iColor® ProRIP Software Instruction Manual

For Windows PC only (Windows 7 / 8 / 10 only)

Software Version 10.02.17, Build 8534

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Why use the iColor® ProRIP?

Use the iColor® ProRIP software to print white as an underprint or overprint in one pass. This professional version is designed for higher volume printing with an all new interface. Design files can be printed directly from your favorite graphics program, as well as imported directly into iColor® ProRIP.

The iColor® ProRIP software allows the user to control the spot white channel feature. Three cartridge configurations are available: Spot color overprinting, where white is needed as a top color for textiles; Spot color underprinting for printing on dark or transparent media where white is needed as a background color and standard CMYK printing where a spot color is not needed. No need to create additional graphics with different color configurations – the software does it all – and in one pass! Enhance the brilliance of any graphic with white behind color!

Print and Transfer onto:

Natural and synthetic fabrics
Dark and light fabrics
Beer, wine and juice bottles
White, colored or clear labels
Leather
Dark and light paper stock
Mugs and ceramics
Banners
Wood
Metal
Acrylic
And much m

Create unique items - The possibilities are endless!

T-shirts and sweatshirts
Aprons
Dark restaurant menus with fluorescent white print
Corporate logo shirts
Mouse pads
Sports apparel
Jackets
Tote bags
Signs with colored, white or fluorescent toner
Labels
Tattoos

The most important point of the iColor® ProRIP software is that it allows colors to be put down in layers. Regular printer drivers only concern themselves with what the eye sees on the top layer, the RIP allows you to separately control each layer, thus giving you the ability to control not only what you see, but what is behind that top layer (typically the white layer). The iColor® ProRIP gives you the unique ability to use one machine to print images with white as an underprint or an overprint. You can now print vibrant colors on clear or dark media regardless of the background to which it is applied, where the white is put down first and the colors afterwards.

The iColor® ProRIP 'Color Mapping' feature also allows for reverse printing when printing and transferring to garments where white is put down last. This is the only way to achieve white underprint and overprint in one pass, and you will not find another software/printer package on the market today that can do all of this. The software also allows for color manipulation and removal, rasterization, professional layout tools and direct printing from your favorite graphics program. It ships standard with the iColor® 550 and as an upgrade for the iColor® 500 and 600.

To accomplish these two features, UniNet has created three configurations refered to as 'Print Queues' to suit any printing project (pictures below are for the iColor 550, configuration for other printers may be different):

The **CMYK Queue** is for standard print jobs that do not require a spot color. This queue assumes that the media being printed on is white. Use this Queue for printing on banner media, window cling, Presto! Media and for Dye Sublimation prints. Note that for Dye Sublimation, there is an ICC Profile that is automatically loaded when this is selected.

The **Overprint Queue** is for printing white as an overprint in one pass for reverse printing (typically used for transfer printing). For the iColor® 550, the white cartridge is placed in the first slot of the printer and the cyan cartridge is placed in the last slot of the printer. For the iColor® 500 and 600, the white cartridge is placed in the last slot of the printer and the cyan cartridge is placed in the first slot of the printer. This configuration is for textile and hard surface transfer printing, where white is needed as an overprint, applied on top of all the other colors. When the image is pressed to the garment, the transfer sheet is flipped over and the white becomes the underprint. This is especially important where images have half tones and 100% transfer of the

image can be problematic, or when there is white in the image that needs to show through on dark colored garments.

The **Underprint Queue** is for right side printing and allows for printing white as an underprint in one pass (typically used for transparencies, clear labels, dark media, UniNet Aqua Clear media, or anything that is not heat pressed). For the iColor® 550, the white cartridge is placed in the last slot of the printer and the cyan cartridge is placed in the first slot of the printer. For the iColor® 500 and 600, the white cartridge is placed in the first slot of the printer and the cyan cartridge is placed in the last slot of the printer. This is configured for 'Right Side Printing' where the white is printed first, as an underprint, all in one pass. For both Underprint and Overprint configuration, the RIP converts pure K colors to CMY composite black, and puts in white, not only as a background color, but also in the image where white or page white is specified.

For the Overprint and Underprint configurations, the exclusive Color Mapping feature of the RIP overrides the basic driver of the printer and automatically sends the proper color to the proper channel.

Software Installation

- Make sure all other programs are closed and virus software is disabled.
- Install the included dongle into a free USB port on your PC.
- Navigate to the RIP setup folder on the dongle and right click the setup file and select 'Run as Administrator'.
- Run the Installation and follow the steps pictured below.
- NOTE: It is suggested to copy all of the installation files located on the USB drive to a folder on your computer for safe keeping and ease of installation.
- The iColor® ProRIP dongle must be installed at all times when installing or running the program.

1) Navigate to the RIP setup folder on the ProRIP dongle. Right click on the setup application file and 'Run as administrator'.

2) Select the language for installation and click 'OK'.
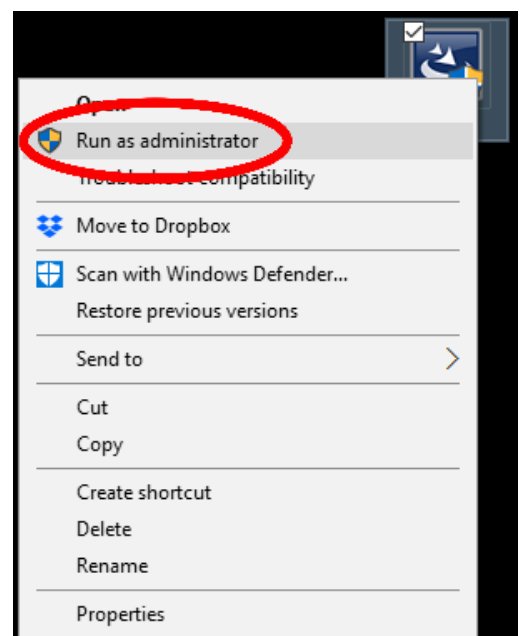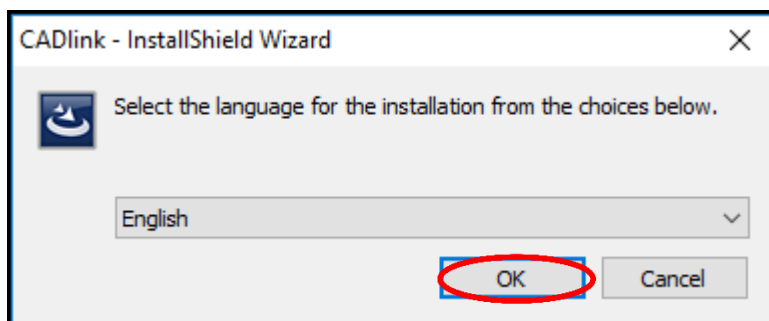
3) You will be prompted to insert the USB dongle before proceeding with the installation. Once inserted, click 'Next'.
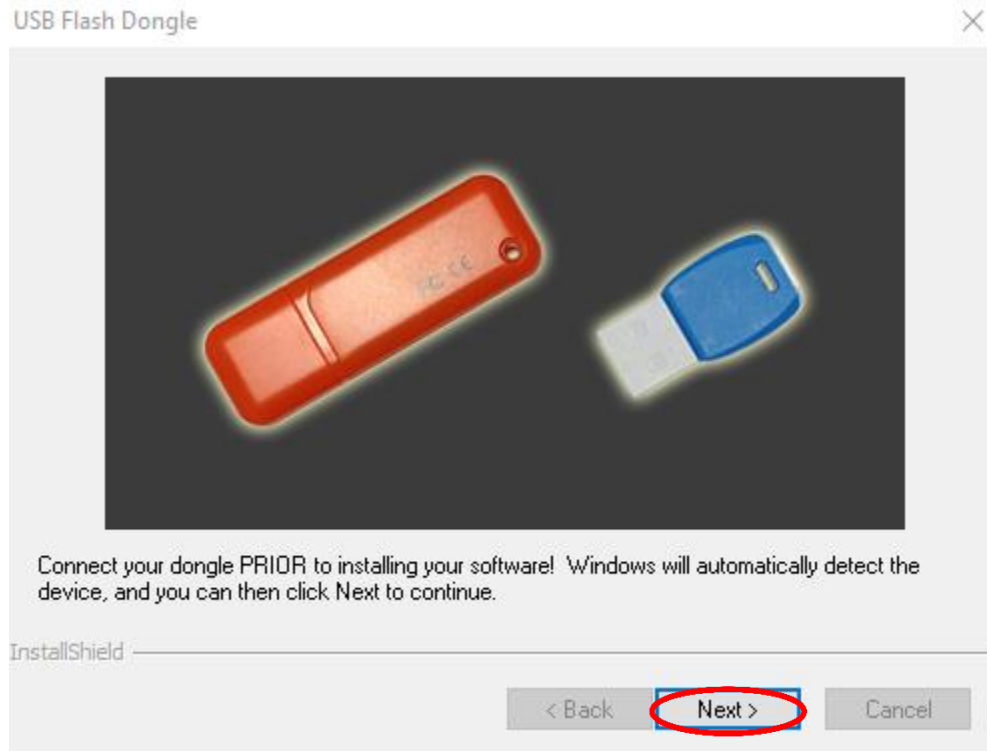
IMPORTANT: This USB dongle is your license key. Ensure that it is not lost or broken, as UniNet cannot replace it without a charge. You cannot use the software without it installed in your PC.

4) Select either the 32 or 64 bit application (dependent upon your version of windows). Accept the terms of the license agreement and click 'Next'.
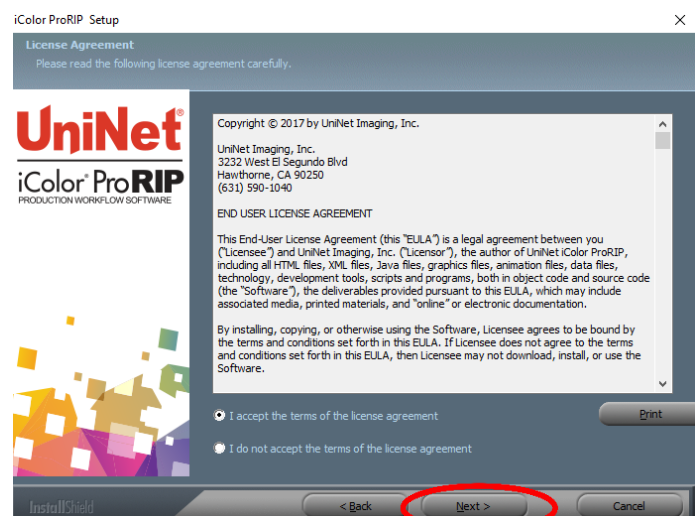
5) Choose 'Full install of iColor® ProRIP' and click 'Next'. Click 'Next' again to accept the installation folder.
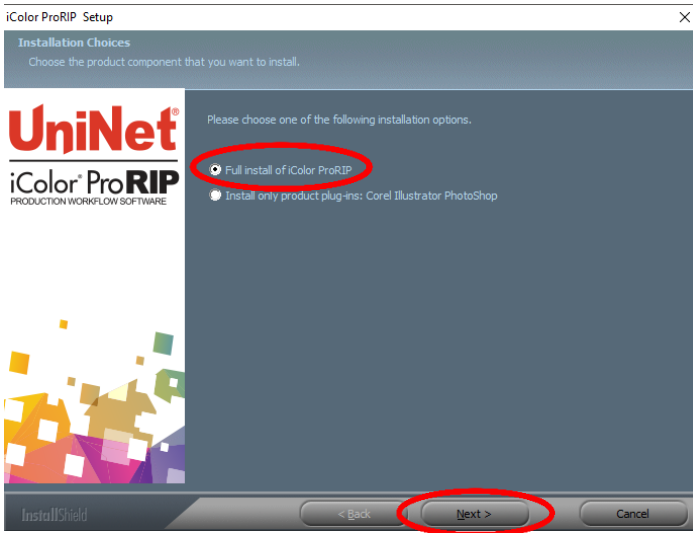
6) Click 'Next' to allow the creating of the iColor® ProRIP Program Folder and the installation will begin.
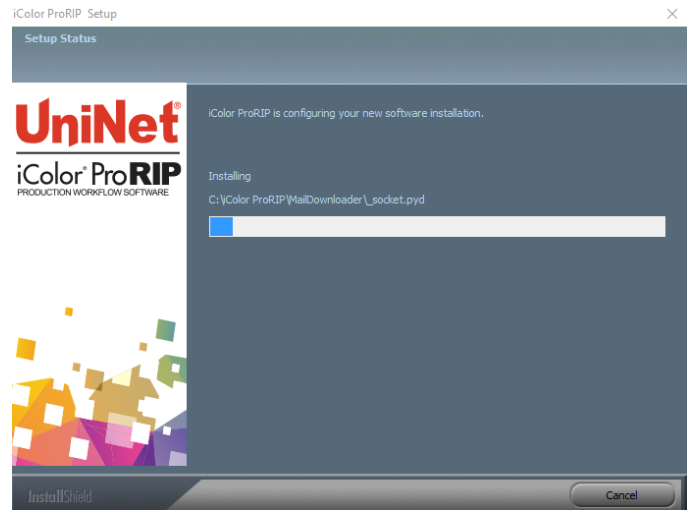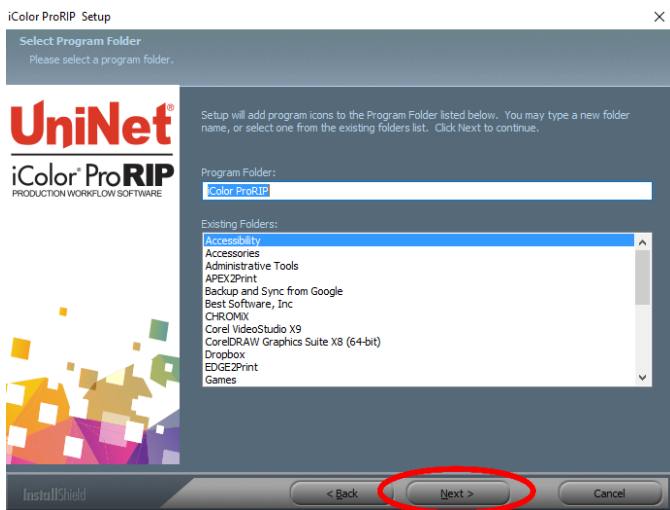
7) If not already installed, you will be prompted to install .NET Framework, which is a necessary component to the ProRIP software. Accept the license terms and click 'Install'. Once the InstallSheild Wizard is complete, click 'Finish'. This installation normally takes several minutes to complete.
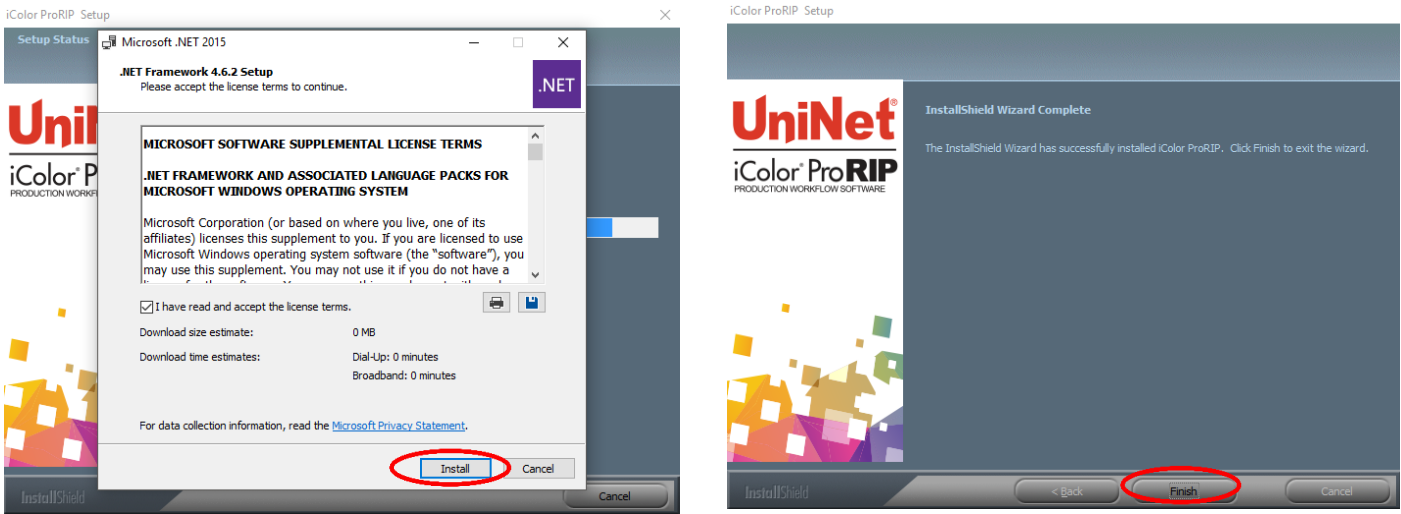
ProRIP First Time Setup

