutter did not return to the correct position.

Cutter jam

> The cutter is jammed.

Ink color error

> This error occurs when the ink is changed during a print, for example, the black ink was changed from Photo to Matte.

Ink combination error

> An ink combination error.

This is a PRE RELEASE of the Epson VSD Plugin using Biplane screens

> This message appears each time that you use a biplane device type to remind you that the biplane screens are pre-release screens, and therefore are subject to change.

Warning: Top and Bottom Margin values will be swapped.

> This warning informs you that your version of the RIP needs to swap values specified in the Page Layout dialog box for the top and bottom margins to correctly deal with sheet-fed devices. The warning ensures that you are aware of this issue, as described on page 51.

Device overrides applied for profile (*profile details***)**

> The device settings required by supplied profiles are known to the plugin and these settings override any settings you may have changed. This is to ensure correct color management.

> For example, if you change the **Ink type** from UltraChrome to Dye, and use a supplied profile for an UltraChrome device, the **Ink type** will be changed back to UltraChrome by the plugin. To check which settings are

used when outputting a job, you can open the Configure Device dialog box from within the Output Controller.

SWOP proofing overrides applied for profile 'SWOP-cert SemiMatte Proof'

The device settings required by the SWOP certified profile are known to the plugin and these settings override any settings you may have changed. This is to ensure correct color management.

Warning - no image in the printable region

This warning is rare and only appears when an image smaller than the unprintable area is positioned at the edge of the media so that it is completely clipped. In this case, the job is processed but the output page will be blank.

Resolution changed to *N* x *N*

This message confirms that the square resolution setting in the Page Setup dialog box has been changed to a *N* x *N* mixed resolution. The reason why you cannot select mixed resolutions in the Page Setup dialog in some RIPs is explained on page 50.

Page Layout media size is less than the Configure Device paper size - clipping may occur.

This message can appear if you create a page setup that uses a custom paper size and you edit the page setup so that it uses a larger, standard paper size. If this is the case, clipping may occur because the media values in the Page Layout dialog used for the custom paper size are still associated with this page setup and in this instance they specify the maximum paper size. You can either change the media values in the Page Layout dialog box so that they are larger than the paper size chosen in the Configure Device dialog box, or you can create a completely new page setup.

Image width too large for device - clipping may occur
Image height too large for devices

These messages can occur when limits on the movement of the head prevent the printer from using the entire printable area of the media.

```
Failed to allocate buffers for swathes (N Kb)
```

> If this message occurs, try increasing both the **Minimum memory left for system** and the **Memory for the RIP** by the amount shown in the brackets. On a PC platform, both of these options are in the Configure RIP Options dialog box, accessed by choosing **Harlequin RIP > Configure RIP** and clicking **Options**.

> On a Macintosh platform, you must use the menu option **File > Get Info** to configure the memory for the RIP. You can then set the preferred size to your chosen value.

```
Failed to allocate buffer for compression swathe
Failed to allocate SwatheArray
Failed to allocate BandsCache; not enough memory
```

> If any of these messages occurs, try increasing the **Minimum memory left for system** and the **Memory for the RIP** by multiples of 1 MB. On a PC platform, both of these options are in the Configure RIP Options dialog box, accessed by choosing **Harlequin RIP > Configure RIP** and clicking **Options**.

> On a Macintosh platform, you must use the menu option **File > Get Info** to configure the memory for the RIP. You can then set the preferred size to your chosen value.

```
Failed to allocate band buffers (N Kb); not enough memory
```

> If this message occurs, try increasing both the **Minimum memory left for system** and the **Memory for the RIP** by the amount shown in the brackets. On a PC platform, both of these options are in the Configure RIP Options dialog box, accessed by choosing **Harlequin RIP > Configure RIP** and clicking **Options**.

> On a Macintosh platform, you must use the menu option **File > Get Info** to configure the memory for the RIP. You can then set the preferred size to your chosen value.

> Alternatively, you can increase the **Printer buffer** by the amount shown in the brackets. This option is also within the Configure RIP Options dialog box.

`Print buffer is too small to output this page`

> This message can appear during output. To prevent this error, use **File > Configure RIP** to display the Configure RIP dialog box. Set the number shown for **Printer buffer** to 32768 KB or more.

> **Note:** You may also see a similar message while using Roam or Reduced Roam. The cure is the same.

