
Harlequin[®] RIP

Using a Control Strip when proofing

Technical Note Hqn 054

June 2011



1 Introduction

The PLUS Harlequin Server RIP includes a **Control Strip** check box in the Effects panel of the Page Setup dialog box.

If you select this check box, a control strip is added to your job, based on the area available on the output medium. This is particularly helpful when creating proofs, because the control strip indicates the settings used for the job and allows you to analyze the print quality.

Note: The control strip is not suitable for use when outputting to platesetters.

The control strip includes:

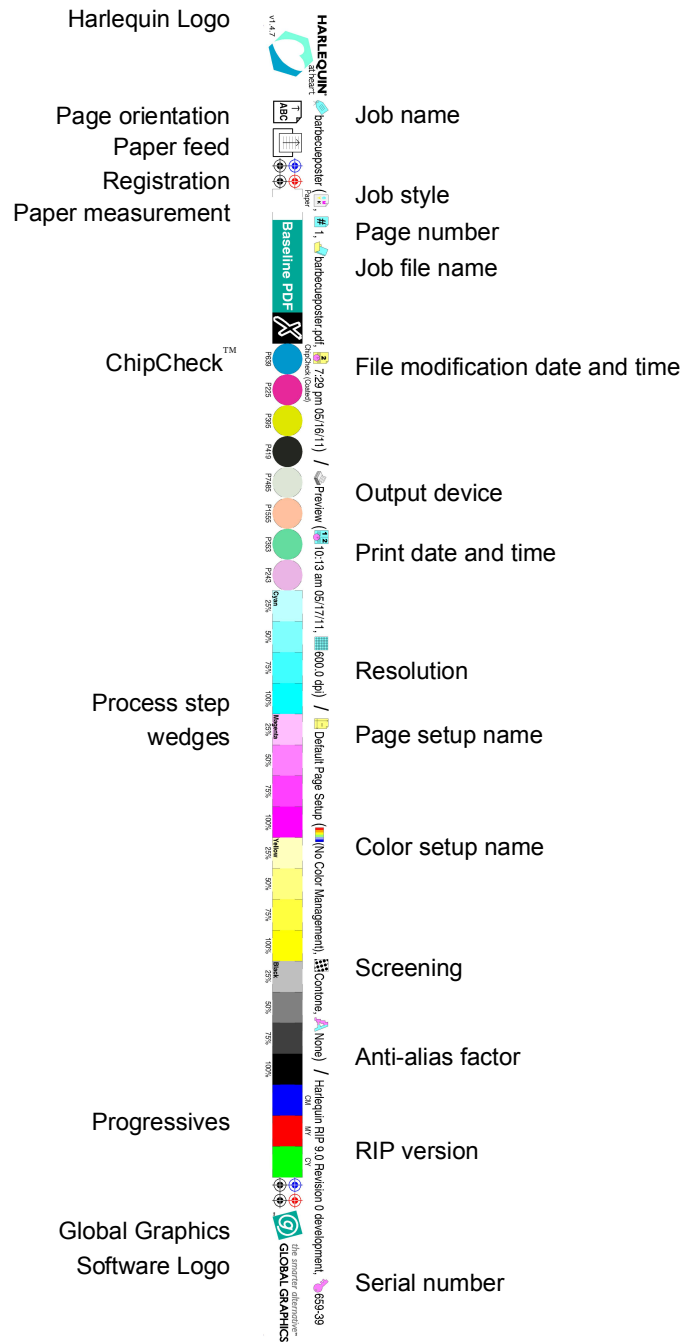
- Logos identifying the RIP as a Harlequin RIP, including a Global Graphics Software (GGS) logo.
Note: The GGS logo may be replaced with that of the OEM partner through whom the RIP was sold (see Section 6.1).
- A color bar for both visual and colorimetric analysis of the print quality.
- A text slugline carrying data about the job file itself and the print configuration.

The color bar printed on cut-sheet media may be constructed using one, two or four lines of color patches, depending on the space available. It may include the following groups of patches:

- Step wedges, containing different numbers of patches at different tint values. These may contain CMYK or spot colors.
Note: Although not used in the configuration as shipped, the step wedges may also be set to include all of the colorants rendered on the proofer.
- Graduated linear tints.
- Progressives (secondary and tertiary colors built from Cyan, Magenta and Yellow).
- Neutral patches comparing CMY combinations with plain Black, and using values from a variety of standardized printing conditions, such as SWOP and ISO 12647-2.