1) Be sure the iColor® ProRIP dongle is installed and you are connected to the internet. From the Windows Start menu, choose **All Programs >> iColor® ProRIP** or double click on the desktop icon that was created upon installation. Launch the program. Create a shortcut if desired for quicker access later. Confirm first time setup by setting your preferred unit of measure and decimal places. This can be changed later under **Tools >> Options**.
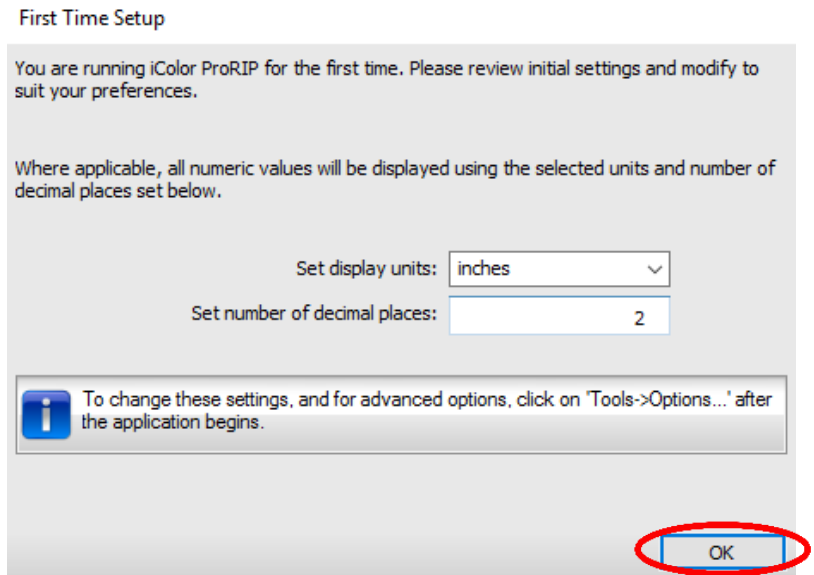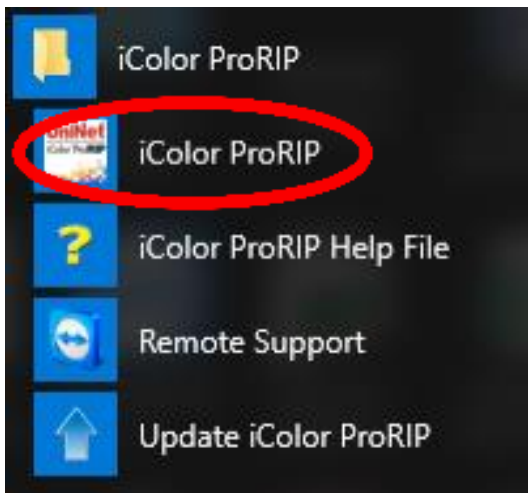
2) Once the ProRIP opens, the Queue Wizard will begin the installation of the support files for your iColor® printer. Click 'Next' and then 'Install Printer'.
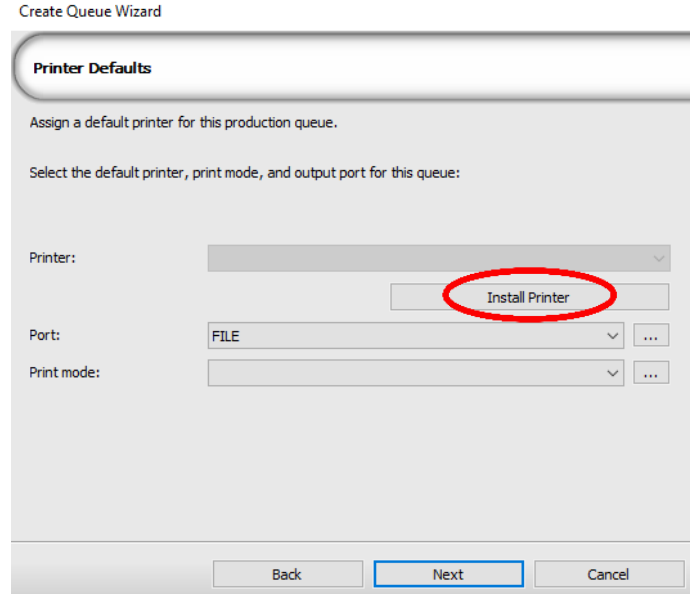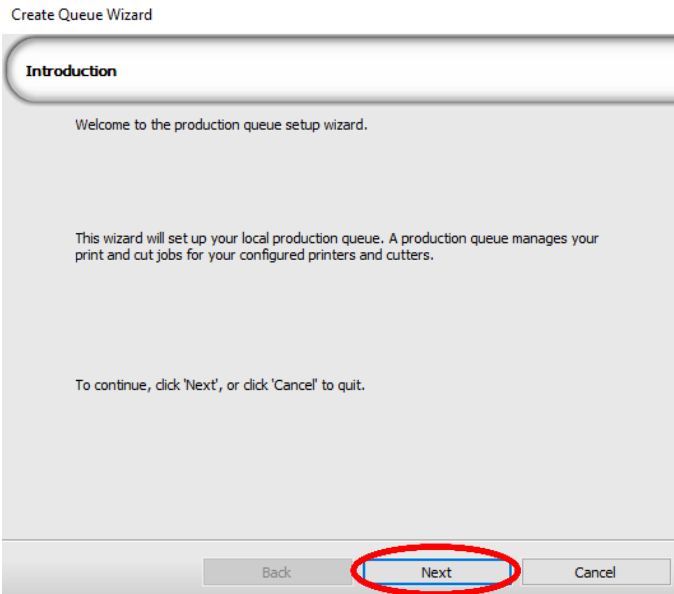
3) Select the appropriate printer from the support menu (in this case, we will choose the iColor® 550). Click 'OK'. Then click 'Next' to continue the installation. Note that you may have already installed the printer driver in windows. This installation is for RIP functionality only.
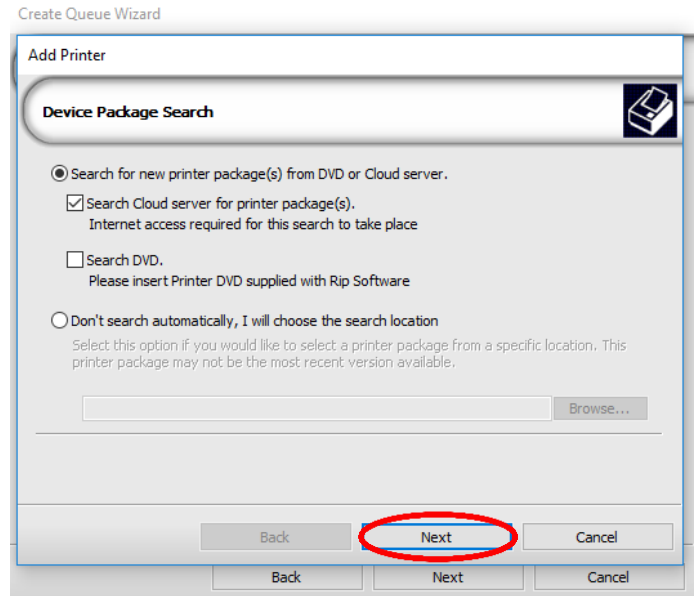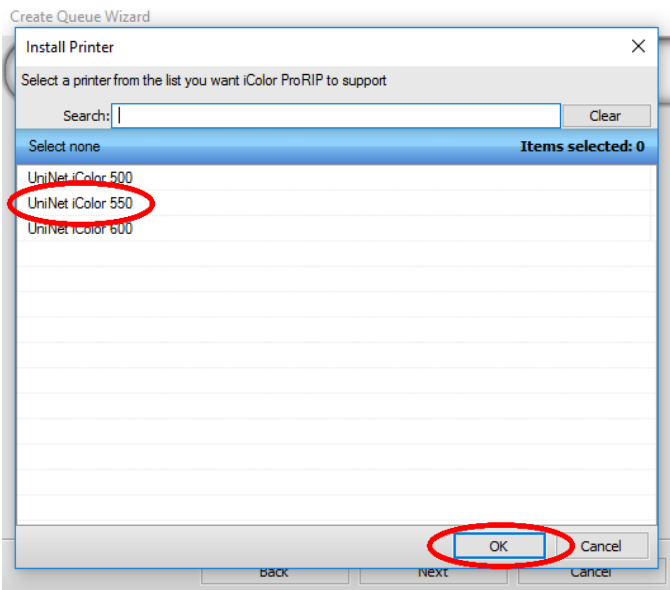
4) Click 'Finish' to complete the installation.
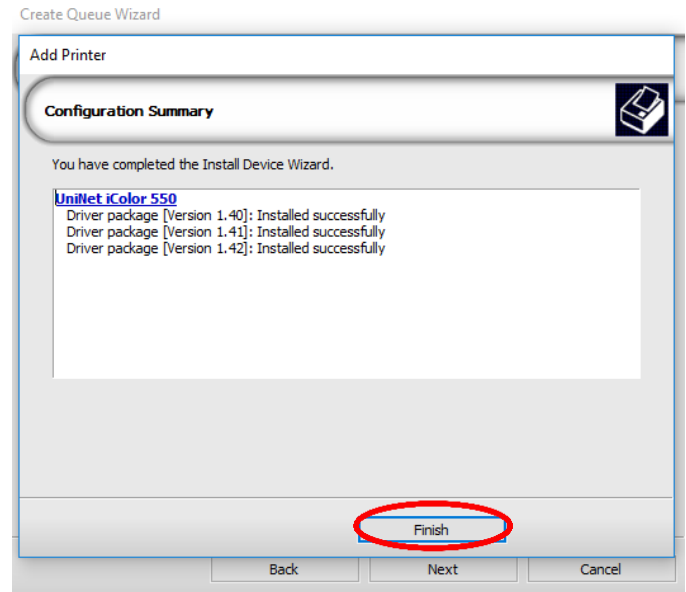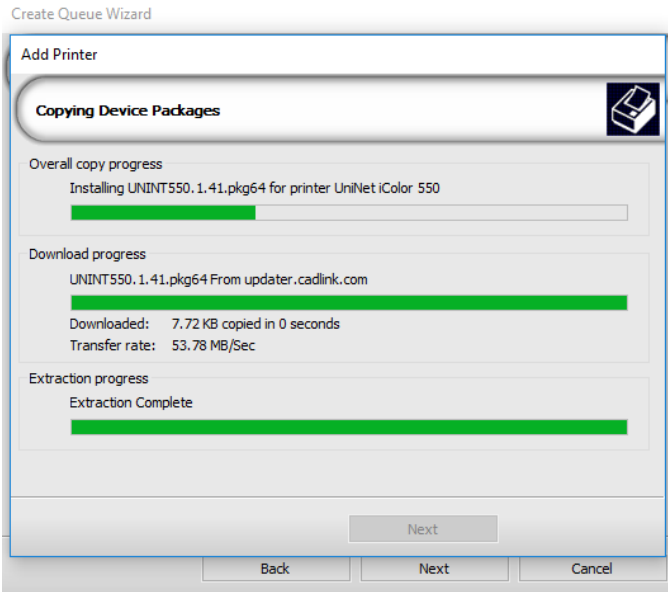
5) Click **Queue >> Manage Queues** to set up your printer for each of the preset queues.
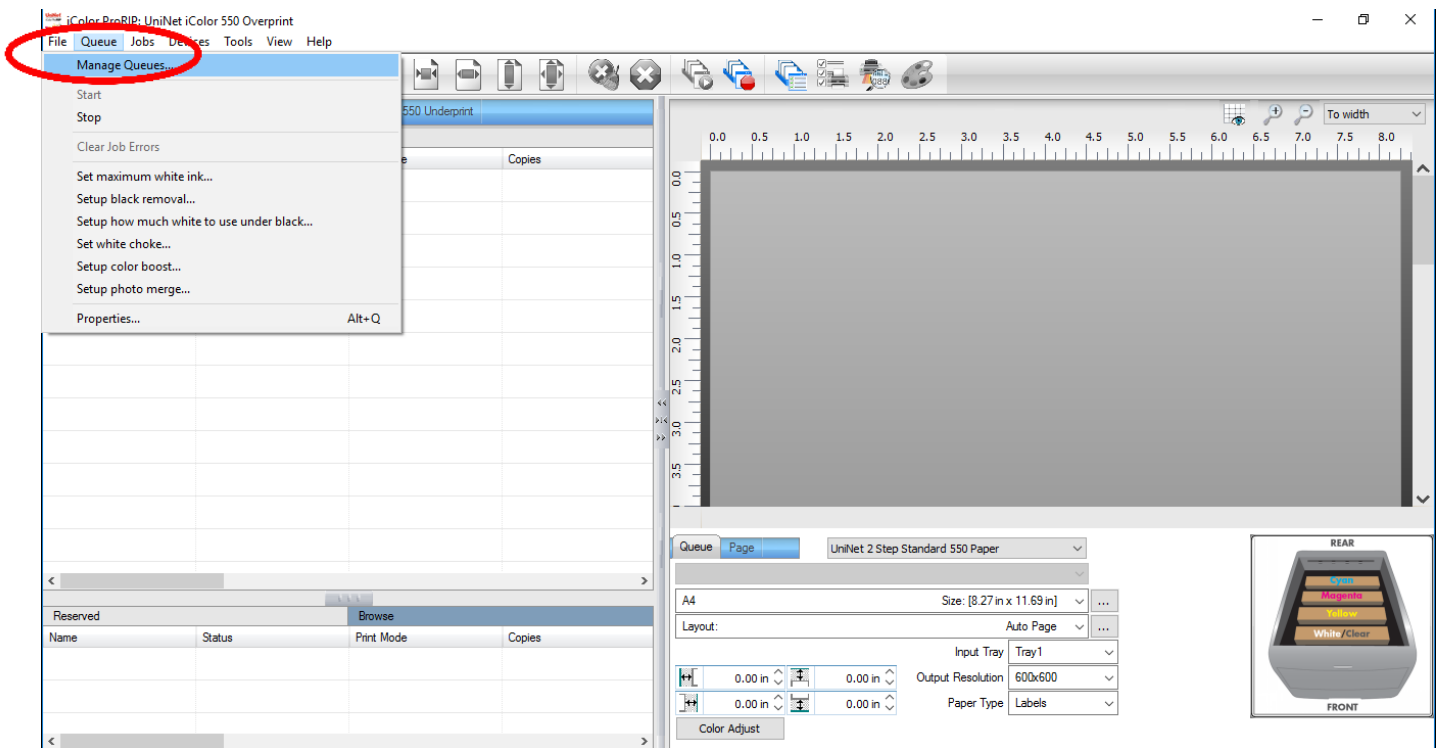
6) In the 'Port' drop down menu, chose the proper port. If connected via network (recommended), choose TCP/IP. If connected by USB, choose the printer as identified in the drop down. All other ports will update automatically, it is only necessary to do this for one queue.
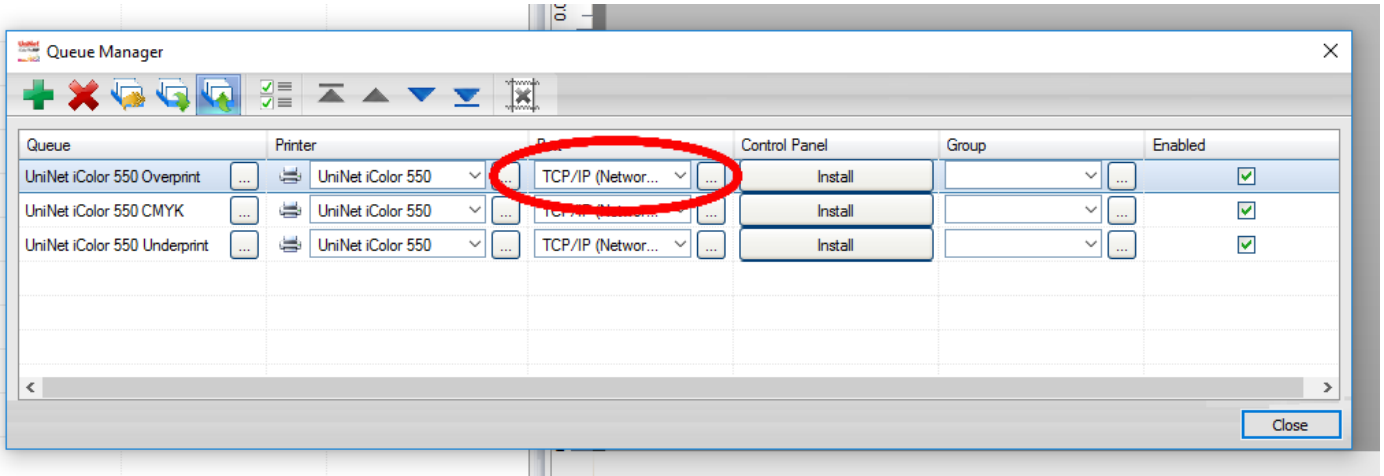
7) If connected via network, once TCP/IP is selected, the software will poll your network for available printers. Select the proper iColor® printer. Note that the IP address of the printer is displayed. Be sure to set a static IP address for your printer so that the IP address does not change later. If this happens, you will have to repeat this step.