`Not enough system memory to output this page`

> This message can appear during output when the RIP is not supplying enough memory for the needs of the operating system on the computer. Set **Minimum memory left for system** to 10000 Kb in the Configure RIP Options dialog box. You may need to set a higher figure for large page sizes.

> On Macintosh computers, depending upon when the memory shortage is detected you may also see the operating system display a warning dialog box or the computer may hang before being able to display a message.

`Warning - this printer (`*`printer name`*`) may not be the expected model`

> The model name returned by the printer is not one of the expected names for the output device. In this case, the quality of the output cannot be guaranteed.

`Unable to confirm printer status/model`

> Either the connection method does not support bidirectional communications, or the initial attempt to determine the printer status and model name did not produce a reply within 15 seconds. The plugin will assume that the printer is in the correct state and is the correct model and it will send the job to the printer.

`Warning - printer status is unreliable`

> This messages indicates that the status information being returned by the printer may be corrupted.

`Command error on printer or wrong ink type`

> If this message occurs, you will need to restart the printer. You should also check that the ink type selected in your page setup is correct for the printer, before resubmitting the job.

`The selected ink type is incorrect for this printer`

This message can occur when the job or associated profiles are for a different ink type to that installed in the printer. You should ensure that the Calibration and Color profiles used in your page setup are for the ink type installed in your printer (Photographic Dye™ versus Archival™), or that you are using the correct UltraChrome Black (Photo Black versus Matte Black). You should also check that the **Ink type** chosen in the Configure Device dialog is correct, as described on page 33.

`%%[Error - Inking regime <`*`name`*`> is not a dictionary ]%%`

Each inking regime name should be associated with a value comprising a PostScript language dictionary.

`%%[Error - Inking regime <`*`name`*`> has not been defined ]%%`

This message appears when the inking regime information necessary for the particular ink, screening, inking regime and resolution combination is missing. Check that you are using a supported combination.

`Warning - ink type not recognized and will not be verified`

This message appears when the ink type information associated with a job has not been recognized. In such cases, the plugin cannot verify whether the printer is using the ink type required by the job.

`Printer communication failed (` *`error details`* **`)`**
`Unable to connect to printer (` *`error details`* **`)`**

The text and numbers in parentheses varies, depending on the reason why the RIP cannot connect to the printer. The final number is the error code generated by the operating system and can be used by GGS to determine the exact cause of the connection failure.

`Unknown output method selected`
`Cannot open selected output method (` *`error details`* **`)`**
`Open error (`*`error details`*`)`
`Unable to open output (`*`error details`*`)`

These messages may appear with a variety of text replacing *`error details`*. The text varies according to the method of output that you chose in the Epson Configuration dialog box and the exact problem. This text should help you diagnose the problem. If you have difficulty under-

standing any message, report the exact message to your support organization.

Note: The above message may appear if both the parallel port and the USB port are connected to the printer at the same time. In this case, the parallel port is disabled by the USB port. To enable the use of the parallel port, unplug the USB connection at the printer. The printer will immediately process any page buffers.

```
Warning - printer maintenance required (see printer panel)
Warning - printer ink cover open
Warning - printer bin 1 paper low
Warning - printer bin 2 paper low
Warning - <ink name> ink low
Warning - <ink name> ink out
Paper jam
Ink out
Paper size /type check error
Paper eject error
Print head too hot
Paper too thick
Printer nozzle check error
Wrong ink cartridge
Printer busy printing through another interface
Printer cover open
Printer paper lever released
Paper out
Wrong paper type or paper type select not complete
Printer initializing
Paper not cut
Printer paper set lever released
Printer ink cover open
Printer ink lever released
Printer is waiting for the ink to dry
Paper not straight
```

These messages are relayed directly from the printer and should also appear in the control panel of your printer. See the manual for your printer for details on how to respond to these error or status messages.

```
Unknown error (N) reported by printer
```

This message appears if the RIP is unable to recognize the error reported by the printer. A brief error message may appear in the Output Controller/Monitor dialog box, which may help you diagnose the

problem. If necessary, report the error to your supplier for further
details.

Unable to create file - "*full path name of output file***"**

This message informs you that the RIP was unable to create an output
file. The full path name of the file that it tried to create is specified within
the quotation marks. Check that the file does not already exist and that
the output folder is not read-only. You must also ensure that enough
disk space is available.

Unable to create file using path "*full path name of output file***"
and template "***file name template***"**

This message informs you that the RIP was unable to create an output
file due to a problem with the file path of the output file and the file
name template. Check that all the specified directories in the full path
name exist and are writeable. If an earlier error message indicates that an
invalid file name template was specified, you must enter a valid file
name template in the Configure Device dialog box.