- ChipCheck[™]—a patent-pending approach that allows the color accuracy of the proof to be tested quickly and cheaply without requiring the use of a colorimeter.
- PDF/X status, showing whether the job being printed is PDF/X compliant or not, and whether it claims to be.
- Orientation—showing the orientation of the page, and whether or not it is saved in negative in the original document.
- Feed direction—showing how the output was fed through the printer, as an aid to resolve some kinds of print artifacts.

A sample control strip is shown below:



2 Control strip elements

The control strip contains some of the following elements, depending on your job configuration and the available space on your media.

2.1 Harlequin At Heart logo



Figure 1 Harlequin at Heart logo

The Harlequin at Heart logo is always part of a control strip and is located at the left end of the strip.

2.2 Orientation icon



Figure 2 Orientation icon

The orientation icon indicates the orientation of the job, that is, whether the job has been rotated and so on. It also shows as black on white if the incoming job was negative and forced to positive by the RIP.

2.3 Paper feed icon

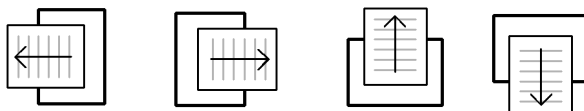


Figure 3 Paper feed icon

The paper feed icon indicates the direction in which the paper is fed through the printer.

2.4 Registration icon

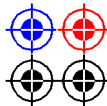


Figure 4 Registration icon

The registration icon allows you to check for any misregistration errors.

2.5 Paper measurement icon

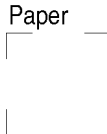


Figure 5 Paper measurement icon

The paper measurement icon allows you to take a paper white reading for the purposes of calibrating your measurement device.

2.6 PDF/X validation icon



Figure 6 PDF/X validation icon

When processing a PDF file the PDF/X validation icon will be displayed. If the file claims to be PDF/X-1a:2001 or PDF/X-3:2002 then the RIP will validate that claim during interpretation. The claimed conformance level will be displayed above the PDF/X validation icon, and the characterized printing condition for which it was prepared will be displayed below it.

If the file is a valid PDF/X file the icon to the right will be a tick, otherwise a cross will be shown.

A PDF file that does not claim to be PDF/X compliant will show **Baseline PDF** on the green background.

Files that claim to be PDF/X conformance levels that are not explicitly supported by the RIP will not be validated, and will show a question mark in the black box to the right. This also applies to files that claim to comply with a conformance level which are not fully validated in the current page setup. For example, PDF/X files will not be validated if the option in the **Accept Type(s)** menu of the PDF Options dialog box has been set to **Any PDF <= 1.4 as basic PDF**, for instance.

2.7 ChipCheck™ strip

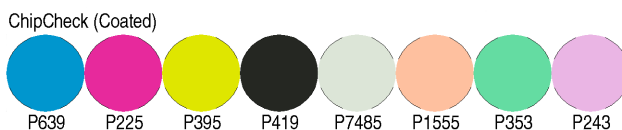


Figure 7 ChipCheck™ strip

ChipCheck™ is designed to allow very rapid and easy validation that a proofer has been correctly configured without requiring the use of instruments. It will identify whether an error has been introduced by, for example, the wrong media selection in the RIP interface, or whether the required calibration has not been performed. It can also quickly check whether a stored proof has aged enough to alter the colors significantly.

To read the strip, compare chips from a valid Pantone Coated swatch book with the patches in the color bar under appropriately controlled lighting (typically D50).

For even faster and easier checking of proofs, build a strip of Pantone chips in the correct order to compare with the patches.

2.8 Process step wedges

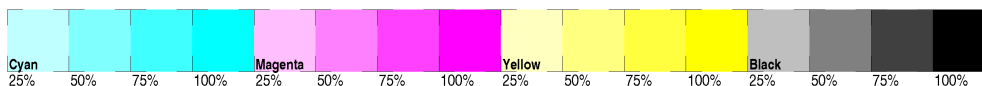


Figure 8 Process step wedges

The process step wedges allow you to measure the process colors at various increments. The increments used depend on the space available.

2.9 Progressives strip

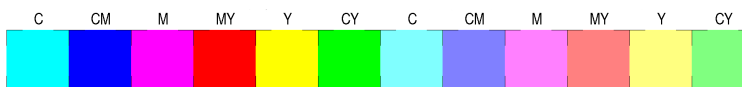


Figure 9 Progressives strip

The progressives strip allow you to measure color combinations. Each patch has a label above it indicating the colors used in the patch, for example, **CM** is a patch containing Cyan and Magenta. The percentage of each color varies, according to the space available. For example, the first six patches in the strip in Figure 9 contain 100% of each named color, and the last six patches contain 50% of each named color.