Setting a static IP on the iColor 550:

On the LCD screen of the printer, **click User Tools>>System Settings>>Interface Settings>>Network**. Click Machine IPv4 Address twice, then you can manually add your desired IP address.
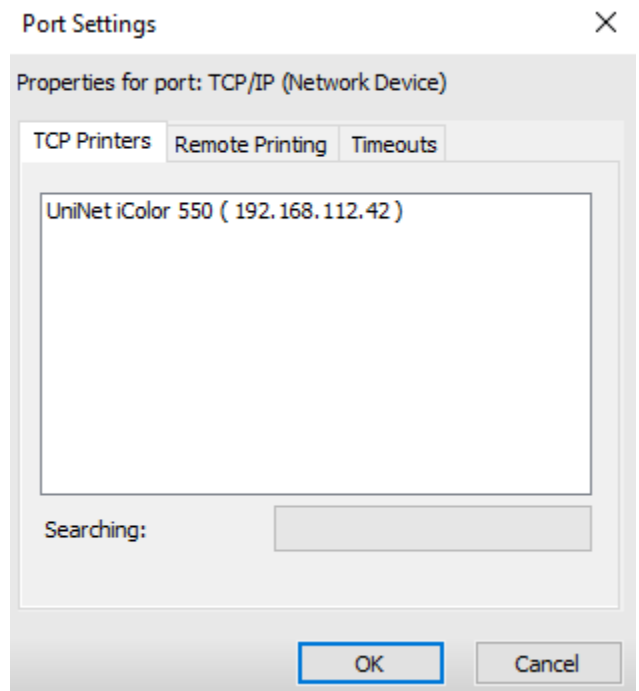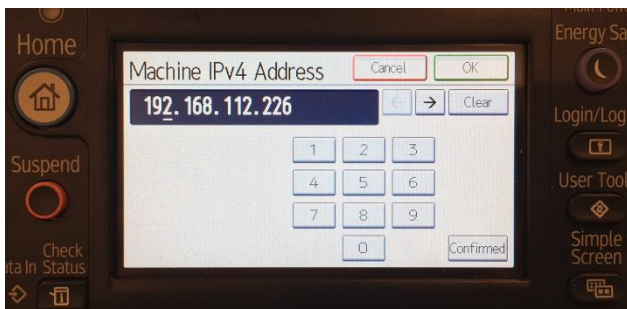
8) Select the proper Print Queue for your project. Then, select the Print Mode (otherwise known as media type) and verify the size of that media <u>before</u> importing your graphic.

Please note, the preview icon of the printer should match the physical configuration of the printer.