Job output for "*job name***", sent on** *<date> <time>*

This message informs you that the RIP has finished sending the job to
the printer. The job name is specified in quotation marks and is followed
by the date and time at which the job was output.

Job output for "*job name***", filename "***full path name of output
file***", finished on** *<date> <time>*

This message informs you that the RIP has finished creating an output
file. The job name and the full path name of the output file are specified
in quotation marks, followed by the date and time at which the output
file was closed.

Job output for "*job name***" is aborting - Printer will print data
that it has already received.**

This message can appear during printer output. It is not a separate error,
only an indication of how the RIP and the printer are recovering from an
error reported in an earlier message.

If the RIP aborted due to a problem with the parallel (LPT1) connection
method, you may be prompted to retry or cancel the job. If this is the

case, click **Cancel** to abort the job and then check that the printer is switched on and connected using the correct cable.

Job output for "*job name***" is aborting**

This message can appear during the creation of an output file. It is not a separate error, only an indication of how the RIP is recovering from an error reported in an earlier message.

Job output for "*job name***", aborted on** *<date> <time>*

This message informs you that the RIP has aborted output of the job to the printer. The reason for aborting the job should be reported in an earlier error message.

Job output for "*job name***", filename "***full path name of output file***", aborted on** *<date> <time>*

This message informs you that the RIP has aborted the creation of an output file. The reason for aborting the job should be reported in an earlier error message.

Job output for "*job name***" using path "***full path name of output file***" and template "***file name template***", aborted on <***date***> <***time***>**

This message informs you that the RIP has aborted the creation of an output file. The reason for aborting the job should be reported in an earlier error message.

Printer maintenance tank full

Each time you perform nozzle cleaning cycles after changing ink sets on the Epson Stylus Pro 4000/7600/9600, the excess ink is captured in the printer maintenance tank. This error message appears when the printer maintenance tank is full. In this case the current job is aborted. You should either empty the printer maintenance tank or replace it.

Printer maintenance tank removed

This warning appears when the printer maintenance tank used for collecting excess ink on the Epson Stylus Pro 4000/7600/9600 has been removed. In this case the current job is suspended until the printer maintenance tank is replaced.

`Maintenance tank remaining ` *`nn`*`%`

The new Stylus Pro 4000/7600/9600 and Stylus Pro 4000 printers have a maintenance tank for collecting waste ink. When the tank is 50% full, a warning message is issued. On all Epson VSD printers, if the tank becomes too full the printer may stop printing altogether.

Printer ejects paper before completing a page

This behavior is normal after the RIP has detected an error and displayed a warning message.

Otherwise, this behavior is rare but may occur when using a Microsoft Windows platform and a parallel port to drive the printer. It may be due to the mode set for the parallel port, the printer cable, or some interaction between these items. Reset the printer before retrying the same page. If the problem persists, check the mode set for the port in the computer's BIOS: do not use EPP mode, particularly if you have a RIP security dongle attached to the same port. If the port is also in use for a dongle, move the printer to another parallel port. Finally, try a new bidirectional parallel printer cable.

Poor or erratic image quality

Try to localize the problem. If there are any error or warning messages look at their causes and try the associated cures. If there are no messages, start by printing any test pages available on the printer itself, perhaps from a test or diagnostic menu. If the problem is not present in any of these tests, there is likely to be some problem or inappropriate setting in the page setup.

No output

Make sure that you are sending output to a printer that is properly connected, powered up, supplied with ink and media, and ready to receive data. Confirm that the printer itself is working by printing a test page, alignment test, or similar printer-based function.

Output appears clipped

When printing using large paper sizes or high resolutions a VM Error may occur. Some jobs may suppress the VM Error and print using the default page size specified in the Page Layout dialog box, so that the

output appears clipped. If this occurs we recommend that you increase the Band size in the Configure RIP options dialog box to 1024 KB.

PhotoInk color management fails to preserve 100% process black

When using a PhotoInk device type, the **Preserve 100% process black** color setup option may not be honored. To prevent black from being color managed in this instance, you should add a page feature to your page setup, which runs the following PostScript:

`<</ReuseColorChains false>> setsystemparams`

If necessary, refer to the OEM manual for details on creating and using page features.

1.14.2 Messages for file name templates

This section details possible error messages that may appear in the RIP monitor window due to the use of incorrect file name templates (see "Output file naming" on page 37). Suggestions are given to prevent these errors.