2.10 Neutrals strip

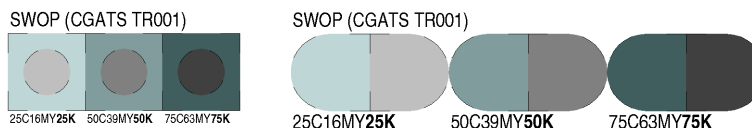


Figure 10 Neutrals strip

The neutrals strip allows you to test the neutral grays produced by your job settings. The neutral patches compare CMY combinations with plain Black, and use values from a variety of standardized printing conditions, such as SWOP and ISO 12647-2. The appearance of the neutrals strip varies depending on the space available.

Combined with ChipCheck™ (see Section 2.7), this provides a very rapid method of checking the configuration of the proofing device. If the CMY combinations do not match the K tints you may have selected the wrong media in the RIP, or you may need to recalibrate the printer.

2.11 Company logo



Figure 11 Company logo

The company logo always appears on the control strip and represents the distributor of the Harlequin RIP.

Note: The GGS logo may be replaced with that of the OEM partner through whom the RIP was sold (see Section 6.1).

2.12 Job name icon



Figure 12 Job name icon

The job name icon precedes the job name.

2.13 Job style icon



Figure 13 Job style icon

The job style icons indicate the separations, screening and color **Style** used for the job, as specified in the page setup.

The first icon in Figure 13 indicates a composite color job; the second icon indicates an unrecombined pre-separated job, and the third icon indicates a recombined, pre-separated job (monochrome jobs will be marked as composite).

2.14 Page number icon



Figure 14 Page number icon

The page number icon precedes the page number. Note that the page number is the page number within the current file. If for example, you have printed to PostScript from your design application and chosen to print just pages 7 and 8, then they will be labelled as pages 1 and 2 on the proofs.

2.15 Job file name icon



Figure 15 Job file name icon

The job file name icon precedes the job file name.

2.16 File modification date icon



Figure 16 File modification date icon

The file modification date icon precedes the date and time at which the file was last modified. The file modification date will only be shown if it is recorded in the file.

Note: The brackets and slashes within the control strip delimit different parts of the strip. The date in the first set of brackets is the file modification date (if available), and the date in the second set of brackets is the print date.

2.17 Print date icon



Figure 17 Print date icon

The print date icon precedes the print date and time.

Note: The brackets and slashes within the control strip delimit different parts of the strip. The date in the first set of brackets is the file modification date (if available), and the date in the second set of brackets is the print date.

2.18 Scale icon



Figure 18 Scale icon

The scale icon precedes details of the scale factor, for example, **50.0%**.

2.19 Clipped icon

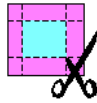


Figure 19 Clipped icon

The clipped icon is a warning that not all of the 'page' of the job may be shown. This may be due to the fact that the non-printing margins of the output device have not been accounted for. See Section 4.2 for more details.

2.20 File creator icon



Figure 20 File creator icon

The file creator icon precedes the name of the person and/or machine that created the PostScript or PDF file. This information is only displayed if it is recorded in the file.

2.21 Output device icon

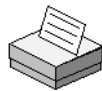


Figure 21 Output device icon

The output device icon precedes the name of the output device, for example, **TIFF**.

2.22 Page setup name icon

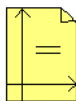


Figure 22 Page setup name icon

The page setup name icon precedes the page setup name.

2.23 Color setup name icon



Figure 23 Color setup name icon

The color setup name icon precedes the name of the color setup. If the default color setup is being used, then the text **(No Color Management)** is displayed.

2.24 Screening icon



Figure 24 Screening icon

The screening icon precedes details of the type of screening used, for example, **HDS Fine**.

2.25 Resolution icon



Figure 25 Resolution icon

The resolution icon precedes the resolution details, for example, **300.0 dpi**.

2.26 Anti-alias factor icon



Figure 26 Anti-alias icon

The anti-alias icon precedes the details of the anti-alias factor, for example, **3x3**. The **Anti-Aliasing** option is available in the Configuration dialog box of various plugins, such as the TIFF plugin.

2.27 Serial number icon



Figure 27 Serial number icon

The serial number icon precedes the Harlequin RIP serial number details. This allows you to identify the Harlequin RIP that produced the proof.