Print Queues

Print Mode
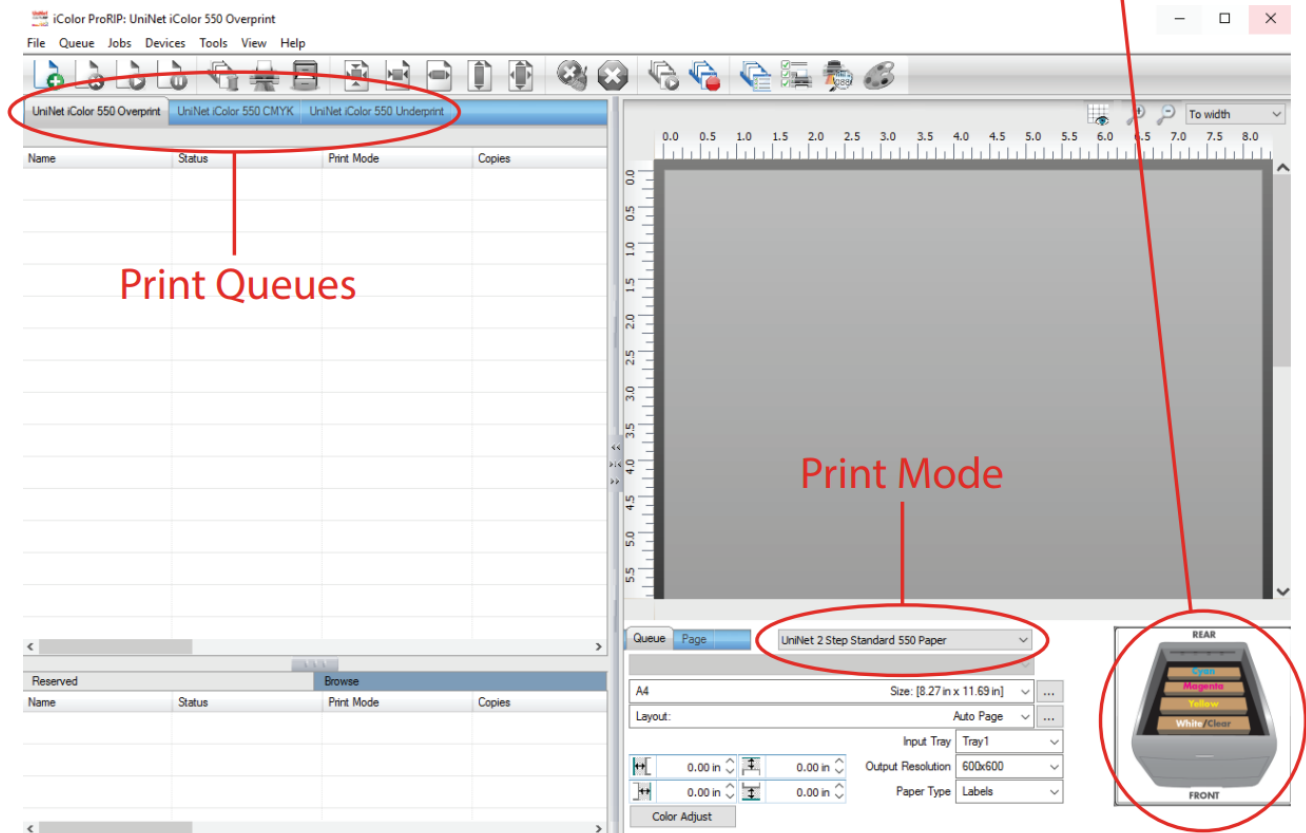
9) Import the desired graphic by clicking the 'green plus' icon and navigating to the proper folder. You can also import by clicking **File > Import File**, or simply dragging and dropping your file into the queue.
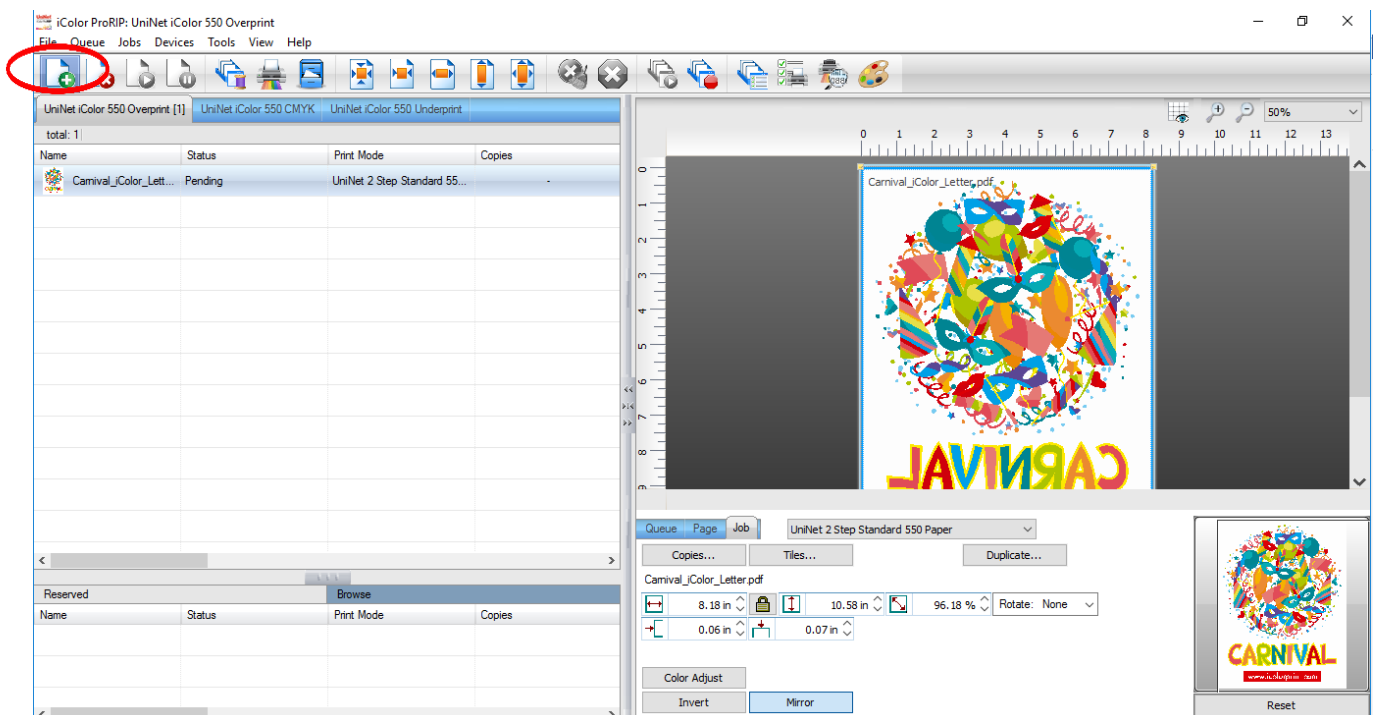
10) There are preloaded images that can used to print a test page. Click **Devices >> Print Test Page** to see the choices. It is suggested that you print a test page upon completion of the setup to confirm the printer has been properly installed. Use [Shift] and [Ctrl] to click multiple pages), and then click OK. More about the uses of each page can be found in the Help Topics file within the ProRIP program.
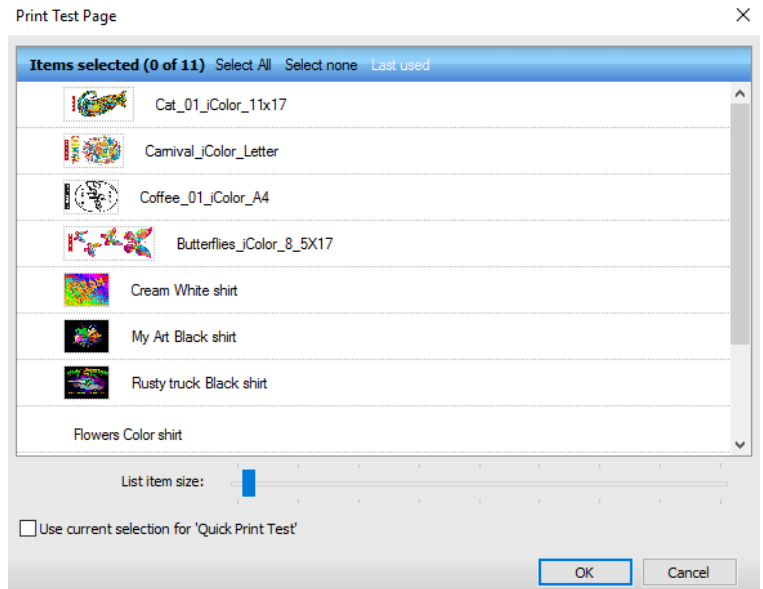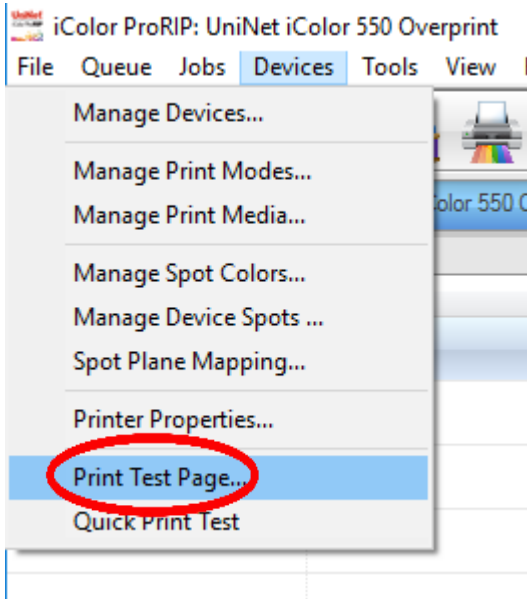
Using the ProRIP Software (Summary)

Once your image is loaded, take note of the preconfigured settings based relating to the media being used in the printer. The 'Queue' tab shows the size of the media that will be used, where to load the media into the printer and the paper type setting recommended. Each media type will contain this preconfigured data to make your printing experience as easy as possible. Overriding these settings could result in undesirable results.
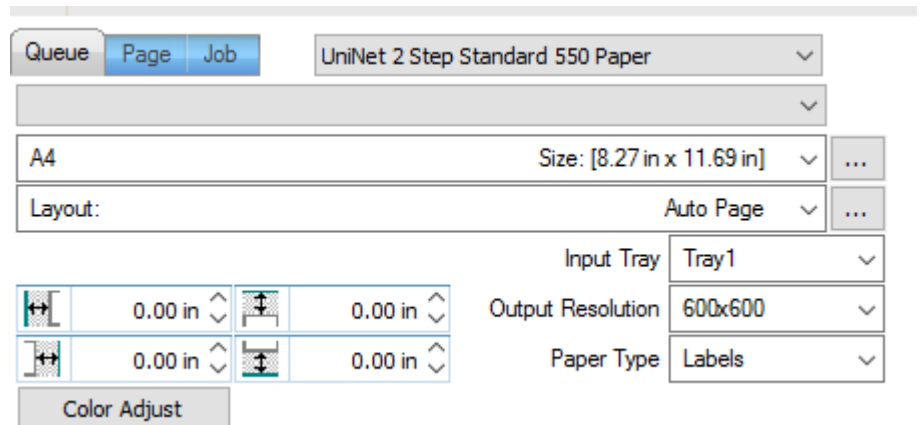
To alter the color settings, click on 'Color Adjust' and adjust as needed. 'Coverage %' represents the amount of white/clear toner overprint or underprint (depending on which queue is being used). The 'Use graphics transparency for dot size' option allows for rasterization of colors that fade into nothing and to retain partial transparency. It is suggested that this option is left on, as it will only apply itself where it's needed.
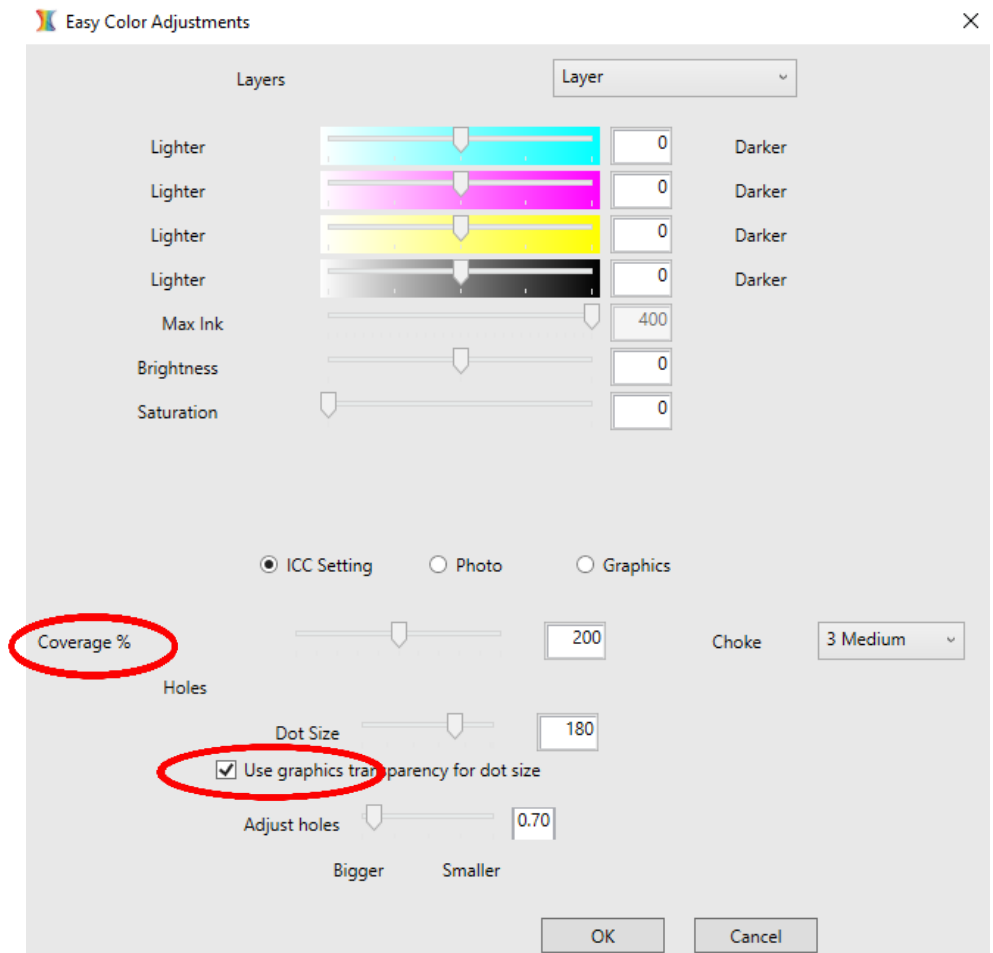
The 'Page' tab offers the ability to print multiple copies and nest images. You can also adjust the size of the image to fit your media here (and in the Queue tab).
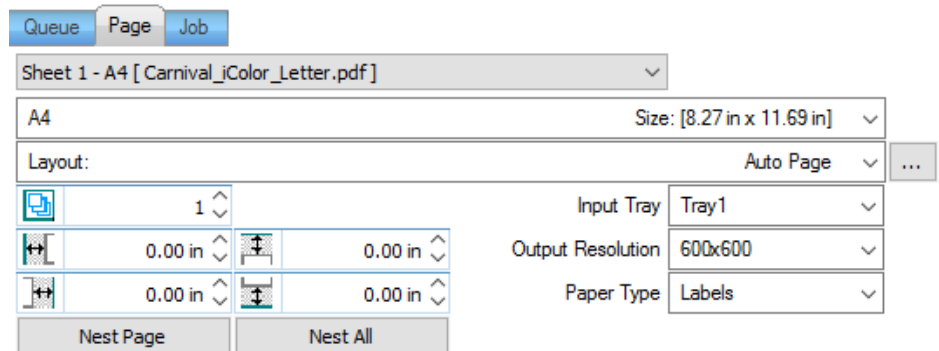
The 'Job' tab allows you to lock the proportions of your image to maintain the aspect ratio. Here you can also mirror, rotate and invert the image. Note that the mirror function is automatically on for any image loaded into the overprint queue.
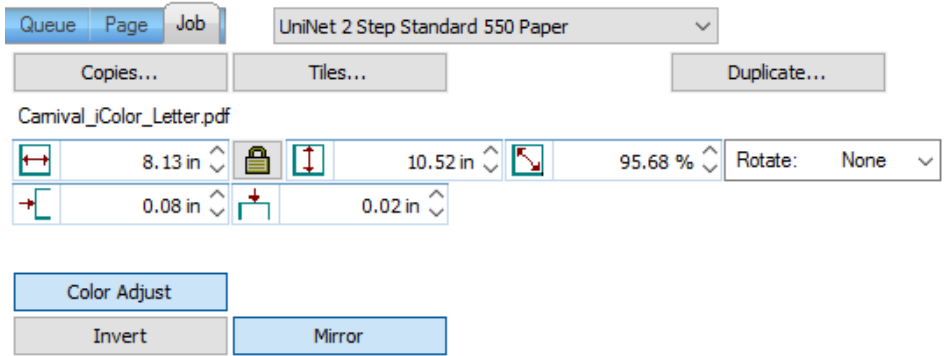
You can also adjust the size of any image by dragging and dropping the corner of the image in the preview pane. In this example, where we have a letter sized image placed on an A4 artboard, the red bar to the right of the image represents the portion of image that is outside the print margins. Be sure to resize to eliminate this bar before printing.
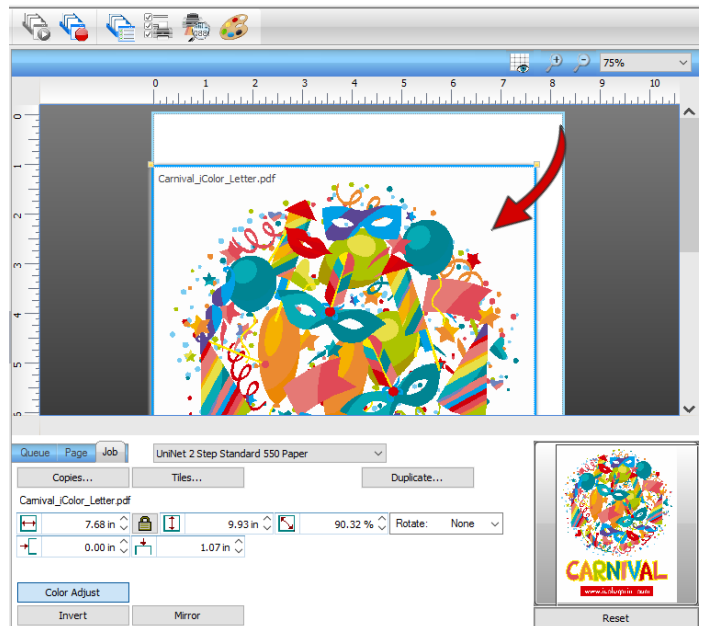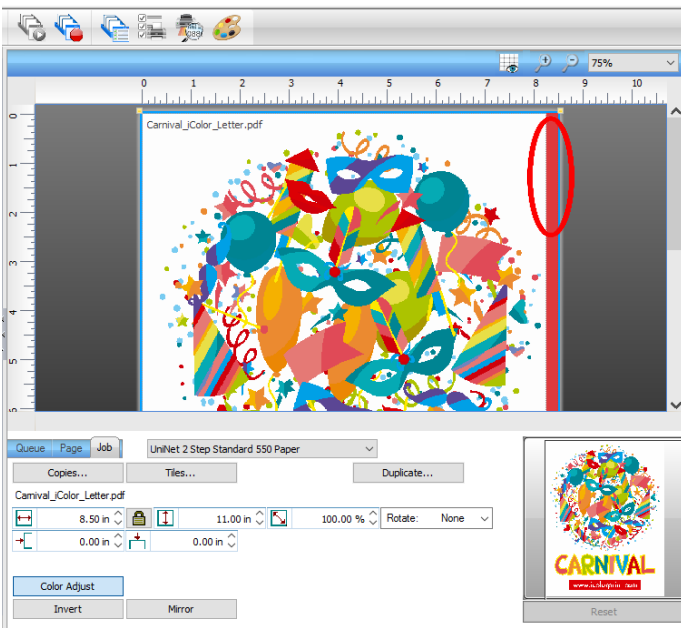
Adjustments can also be made by using these icons at the top of the screen.