All messages are prefixed with the text: `File name generation error:`

`Filename too long for target platform`

This message appears when the combined file name stem and extension are too long for the target platform. For example, the combined length of the file name stem and extension must not exceed 255 characters on a Windows platform or 31 characters on a Macintosh platform. To prevent this error, use truncated tags, as shown in the example for the `<dos>` tag in "Examples of tag usage" on page 40.

`File stem too long for target platform`

This message appears when the file name stem is too long for the target platform. To prevent this error, restrict the length of the stem by reducing the fixed text, or by using truncated tags. The example for the `<dos>` tag in "Examples of tag usage" on page 40 demonstrates truncation.

`Extension too long for target platform`

This message appears when the file name extension is too long for the target platform. For example, file names in UNIX are not considered to have a separate file name extension. If using the `<dot>` tag in conjunction

with the `<unix>` tag this error would be generated. To prevent this error create a template such as `<unix><jobname>.epf` rather than using the `<dot>` tag.

Full pathname too long for target platform

This message appears when the full pathname (combination of the file path and the file name) is too long for the target platform. For example, in Windows operating systems the full pathname must not exceed 259 characters. To prevent this error, examine the number of characters in the **Browse folders** file path (for example, `C:\HQ55\RIP\FILES\`) and create a template in which the combined length of the file path and the file name do not exceed the limit for the platform.

The folder name/path was not supplied

This message appears when the file path is not specified in the **Browse Folders** text box within the Epson Configuration dialog box. To prevent this error, provide a valid file path.

Unknown tag found in template

This message appears when an unknown tag is found in the template. This is most likely due to a spelling error.

Template contains an incomplete tag

This message occurs when the opening and closing brackets of a tag are missing, that is < or > is missing.

Filename Template resulted in a null filename

This message occurs when the template only contain characters that are not allowed in file name on the relevant platform.

Tag delimiter mismatch in template

This message appears when a tag delimiter, either `<` or `>`, is missing from a tag. Check that all the tags have both delimiters.

An extension is required but not found

This message appears when a file extension is expected but is not specified in the template. For example, if using the `<dot>` tag, a file extension must be given.

`File requested is not writeable`

> This message appears when trying to write to a file that already exists and that has read-only access. If you wish to overwrite the file, then you must change the file permissions to provide write access.

`Unique name requested but all names are in use`

> This message appears when no further unique numbers are available. For example, if using the template `stem<1unique><dot>epf`, this error would occur once the file names `stem1.epf` through `stem9.epf` had been generated, because no further unique numbers are available.

1.14.3 Messages for post processing

This section details possible messages that may appear during post processing (see "Post processing" on page 45).

`Running post processing command "`*`command`*`" in folder "`*`folder name`*`"`

> This is a progress message, confirming the command that is being run, and the working directory.

`Post processing command failed - Cannot change directory to "`*`directory path`*`"`

> This error message appears when there is a problem changing to the specified directory that prevents the completion of the post processing. Check that the directory exists and that you have permission to access the directory.

`Post processing command failed - "`*`status value`*`"`

> This error message appears when the post processing has been unsuccessful. The `"`*`status value`*`"` is the error code generated by the command or shell you are using and can be used by your system administrator to determine the exact cause of the post processing failure.

1.14.4 Miscellaneous messages

The following is a general list of error messages or warnings that may appear in the RIP monitor window:

%%[Error: rangecheck; OffendingCommand: get]%%

> This message may appear if you try to use a 1-bit device type (see "1-bit device types" on page 3 for details), without first enabling the HEDS1 screening plugin.

> To prevent this error, ensure you enable the HEDS1 plugin, as described in "Installation procedure" on page 4, before using a 1-bit device type.

%%[Error: VMerror; OffendingCommand: pagedevice]%%

> When printing using large paper sizes or high resolutions a VM Error may occur. Some jobs may suppress the VM Error and print using the default page size specified in the Page Layout dialog box, so that the output appears clipped. If this occurs we recommend that you increase the Band size in the Configure RIP options dialog box to 1024 KB.

%%[Error: undefinedfilename; Offending Command: run]%%

> This error message appears if you have created a device type using a name similar to the name of the device type on which it is based. If you use the same text to name the new device as that used to label the device type, you must match the use of lowercase and uppercase characters in the device type label. To prevent this error, open the Device Manager, select the device and click **Edit**. In the Device Manager Edit dialog box, change the name of the device to something completely different.