3 Known issues

The following shortcomings of the control strip are known and may be addressed in a future release:

- All text is in Single byte fonts, and mainly in ISO Latin1 Encoding. It is therefore suitable for most Latin languages, but not for localization into languages using other scripts.
- The Job name and Job file name values are assumed to be encoded in ISO Latin1. Strings that do not actually conform to that encoding will be displayed as garbage. This includes Japanese file and job names in Shift-JIS or Unicode encoding.
- Adding a Left Margin to the Page Setup causes the logo on the right-hand edge to be clipped by the same value.

4 Configuration

4.1 Page image positioning

The page image will normally be placed in the lower left corner of the imageable area of the printer (after allowance for the control strip). It can be centered in the imageable area in either dimension using the **Center page on Media Width/Length** check boxes in the Page Layout dialog box. These options will not move the control strip, which will remain along one side of the sheet or roll.

4.2 Margins file

In some cases, the following warning may be displayed in the RIP Monitor window:

```
%%[ WARNING: Control Strip: no margins file found, output may be
clipped ]%%
```

This means that some of the output may be positioned in the non-imageable areas of the output device. To prevent this, some plugins are provided with a margins file that defines the non-printing margins of a device. See Section 5.2 for further details on creating such a margins file.

4.3 Other configuration

A number of other configuration items are included. These can be adjusted by editing the **ControlStrip** file in **SW/Config**. Comments are included to assist with this.

Crop marks, oversize page handling (reducing to fit or clipping), and whether bounding box comments in EPS files should be acted on are all controlled using the standard **HqnImpose2** keys. See the Harlequin RIP Extensions manual for more details.

The placement of the control strip is set by defining the elements in **ControlStrategyList**. These default to **/LongMaxScaleTopLeft** for sheet-fed

devices, **/Bottom** for roll-fed ones, and **/LongBottomLeft** when media saving is turned on. The options are:

/Left Place the control strip on the left side of the sheet/roll.
/Right, **/Top** and **/Bottom** are similar.

/LongTopLeft Place the control strip on the longer of the top or left side of the sheet or roll. **/LongTopRight**, **/LongBottomLeft** and **/LongBottomRight** are similar.

/ShortTopLeft Place the control strip on the shorter of the top or left side of the sheet or roll. **/ShortTopRight**, **/ShortBottomLeft** and **/ShortBottomRight** are similar.

/MaxSpaceTopLeft Place the control strip on the top or left of the sheet, whichever has more space left after placing the page image unscaled. **/MaxSpaceTopRight**, **/MaxSpaceBottomLeft** and **/MaxSpaceBottomRight** are similar.

/MaxScaleTopLeft Place the control strip on the top or left of the sheet, whichever leads to the minimum reduction of the page size if it is to be scaled down to fit. **/MaxScaleTopRight**, **/MaxScaleBottomLeft** and **/MaxScaleBottomRight** are similar.

/LongMaxScaleTopLeft Place the control strip on the top or left of the sheet, whichever leads to the minimum reduction of the page size if it is to be scaled down to fit. If the page and control strip fit without clipping or reduction, the longer of the two will be selected. **/LongMaxScaleTopRight**, **/LongMaxScaleBottomLeft** and **/LongMaxScaleBottomRight** are similar.

Exactly which control bar design will be used is defined by the elements in **ControlBarSelectionList**, the value of each element must be an array of the names of control strips (not documented here, but see files in **SW/Usr/Color-Bars/Components** for examples). Each entry in the array will be examined in turn to determine whether it should be used—that determination will be made based on the amount of space available after placing the page image on the media.

Color bars with 4, 2 and 1 row of color patches are supplied. By default the 2-row bar will be used on a roll-fed device, the largest that will fit will be used on a sheet-fed device, and the 1-row bar will be used when media saving is in use.

The length of the control strip will be set either by the media dimensions or by the size of the page being imaged, depending on the value of **BarFillsSheet** or **BarFillsRoll**. If the relevant one for the current device is set to **true** then the control strip will fill the media, otherwise it will be set by the page size. The length will always be set to the page size when media saving is in use.

If the page being processed is larger than the imageable area of the printer, the behavior can be controlled by setting the value of **OversizeStrategy**:

- /CropCenter** The outer edges of the page will be clipped off and the middle of the page will be shown. This is the default behavior.
- /ScaleToFit** The page will be scaled down to fit.
- /BottomLeft** The lower left corner of the page will be placed at the lower left corner of the imageable area; the top and/or right of the page will be clipped off. **/TopLeft** is similar.
- /AbortOversize** The job will be aborted without printing the page.

If the output is scaled or clipped, that information will be displayed in the text slug line.

When proofing PDF pages, any bounding boxes in the file will be marked on the proof. The value of **PDFBoxes** may be used to control the display:

- /None** No bounding boxes will be marked.