When ready, click the 'Print' icon to print your graphic.
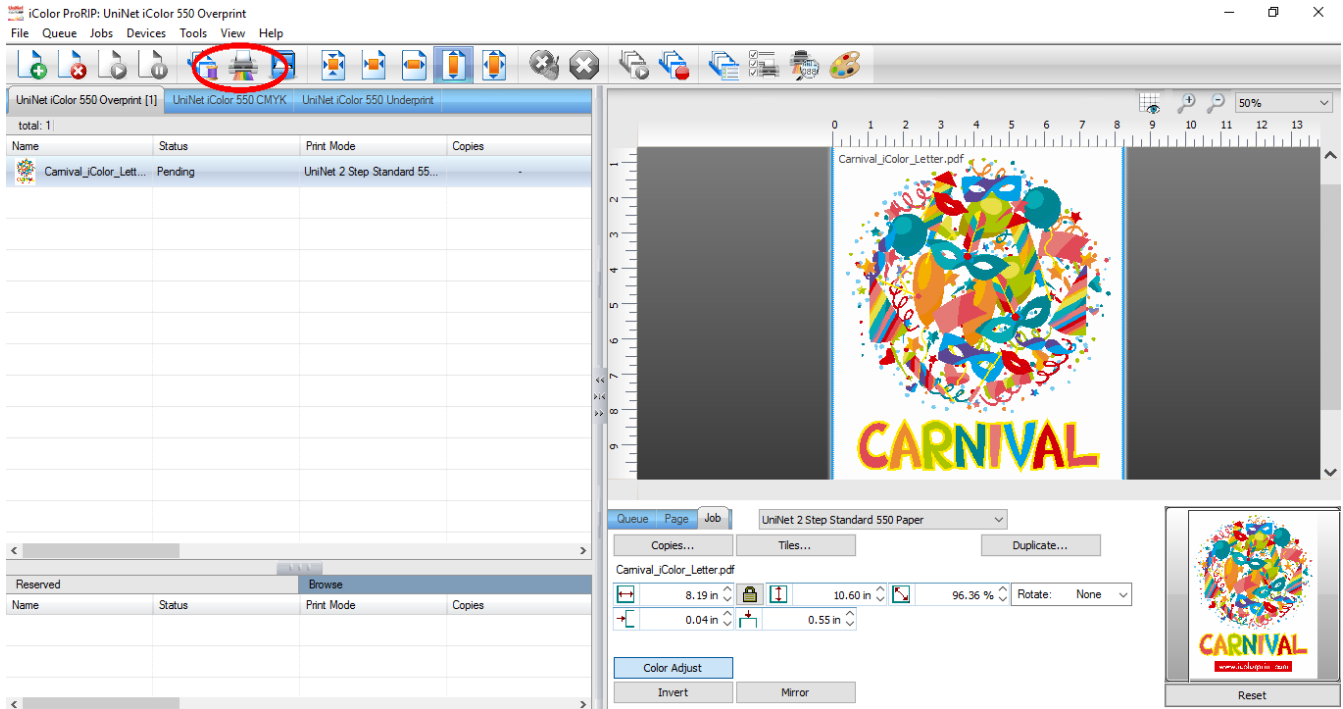
Once the print has completed, the job will be archived in the reserved area for 7 days. If you wish to reprint that job, drag and drop the job from the reserved section into the proper queue.
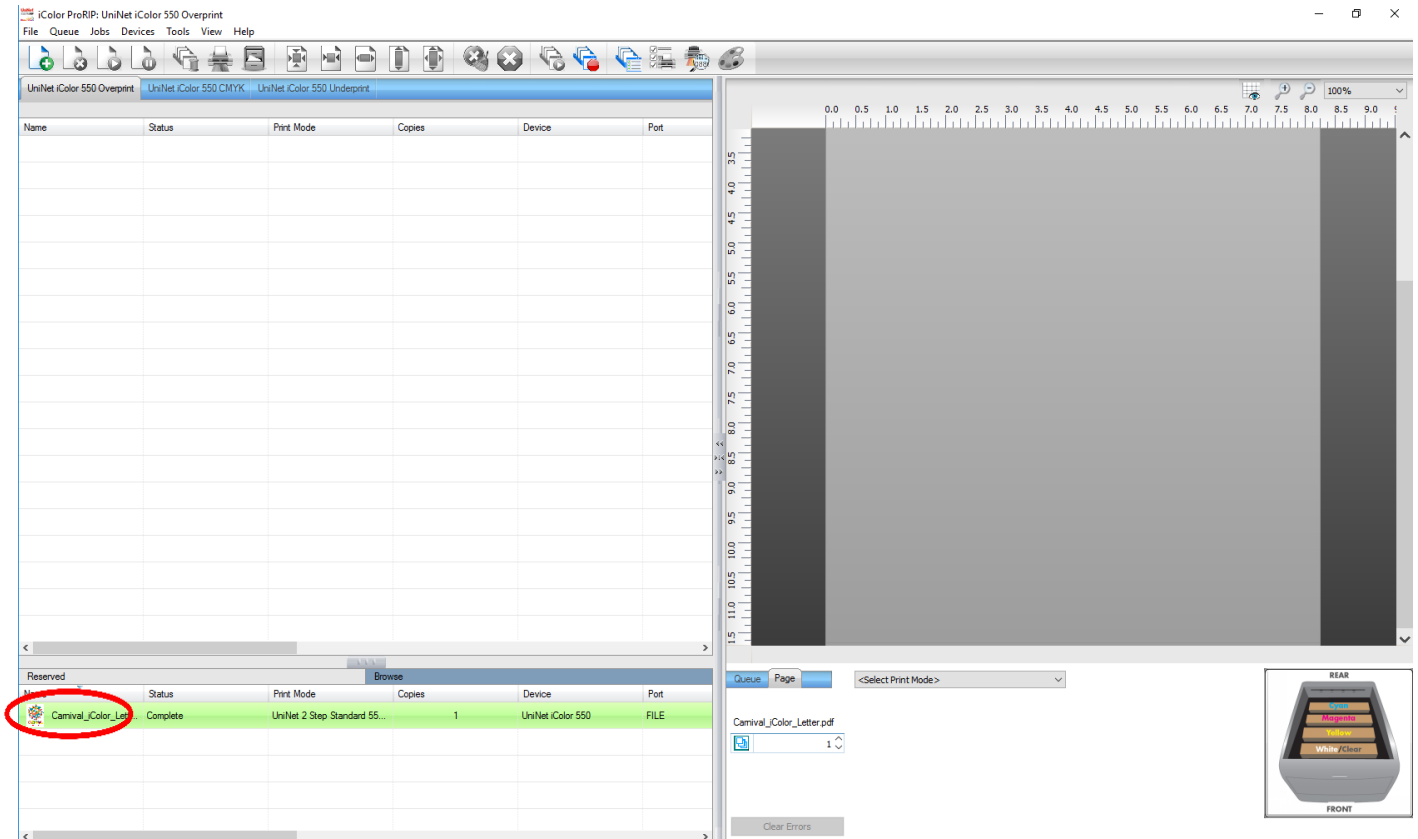
To lengthen the amount of time a job stays in reserve, click **Queue>>Properties**. Then click 'Job Reserve' and set the 'Auto Clean Reserve' time frame. Unclick to keep jobs in reserve forever.
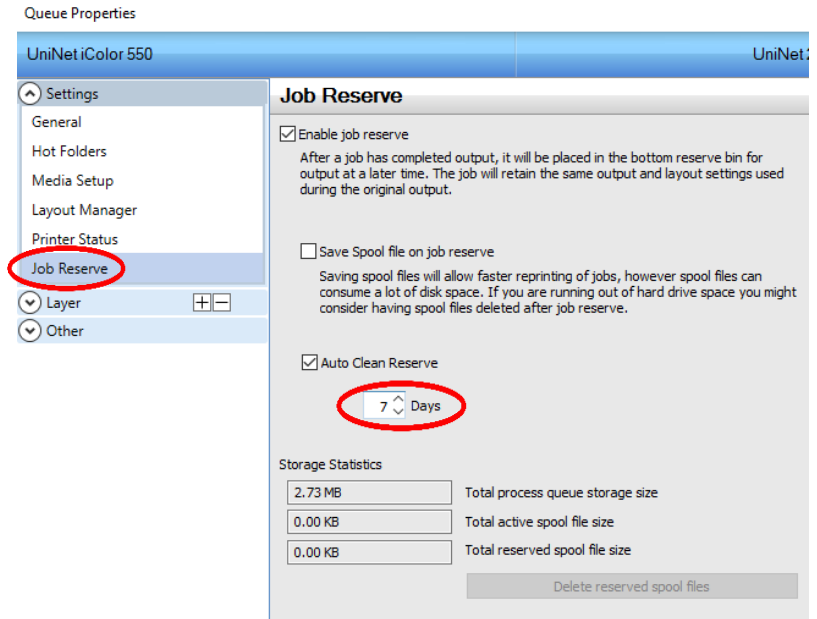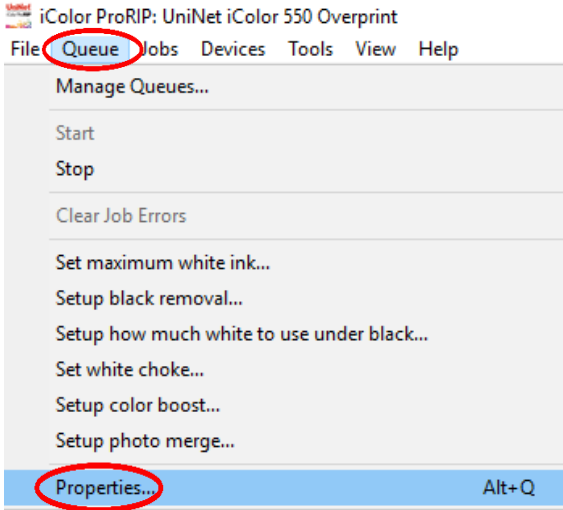
After a particular job has printed, it will be 'closed'. This means that it was rendered by the software so that the next time you print, the processing time will be minimal. If you need to make any changes to the print job before printing, you must 'open' the job.
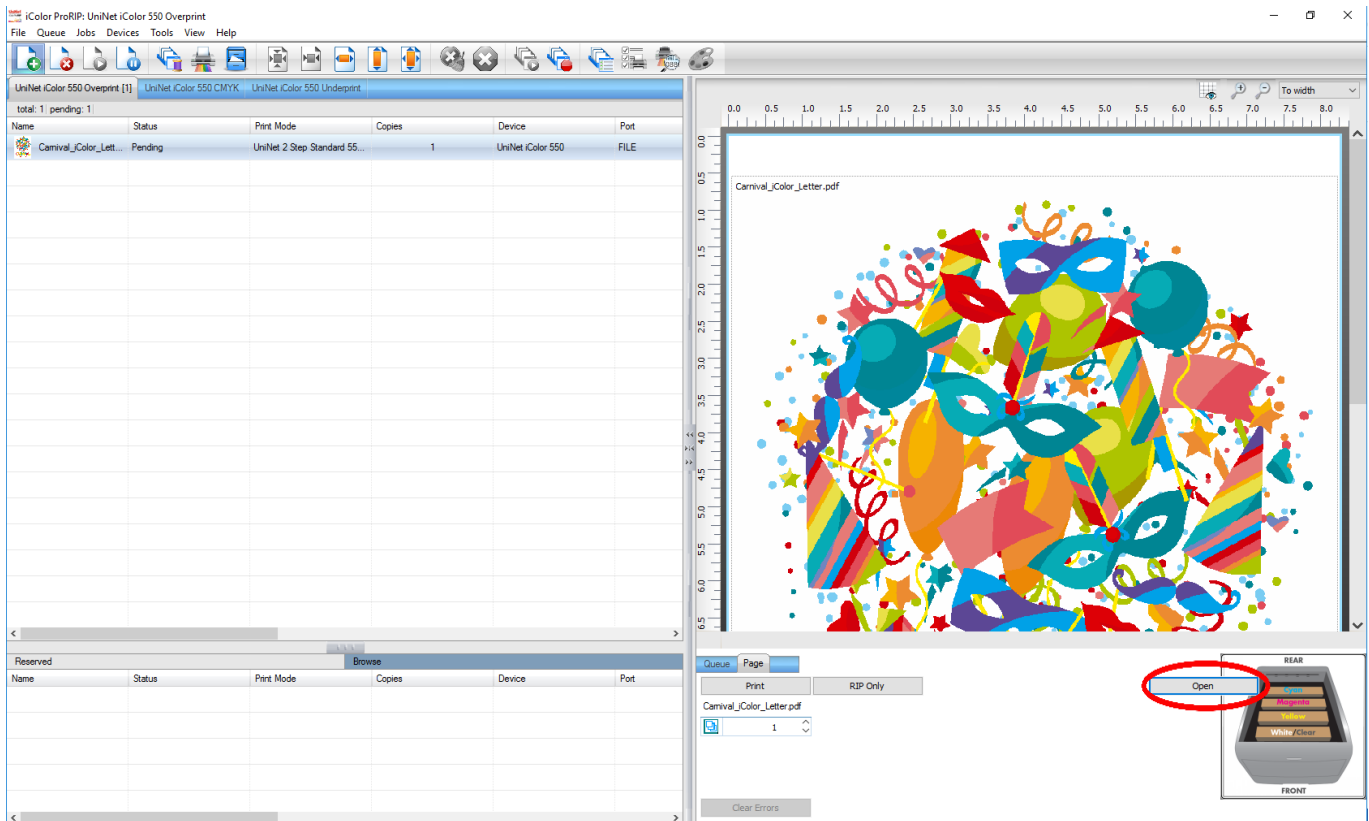
Using the Rasterization Features