%%[Warning:Error running file <*file name*>]%%

> This warning appears if you there is a PostScript error in the named file. In such cases, the job will be processed as if the file does not exist.

%%[Error occurred in profile hook <*file name*>]%%

> This warning appears if there is a PostScript error in the named profile hook file. The job is aborted when such an error occurs.

*****WARNING: Insufficient working set may result in paging and performance may be affected
*****Try logging on as a Power User or reducing the memory allocated to the RIP

> This message may occur when using the RIP running on either Windows NT with service pack 6 or 6a or Windows 2000. It is due to the way these operating systems deal with memory requests.

> You can ignore the warning message because performance is not affected in this case. If you wish to remove this error message, two possible solutions exist. You can revert back to using service pack 5 if you are working on Windows NT. Alternatively, you can reduce the amount of memory available to the RIP. This may however affect the performance of the RIP, depending on the total amount of memory that you have available.

Wrong data format for device(Depth *N* **vs** *N*, **Channels** *N* **vs** *N*)

> This message can appear if you try to output a page buffer generated for a 2-bit device type to a biplane device type, or vice versa. The RIP displays this error and disables output in the Output Controller/Monitor dialog box.

> If you wish to output the page buffer, select it from the **Active Queue** list and click **Info** to change the **Output device** to either a 2-bit or biplane device type, depending on the device that the page buffer was originally created for. Deselect the **Disable output** check box to enable output.

> Alternatively, you can delete the page buffer by selecting it and clicking **Remove**.

%% [Error: ioerror; Offending Command: setscreen] %%

> This message can appear if you try to use HDS screens listed in the Edit Style dialog box before enabling the use of HDS or HDS light. In this case, you must enable HDS or HDS light in the Configure RIP Extras dialog box and then re-submit your job.

1.14.5 Parallel port performance and reliability

We are aware of several problems with parallel port behavior when working with built-in parallel ports on PC platforms - where the hardware implementation and supported modes of operation have changed greatly over the development history of the PC.

For built-in parallel ports, there are different issues under Windows NT as opposed to Windows ME, Windows 98 and Windows 2000.

Windows NT

Under Windows NT, the data transfer rate of some parallel ports can be very poor. In most cases, the data rate achieved by the RIP is now as high as can be achieved by copying a file to the parallel port, but this rate is often less than you may expect to achieve. (Windows NT always uses the parallel port in a basic or compatible mode, regardless of BIOS settings such as those discussed next.)

Windows ME/Windows 98/Windows 2000

Under Windows ME, Windows 98, and Windows 2000, the parallel port driver can achieve higher data rates, especially when operated in ECP mode. Using this mode the operating system sometimes crashes or shuts itself down. You can avoid these problems by reconfiguring the parallel port in the BIOS to select the most basic configuration. The way to enter and change the BIOS configuration varies from machine to machine, as does the terminology used for the parallel port mode.

To avoid crashes, try using options with descriptions such as "bidirectional", "compatible", "unidirectional", or "output only". Do not choose any option where the description includes the words ECP or EPP.

1.14.6 Problems with passwords

If you have problems enabling a device or option you should confirm with your supplier the password or password file. They may provide you with a new password or password file. If this is the case, you may need to provide the serial number of your RIP. The RIP displays this number in the RIP monitor window when starting up, in the form:

```
Serial number: 1234-56
```

You must also tell your supplier the *platform* for which you require the password or password file. The platform is the combination of operating system and processor type. For example, you might specify Windows NT, and Intel processor (CPU).

Once you have a valid password or password file, follow the relevant steps:

Password file   Copy the password file into the **Passwords** folder, which is a subfolder of the **SW** folder. See the *Harlequin RIP OEM Manual* for further details.

Password   Use the **File > Configure RIP** menu option to display the Configure RIP dialog box. Click the **Extras** button in the Configure RIP dialog box to display the Extras dialog box. Select the entry for the device or option that you wish to add, and click **Add** to display the Enable Feature dialog box. Enter the password given to you by your supplier, and click **OK**.

1.14.7 Using Chain screening

You may see patterning if you use Chain screening. To optimize output you should use specific settings in conjunction with Chain screening. The settings you should use are described in the procedure below:

1. Open the Separations Manager dialog box, using the menu option **Color >Separations Manager**.

2. Click **New** if you wish to create a Separations style that uses Chain Screening or select the style which uses Chain Screening that you wish to **Edit**.