/Crops	Small marks outside the MediaBox will be used for all boxes (default).
/Box	The outline of each bounding box will be drawn in.
/Full	Both Crops and Box will be drawn.

Bounding boxes will be marked as **MB**=MediaBox, **TB**=TrimBox, **BB**=BleedBox, **AB**=ArtBox, **CB**=CropBox.

Two keys define the space to be used for marks around the page. **PDFBoxSpace** is used for PDF files, and **NoPDFBoxSpace** for other file types. The additional space for PDFs is to allow bounding box labels to be included.

5 Interaction with specific output devices

5.1 Selected media size

The control strip code assumes that the default page size selected at the beginning of processing a job indicates the size of the media onto which the job will be printed. When using the control strips with plugins for proofing devices, we recommend that you take advantage of the **D_GETMEDIASIZE** selector in the plugin interface. This will provide a selectable list of the supported media sizes for a device, in the Page Layout dialog box.

5.2 Non-printing margins

By default, the control strip will run right to the edges of the media being printed on. Most color proofing devices have margins around the media that they cannot print on. Some of the control strip will therefore be clipped. You can supply a margins file that defines the non-printing margins for your plugin. If present, the control strip will be moved in so that it all prints correctly. The same margins will also be used to position the page image itself to avoid clipping by those margins.

A plugin may be written to read supported media sizes from this margins file for use in responding to the **D_GETMEDIASIZE** selector. The margins file should be called **MediaSizes**, and be supplied in the **Misc** sub-directory of a plugin's directory.

An example margins file is supplied with all ProofReady plugins included in the distributions. For example the Epson VSD plugin is supplied with a file called **Medsize**, that is located in the **EpsonVSD/Misc** folder. Once you have installed the plugin, this file is renamed to **MediaSizes** and can be found in the **SW/Devices/EpsonVSD/Misc** folder.

The margins file must contain the name **/MediaSizes**, followed by a single dictionary. That dictionary contains the following sub-dictionaries:

- | | |
|-------------------|--|
| MediaNames | One sub-dictionary entry should be included for every media size supported by any device type provided by the plugin. These sub-dictionaries define a name that may be displayed to the user (/UserName) and the physical dimensions of the medium (/Size). |
| MarginSets | One array entry should be included for every variant of non-printing margin sizes that results from a legal combination of media size and device type. The names used are entirely arbitrary; the names Roll and Sheet used in the Epson VSD example file are simply for ease of use and have no special meaning. Each array should contain four numerical values, interpreted as the non-printing margins for the left, bottom, right, and top of the media when viewed with the first fast-scan line running left to right across the top of the raster. All values are in points (1/72"). |

DeviceMargins One sub-dictionary entry should be included for each device type supported by the plugin, plus a **Default** entry. Any device type where the non-printing margins for all supported media match those defined in the **Default** entry may be omitted.

Each sub-dictionary should contain an entry for every media size supported by the device type. The media size name used should exactly match an entry in the **MediaNames** dictionary, and the value should exactly match an entry in the **MarginSets** dictionary.

The dictionary should also include either a **Default** entry, or both a **DefaultRoll** and a **DefaultSheet** entry. Any media size that uses exactly the same non-printing margins as the **Default** entry, or as the appropriate **DefaultRoll** or **DefaultSheet** entry, may be omitted.

See the annotated example file supplied with the Epson VSD plugin for more information.

6 Customization

6.1 Replacing the Global Graphics logo

The Global Graphics logo added at the right-hand end of every control strip may be replaced very easily with your own:

1. Select a variant of your company logo that is between one and four times as wide as it is tall. Other aspect ratios will work, but may not look as good.
2. Create an EPS file of the logo with no preview.
3. Save the file as **SW/Usr/ColorBars/Logo.eps**, replacing the file supplied with the Harlequin RIP.

The Harlequin at Heart logo at the left end of every control strip is not intended to be replaced.

6.2 Other customizations

The control strips constructed by the supplied code are intended to be relatively easily to customize to your own requirements.

The components used are all defined in files within the **SW/Usr/Color-Bars/Components** directory, and are commented to a greater or lesser degree.

If you wish to make specific changes please submit your requirements to the Harlequin RIP support team in the usual way so that we are aware of your needs and can take them into account in a future release version of the code.

Change history		
v 1.0	26.06.2003	New document, supplied with Eclipse Release SP2.
v1.1	17.11.2003	Updated for Eclipse Release SP3.
v1.2	25.01.2006	Correct path in section 6.2. Updated copyright and logos.
v1.3	02.06.2011	Remove Enfocuss status check.



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