Adding rasterization to a 'closed' design with no negative space increases the life of the garment by letting water and heat pass through more easily during each wash cycle, and allows for stretching of the garment and transfer without damage. It will also soften up the printed image and allow the garment to 'breathe' more naturally when worn. There are 2 ways to add rasterization effects to your image.

Option 1:

Rasterizing the entire image. Choose your media with either 'holes' or 'stripes' (also referred to as 'dots' or 'lines' in this document). This option applies a uniform raster screen across the entire image and does not require any special setup in your original artwork.
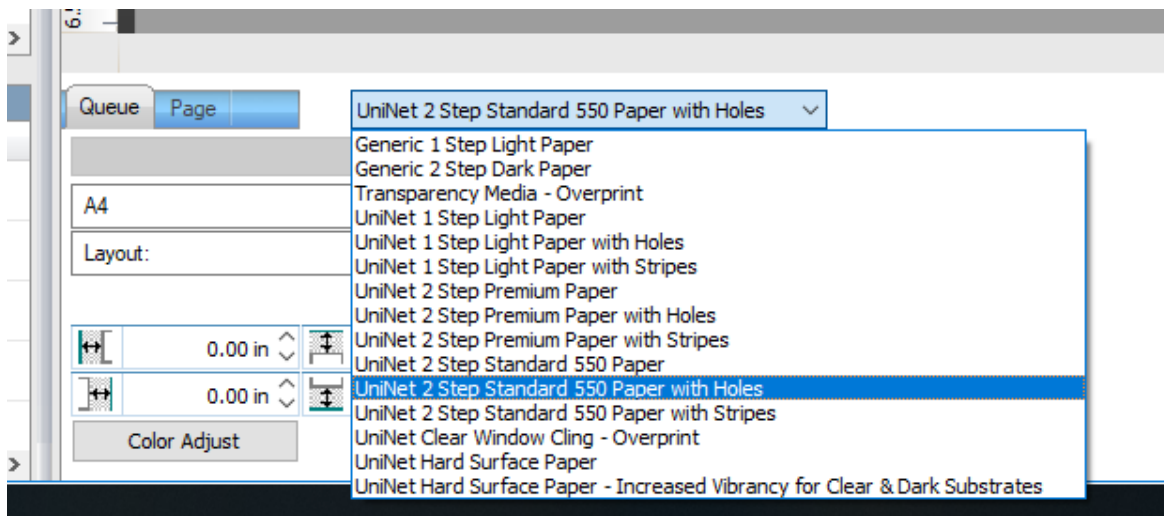
Graphical representation from the ProRIP with uniform holes:
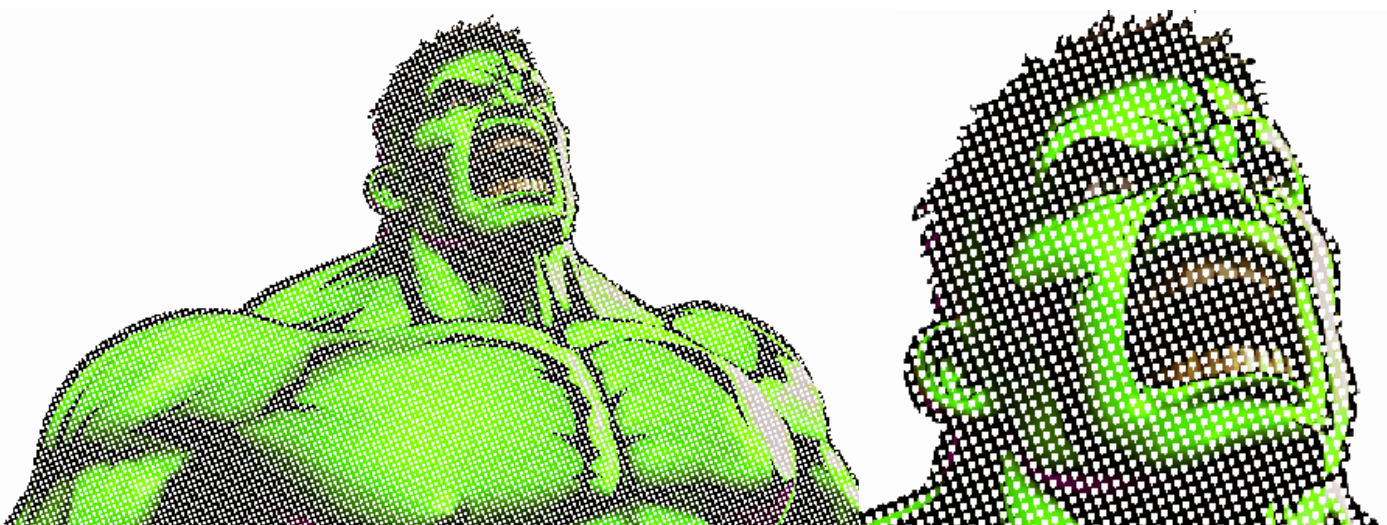
Graphical representation from the ProRIP with uniform stripes:

The size of the dots or stripes is adjusted in the 'Easy Color Adjustments' window by clicking 'Color Adjust' after your image is loaded, and is controlled by the 'Dot Size' slider. Sliding to the left makes the holes or lines bigger, and sliding to the right makes them smaller. A value of 255 is equivalent to 'off'. UniNet suggests using the default parameter of 180 for best results.

Option 2:

By default, the ProRIP will automatically and variably rasterize portions of your graphic that fade out. Since there is no way for transfer media to do this on its own, the RIP will apply appropriate sized holes to your graphic in those areas that represent fades. Typically seen with images such as clouds, or smoke that, by their very nature, fade to nothing. The software looks for areas of transparency in the design and applies holes (small to large) across the design in the areas where there is a fading (transparent) effect. This effect won't be seen until you either import an image that has some partial transparency or you import a raster image and then remove a color such as black, thus creating partial transparency.

The images below show what happens with variable rasterization after black is removed from the image. The image to the left is the original image file. The image to right is already pressed to a black shirt after the black elements are removed and automatic variable rasterization is applied.

You may also want to rasterize certain parts of the image without removing a color. For example, if you are recreating a company logo with a large design behind it and only want to rasterize the background, but not the logo itself. To achieve this, you would create or modify the specific parts of image using partial transparency in your favorite art software. The more transparency the image has, the more rasterization the ProRIP will apply. Below is an example of an image with this type to rasterization applied. Since this is automatic and built in as a default option in the RIP, the user does not have to do anything except import and print. Notice that the logo shows full screening and the rest of the image is rasterized. Additionally, notice the outside border of the background shows increasing sized dots as it fades to nothing.

Original graphic with 70% Opacity / 30% transparency applied to the background only:

Preview of how the graphic will print:

Zoomed in area variable rasterization:

Finished product pressed onto a black shirt:

Zoomed in to show variable dot pattern:
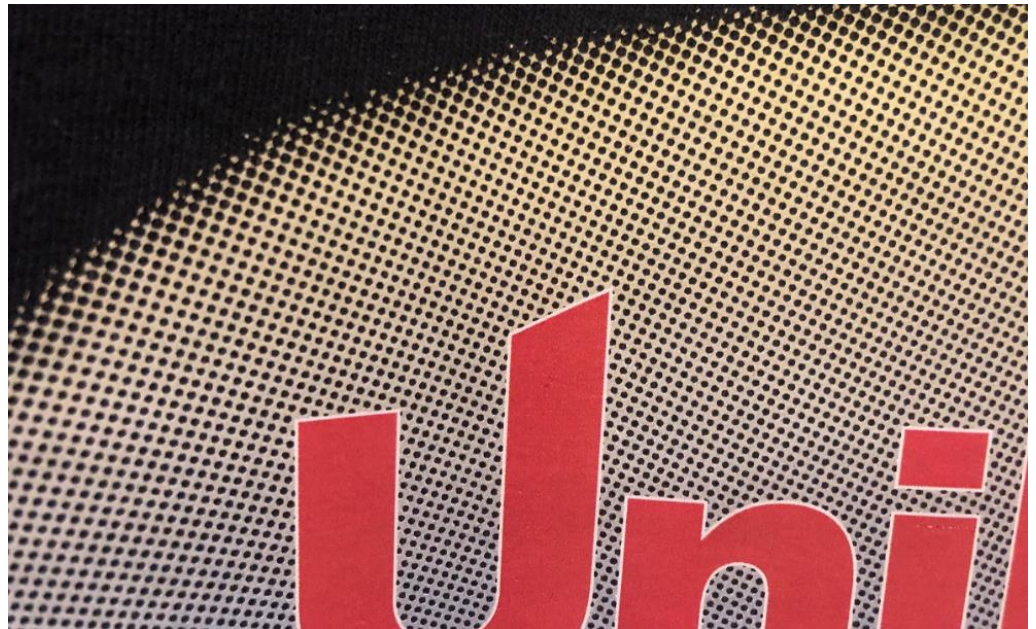
The size of the dots is controlled in the 'Easy Color Adjustments' window, when the 'Use graphics transparency for dot size' option is checked. The 'Adjust Holes' slider controls the size of the automatic variable rasterization based on object transparency. UniNet suggests using the default parameter of .70 for best results. Uncheck if you do not want automatic variable rasterization based on transparency.
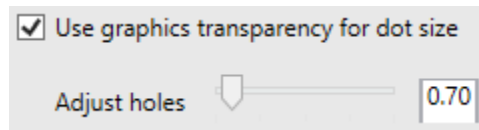
It is also possible to combine effects by using both forced rasterization (option 1) and automatic rasterization (option 2). The RIP will force rasterization in areas where there is no partial transparency and will use variable dot sizes in areas that do.