3. Check that **Chain** is selected from the **Dot shape** menu.

4. Ensure that **Override angles in job** is not selected. Do not adjust the angles as the RIP will now use an optimum set of angles.

5. Ensure that **Override dot shape in job** and **Override frequency in job** are both selected.

6. Set the screen frequency to 80 lpi by changing the values in
    Edit selected row.

7. Ensure that **Use Harlequin Precision Screening** is not selected.

8. Set the remaining settings as desired.

To further improve output you should use color management. See "Patterning when not using color management" below.

1.14.8 Notes on the Epson Stylus Photo 2200

When using the Epson Stylus Pro 2200 printer you should be aware of the following issues:

- The printer is unable to recognize when an incorrect paper format has been loaded. If a roll-mode job is sent to the printer with sheet paper loaded, the "Paper" indicator on the printer is turned on, but no paper-out indication is sent to the host and the plugin is unaware the paper is incorrect. Conversely, do not attempt to send sheet jobs to the printer when roll paper is loaded; the printer will attempt to feed the whole roll when a form-feed instruction is received. This also affects Epson's nozzle check routine, therefore do not attempt a nozzle check when roll paper is loaded.

- The printer is particularly prone to ink contamination if overinking occurs, for example, the yellow nozzle may become contaminated with black and cyan inks. You should therefore avoid situations where overinking may occur, particularly at high resolutions or when making high resolution profiles.

- The printer is unable to indicate to the host which sort of black ink is loaded. The plugin therefore cannot protect against a Matte Black profile being used with Photo Black, or vice-versa.

1.14.9 Notes on the Epson Stylus 4000

When using the Epson Stylus Pro 4000 printer you should be aware of the following issues:

- Special attention should be given to the following issue: Do **not** override the `Feed Sheet Paper` message that appears on the printer when a sheet-mode job is sent to a printer loaded with a roll.

  If the operator just presses the **Sheet<->Roll** switching button the printer will print the job and then feed the *whole* roll. The only way to prevent this is to power off the printer: a simple reset will still dump the roll.

- This release of the plugin (1.2r1) does not support dual CMYK mode.

- The printer does not honour `blank skip eject mode` on a roll job if **Cut paper after each page** is not selected in the Configure Device dialog box. If a job is aborted (by dragging it out of the active queue for example), when you subsequently manually invoke a cut from the printer control panel the full size of paper is ejected, not just the part that was printed on.

- Extra sheet feed when using software microweave. This may be a printer firmware issue. Epson are aware of this problem.

- No bi-directional communication when using an Ethernet connection. The printer is unable to communicate ink levels, paper status and so on to the plugin when the printer is connected via Ethernet. This is under investigation with Epson.

- Swathe missing. Occasionally, when using software microweave, a swathe at the foot of the job fails to print. The result is a print that has an area approximately 15mm up from the bottom which has not printed correctly. The last swathe has not printed and therefore the area looks light (c.75%) of that of the rest of the print.

- Global Graphics do not recommend connecting Ethernet *and* USB to the printer, as the following issue has been observed: when the printer is powered on the operating system detects new hardware via the USB port and locks all communication with the Ethernet card. Any jobs sent

to the device via Ethernet will therefore time out and report a communications failure similar to the following: `Printer communication failed (Send error : 305, 10054).`

This behavior has occasionally been observed when only connected via Ethernet (the network card lights are solidly on, that is, no activity is evident). Powering the printer off for ten seconds and back on again may be used to recover from this condition.

1.14.10 Patterning when not using color management

You may see patterning in flat tint areas of black if you print without using any color management. To avoid this problem, use the supplied calibration profiles and color profiles, as listed in "ProofReady profiles" on page 19. If the media or screening type that you wish to use is not supported by the supplied profiles, then you need to create your own profile. If necessary, you can use the supplied profiles that are optimized for HDS Super Fine screening with all of the HDS screen sets.

1.14.11 Sending files to a printer using Windows printer drivers

You can send output to a printer using a networked PC acting as a print server, by creating an output file in the RIP and then sending this file to a PC print server. This method allows the use of Windows print spooling and transfers all control of the printer to the print server.

For the RIP running on a PC, you can enter the name of the print server and printer in the Epson Configuration dialog box when sending output to file.

For the RIP running on a Macintosh computer, you can send files by copying the file to a PC and then dragging it to the printer.

Note: You cannot send output files to a printer directly connected to a Macintosh computer. This is because Macintosh computers do not send printer files directly to a printer. Instead, Macintosh computers use an application associated with each file type.

1.14.11.1 Installing the Windows shared printer

You or your system administrator must install the appropriate Windows printer on the print server. For example, on Windows NT use **Start > Settings > Printers** and open the **Add Printer** icon. For details, see the description of the NT Print input method in the *Harlequin RIP OEM Manual*.

The important points are:

- Choose the correct printer manufacturer and model. If the printer model is not listed, you may need to click **Have Disk** and provide a disk or CD-ROM supplied by the printer manufacturer.

- Make the printer shared and choose an appropriate **Share Name**.

- Make a note of the share name of the printer for use in the following RIP procedure.

1.14.11.2 Using the shared printer from the RIP

Once you have produced a shared printer:

1. In the RIP, edit the page setup you wish to use and open the Epson Configuration dialog box.

2. Choose `File` from the **Output method** menu.

3. Enter the name of the PC acting as the print server in the **File Output: Change** text box. For example, `\\PCPrintserver`.

4. Enter the share name of the printer in the **File Output: Browse files** text box. For example, `Stylus10000`.

5. Set remaining options in the Epson Configuration dialog box and Page Setup dialog box as required and print a file using this page setup.

The RIP does not report the progress of the job; the print server provides this information.

1.14.12 Calculating memory requirements for the Epson VSD plugin

For correct and reliable operation when using the Epson VSD plugin in the RIP, you may need to allocate *additional* memory to the RIP's basic memory requirements, which are listed in "System requirements" on page 4.

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The amount of memory required depends on the printer model, the screening method, job width and output quality you are using. However, using the information in Table 1.5 and Table 1.6 a reliable figure can be calculated and added to the **Printer buffer** and **Minimum memory left for system** RIP options, shown in Figure 1.9.
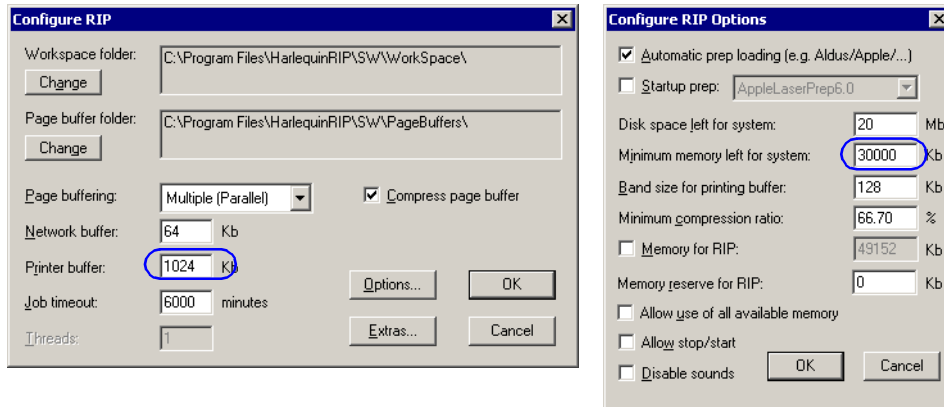

Figure 1.9 Memory allocation settings

The procedure for calculating the memory allocation for the RIP is as follows:

1. Depending on which screening method you are using, refer to Table 1.5 for HEDS1/HDS screening or Table 1.6 for HEDS2 screening. For information on which screens are used with the ProofReady profiles see, "ProofReady profiles" on page 19.

2. In the appropriate table, look up your printer and the desired output resolution, and reference the value in the Print Quality column. For example, on the Stylus Pro 5500 using HEDS2 screening at 1440 dpi with Fast Microweave quality, the values are `3.3/1.0`, as shown below.

HEDS2	Print Quality			
Resolution	Enhanced Microweave	Standard Microweave	Fast Microweave	Printer Microweave
Epson Stylus Pro 5500				
720 dpi	1.7/0.5	1.7/0.5	1.7/0.5	N/A
1440 dpi	3.3/1.0	3.3/1.0	3.3/1.0	0/0*
2880 dpi	6.6/1.9	6.6/1.9	6.6/1.9	

In this example, `3.3` refers to the **Printer buffer** setting and `1.0` refers to the setting for **Minimum memory left for system**, which are entered in the Configure RIP and Configure RIP Extras dialog boxes respectively.