Adjusting the Frequency, Angle and Shape of Raster Lines or Dots

To alter the properties of the forced or variable holes or stripes in your image, double click the image you want to adjust in the Print Queue > Color Layer > Halftones. With the 'Enable halftoning' option checked, the Frequency, Angle and Shape may be adjusted freely. All four colors must be changed, but the benefit is each color can be controlled separately. For example, CMY can be at one angle and the K can be a different angle, should you so choose that look.
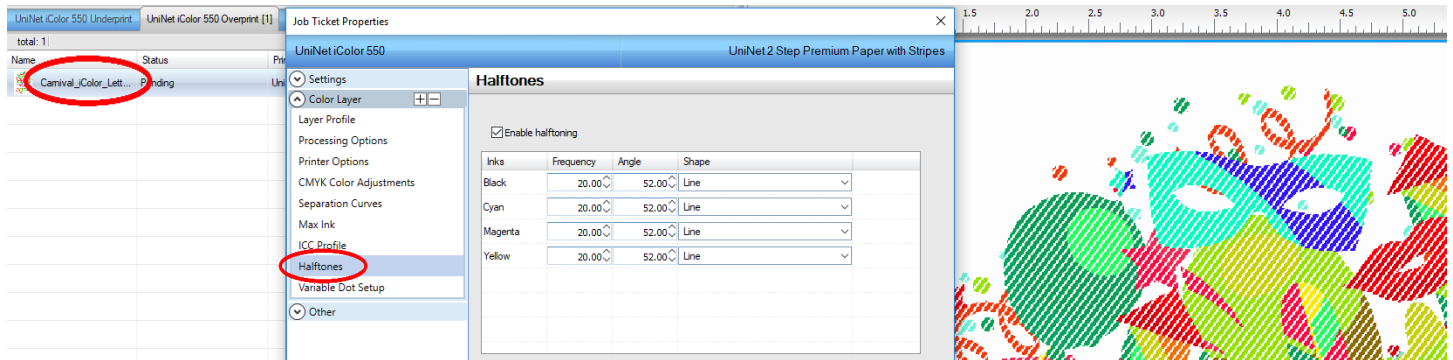
Halftone Settings

Frequency - The halftone frequency is measured in Lines Per Inch (lpi), which indicates the resolution of the dot shape. This option will dither the lines or holes in the design.

Angle - To avoid unexpected patterns from appearing in the final print, each of the CMYK separations must be printed at specific angles. The choice of angles is quite subjective, though specific angles may be preferred according to the printing technology being used. The default angle of 52 avoids undesirable moiré patterns.

Shape - There are a wide variety of shapes to choose for your halftone dots or lines. The choice of shape depends on what the user determines will produce good detail in your prints. For example, round and elliptical shapes are common, though test prints can determine whether other shapes are acceptable for the chosen artwork.

Image preview with effects added

To toggle between the original image and the image to be printed in the preview window, click these bird icons at the top of the preview window in the ProRIP. The bird icon on the right represents the original image. The bird on the left will preview how the image will look when printed.
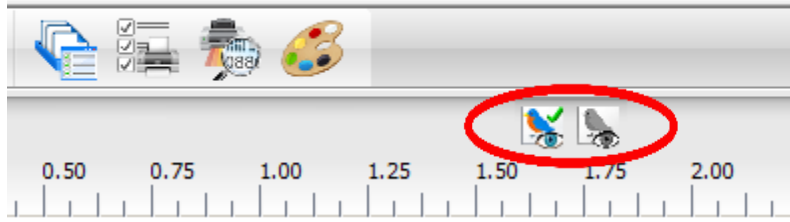
To see a preview of the image in its entirety, right click the file in the print queue > RIP Only. Then right click the file again > View Raw Data.
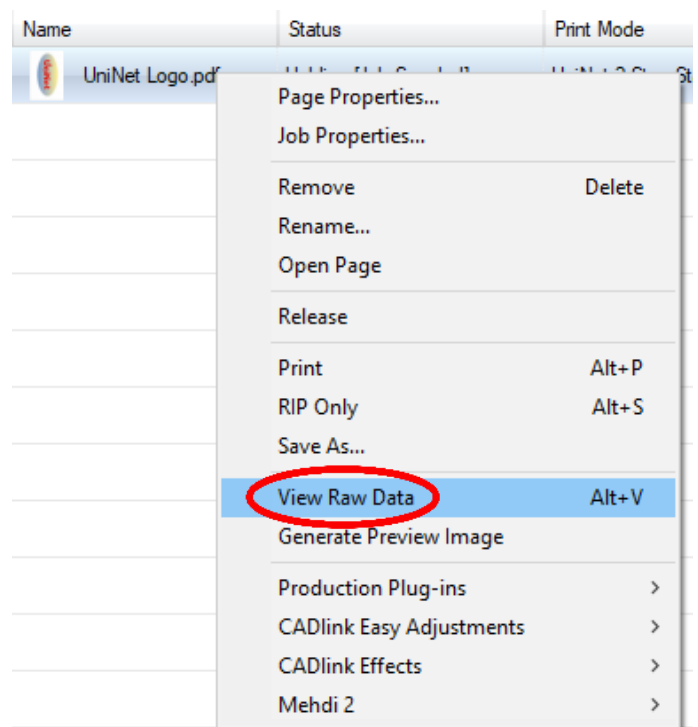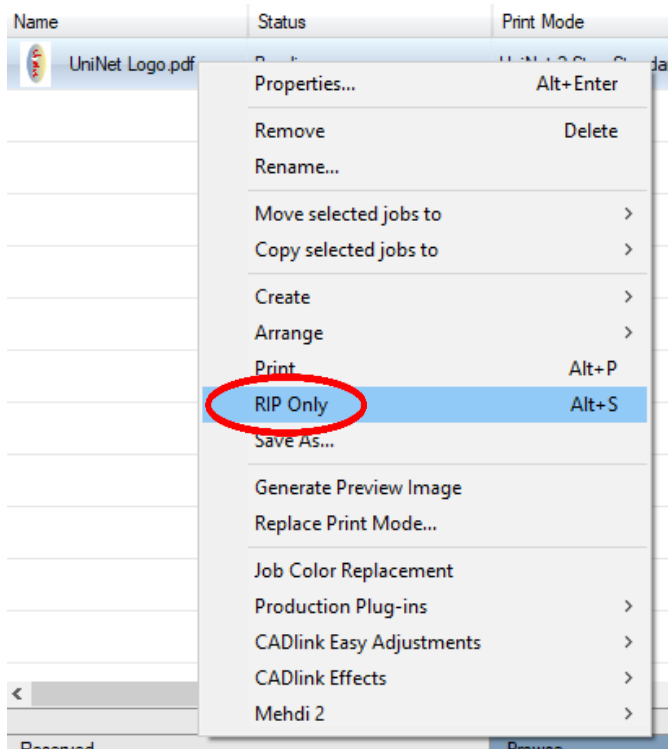
Note that the colors seen in this view are pure CMYK values – your colors will print accurately.

Basic Configuration

The following sections provide short setup procedures for configuring iColor® ProRIP.

Switching Language

Tools menu >> **Switch Language**

You can change the language of the program at any time within the tools menu.
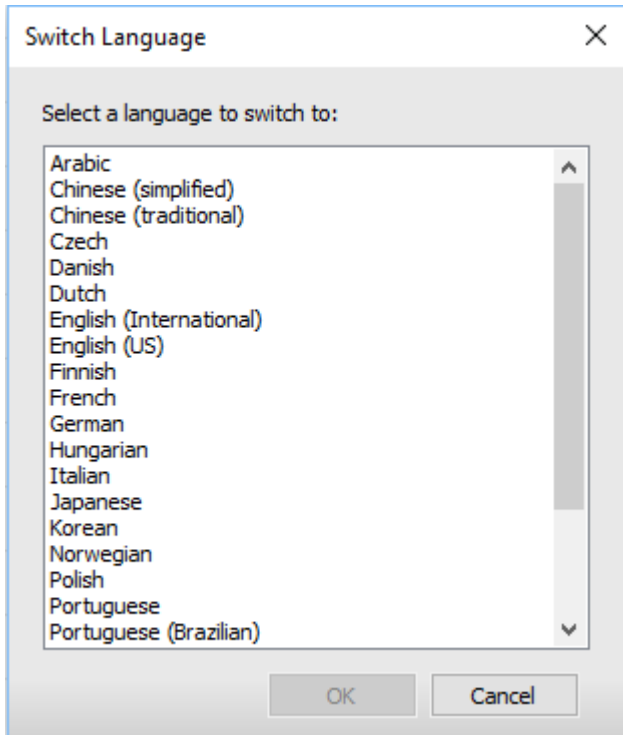
Creating a New Queue

Queue menu >> **Manage Queues**

When creating queues, name each queue according to the type of jobs that will be collected within that queue. For example, name the queue according to the printer, and indicate the media/material that will be used. If queues have been assigned meaningful names, then designers will have greater ease when choosing which queue to send jobs to. Note that the print queues that come with the software are preconfigured for all basic uses of your printer. Follow the steps below to create custom queues.

The procedure for creating a queue is as follows:

1. Choose **Queue** menu >> **Manage Queues**.
2. The **Queue Manager** will open.

3. Click the **Add Queue** button.
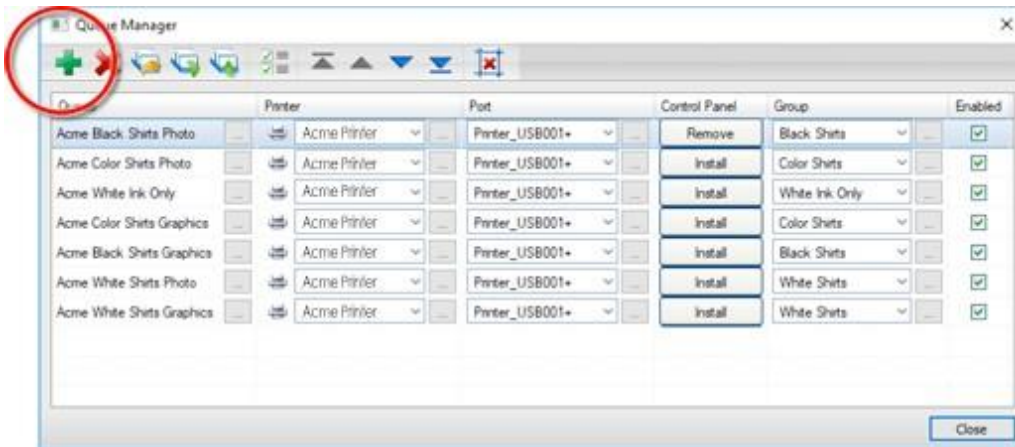
4. The **Create Queue Wizard** will launch.

5. Proceed through the wizard steps to choose the queue settings (i.e., choose the printer, port settings, print mode, page size, etc.).

6. When the wizard is finished, the new queue will be listed in the **Queue Manager** dialog.

7. Click **Close** to close the **Queue Manager** dialog.

8. Below the menu and toolbar, the tab for the new queue will be available.

Queue Menu

The **Queue** menu contains the basic queue controls.

- **Manage Queues** - Open the **Queue Manager** dialog, which is used to create queues for new printers, set the output port for the given device, and add printers to the Windows Control Panel.
- **Start** - Same as the **Start Queue** toolbar button. Start the current queue and process each print job according to the queue properties.
- **Stop** - Same as **Stop Queue** toolbar button. Hold all jobs in queue, regardless of the queue scheduling settings.
- **Clear Job Errors** - If a problem occurs when printing (such as paper out), the print job will be put on hold. After the printing problem is resolved, use the **Clear Errors** item to remove the error flag.

  If a job has encountered an error condition, then the job properties will summarize the errors. The job properties also include a detailed Log of the tasks that were completed before the error was encountered (see the **Log** tab).

- **Queue Menu Wizards** - These wizards are designed to help you quickly determine what print settings should be used for a specific garment material.
- **Properties** - Open the **Queue Properties** dialog.

Queue Menu Wizards

For your shop, it is normally quite difficult, costly, and time consuming to determine the absolute best print quality   settings for your DTG printer. Ideally, you need your printing software to work perfectly out-of-the-box, except that there are so many variables to the process, from the type of garment material, the garment color, the method of pretreatment, the graphic type, and the operating environment (i.e., humidity).