3. To calculate the additional memory settings, multiply the values given in the table by the width of your job (in inches) and then add 5 to the printer buffer value for tolerance. For example, assuming your job is 24 inches:

Printer buffer: $(24 \times 3.3) + 5 = 84.2$ (`84200 Kb`)

Minimum memory left for system: $24 \times 1.0 = 24.0$ (`24000 Kb`)

It is advisable to calculate the widest job you are likely to require and then use those settings to avoid having to constantly update the memory allocation.

4. Add these values to the base figures required for the RIP, which are as follows:

Printer buffer: `20000 Kb` (Windows/UNIX/Mac OS X)

`30000 Kb` (Mac OS 9.*x*)

Minimum memory left for system

`30000 Kb`

For example, using the values given in the table above the new settings in Windows XP would be:

Printer buffer: `104200 Kb` (Windows/UNIX/Mac OS X)

`114200 Kb` (Mac OS 9.x)

Minimum memory left for system
`54000 Kb`.

5. Click **OK** twice to close the dialog boxes. You will be prompted to restart your RIP. When you restart, you will now have enough memory allocated in the appropriate places to run your job.

Table 1.5 Memory requirements for HEDS1 and HDS

HEDS1/HDS	Print Quality			
Resolution	Enhanced Microweave	Standard Microweave	Fast Microweave	Printer Microweave
Epson Stylus Pro 4000				
360 dpi	0.2/0.3	0.2/0.2	0/0	0/0*
2880 dpi	3.6/3.7	3.6/3.7	3.6/3.7	0/0*
Epson Stylus Pro 5500				
360 dpi	0.2/0.2	0.2/0.2	0.2/0.2	0/0*
2880 dpi	1.0/1.0	1.0/1.0	1.0/1.0	N/A
Epson Stylus Pro 7600/9600				
360 dpi	0.1/0.1	0.1/0.1	0.1/0.1	0/0*
2880 dpi	1.9/2.0	1.9/2.0	1.9/2.0	0/0*

Key:

N/A   Indicates that the `Printer Microweave` option is not available at that particular resolution.

    *   There are no additional requirements when using the `Printer Microweave` option, as indicated by the `0/0` entries.

The following table lists the HEDS2 requirements:

Table 1.6 Memory requirements for HEDS2

HEDS2	Print Quality			
Resolution	Enhanced Microweave	Standard Microweave	Fast Microweave	Printer Microweave
Epson Stylus Pro 2200				
360 dpi	0.5/0.3	0.5/0.2	0/0	N/A
720 dpi	1.9/1.1	3.8/1.1	3.8/1.1	N/A
1440 dpi	3.8/1.1	3.8/1.1	3.8/1.1	N/A
2880 dpi	15.2/3.9	15.2/3.9	15.2/3.9	N/A
Epson Stylus Pro 4000				
360 dpi	0.9/0.6	0.9/0.4	0/0*	0/0*
720 dpi	3.6/1.9	3.6/1.0	3.6/1.0	0/0*
1440 dpi	7.1/1.9	7.1/1.9	7.1/1.9	0/0*
Epson Stylus Pro 5500				
720 dpi	1.7/0.5	1.7/0.5	1.7/0.5	N/A
1440 dpi	3.3/1.0	3.3/1.0	3.3/1.0	0/0*
2880 dpi	6.6/1.9	6.6/1.9	6.6/1.9	N/A
Epson Stylus Pro 7600/9600				
360 dpi	0.5/0.4	0.5/0.2	0.5/0.2	0/0*
720 dpi	2.0/1.1	2.0/0.6	2.0/0.6	0/0*
1440 dpi	3.9/1.1	3.9/1.1	3.9/1.1	0/0*
Epson Stylus Pro 10000/10600				
360 dpi	0.8/0.6	0.8/0.3	0.8/0.3	0/0*

Table 1.6 Memory requirements for HEDS2

HEDS2	Print Quality			
Resolution	Enhanced Microweave	Standard Microweave	Fast Microweave	Printer Microweave
720 dpi	3.1/1.7	3.1/1.7	3.1/1.7	0/0*
1440 dpi	6.1/1.7	6.1/1.7	6.1/1.7	0/0*

1.15 Related documentation

For more details about the printer you are using, see the manufacturer's documentation supplied with the printer or the relevant product support section of the manufacturer's web site.

For more information about the RIP, see the *Harlequin RIP OEM Manual*.

For more information about HCPS, see the *Harlequin Color Production Solutions User's Guide*.

For more information about Harlequin ColorPro, see the *Harlequin ColorPro*™ *User's Guide*.