Even when using the highest quality garment materials, many tests are required, including for each garment color. These tests are especially important for light-colored shirts, which are the most difficult in terms of obtaining good quality prints.

In order to perform your garment tests efficiently, use the **Queue Menu** wizards, which are each designed to quickly print test charts for you to determine the correct print settings. The queue properties will then be set automatically, so that all subsequent jobs will be top quality.

Creating Custom Queues

When support files are installed for your printer, groups of default queues come preconfigured for color, black, and white garments. Each group typically contains queues that are configured for jobs that are primarily composed of photographic images (Photos), versus queues that are for jobs composed of vector graphics and logos (Graphics).

However, these are not all-purpose queues that will satisfy every aspect of what is a complex printing process. These preconfigured queues are starting points, which you can duplicate for different substrate colors, including substrates from different manufacturers.

For example, suppose that you have received new supplies of T-shirts from **Apex textiles** (an imaginary manufacturer of garment materials). You chose Apex as your supplier because they provided an attractive discount with the volume purchase of shirts, and you ordered colors like Hot Pink, Banana Yellow, Army Gray, and so on.

To organize your queues, you would create a new group like "Apex Photo," under which you would create duplicates of the default "Photo" queue, and rename each duplicate according to the garment color that it represents. The following diagram illustrates how your default queues might look after customization.
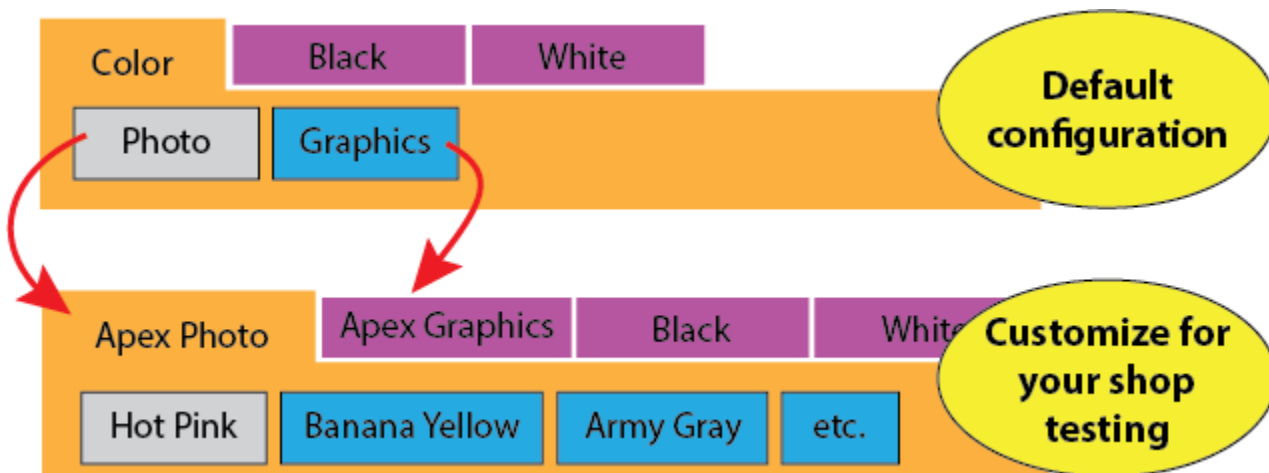
Likewise, you would create an "Apex Graphics" group, and populate it with duplicates of the default "Graphics" queue, again renaming each duplicate according to your garment colors.

When your duplicate queues are all in place, the **Queue Menu Wizards** can then be performed for each garment color, and your testing will refine each queue to obtain the quality prints that you need.

> **Note**: Though our examples have focused on color garment materials, you should also feel encouraged to customize queues for your white and black garments, especially in cases where you have chosen a new garment manufacturer.

Duplicating a Queue

When a new printer is installed, the preconfigured queue tabs will have common settings for you to use as a starting point. Preconfigured settings will need to be refined according to your job types (e.g., photographic prints, graphic designs, etc.), an production environment

In particular, for different substrate colors (and especially for substrates from different manufacturers), you want to duplicate preconfigured queue, and then customize that duplicate according to the substrate.

For example, suppose that you have pink substrate material, and you have a preconfigured queue for "color" substrates.

1. Choose **Queue** menu >> **Manage Queues**.
2. Select the "color" preconfigured queue, and then click the **Copy Queue** button.
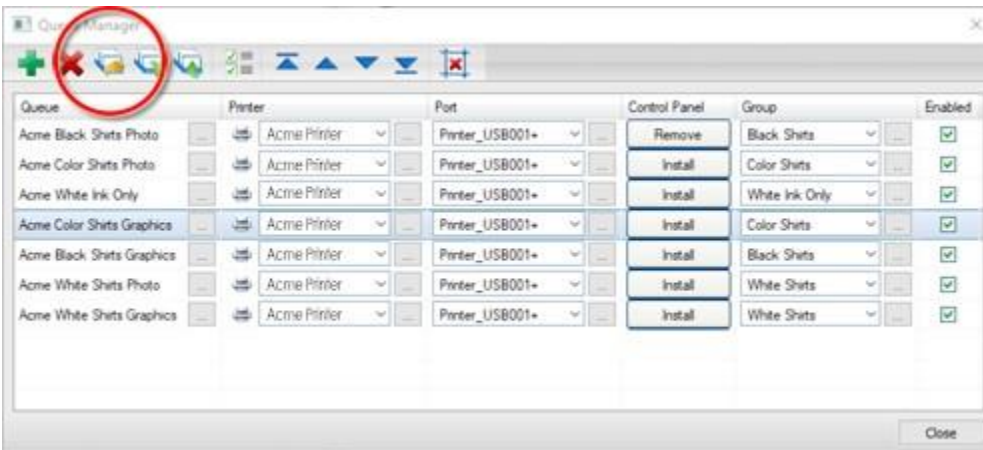
3. The new queue will be appended to the list.

4. With the new queue selected, click **[...]** to open the **Queue Properties** dialog.
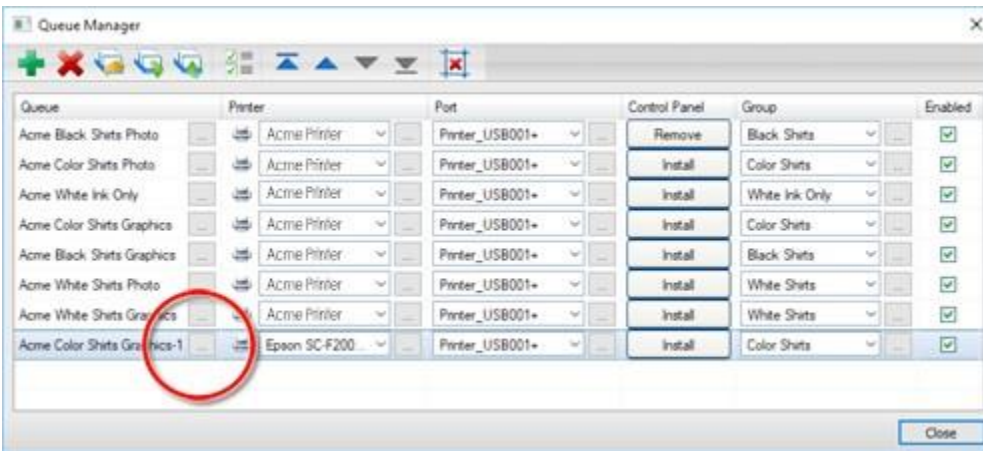
5. In the **Queue Properties** dialog, change the queue name according to the substrate color.
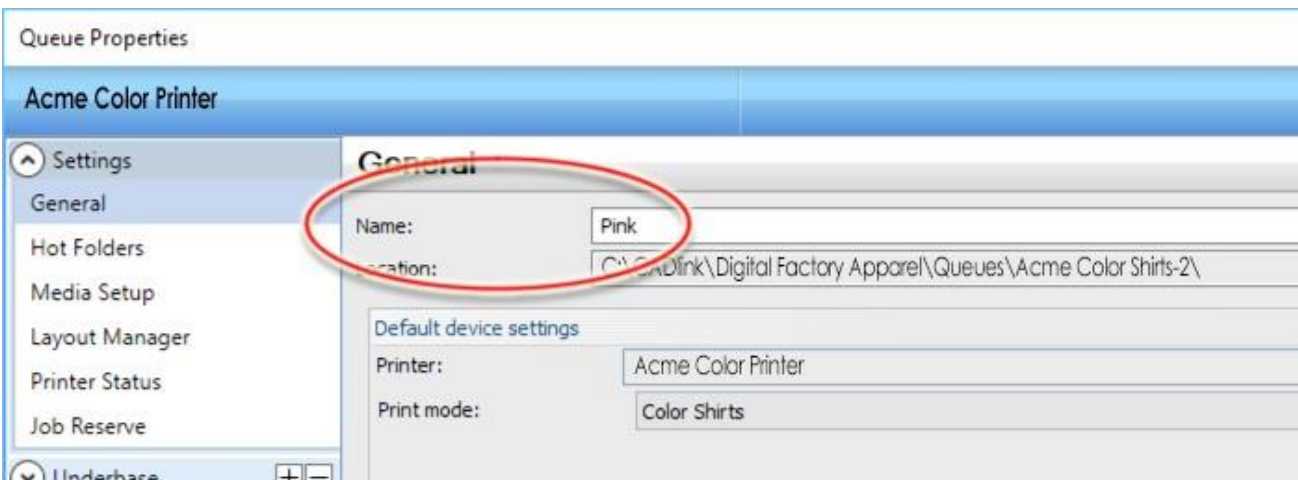
6. Click **OK** to close the **Queue Properties** dialog.
7. Click **Close** on the **Queue Manager** dialog.

Your new queue will now have its own tab in iColor® ProRIP, and you can refine its settings using the Queue Menu Wizards.

Viewing Hidden Queues

Queue tabs are arranged left-to-right. When there are more queue tabs that can fit within the display, two scroll buttons (on the right) can be used to browse hidden tabs.

Click tab to choose a queue

Click buttons to view hidden queues

Rearrange Queue Tabs

Queue tabs are arranged left-to-right in the order that each queue was created. To rearrange the tabs, use the **Queue Manager** dialog.

1. Choose **Queue** menu >> **Manage Queues**.
2. The **Queue Manager** will list the queues tab names.
3. Click the queue that you want to rearrange.
4. Along the dialog toolbar, there are four buttons for moving the selected queue up/down in the list.
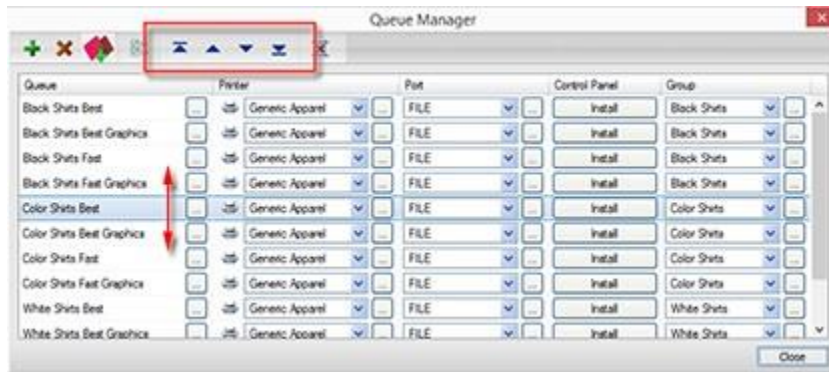
Adjusting the Queue Properties

iColor® ProRIP provides several predefined queues with suggested settings for each type of garment material.

1. Select the queue by clicking its tab.
2. To edit the queue properties, click the **Configure Queue** button. Alternatively, choose **Queue** menu >> **Properties**. Alternatively, double-click the queue tab.
3. The **Queue Properties** dialog will open.
4. Along the left-hand side of the **Queue Properties** dialog, click the category of settings that need to be adjusted.
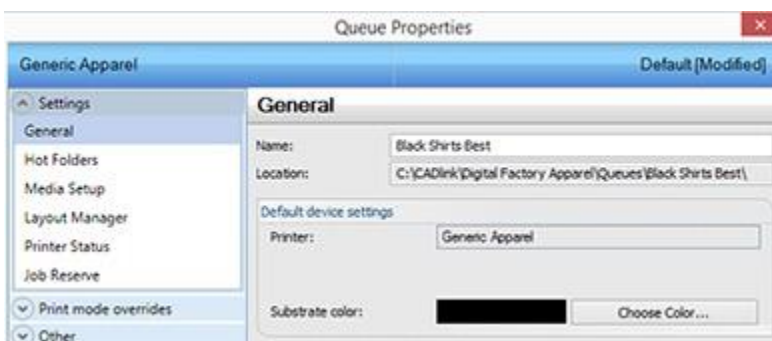
Inspecting Job Properties

When a job is received in a given queue, the properties of that job are "inherited" from the queue properties. For example, a received print job will use the print mode that had been previously set for that queue.

In most cases, there is neither a need to inspect nor modify the job properties. However, in the event of an unexpected device error, then the error log can be inspected within the job properties.

1. Suppose that a job error has occurred, and the job is being held in the active list. Alternatively, clicking the **Stop Queue** button will cause new jobs to be held pending.
2. Right-click the job and choose **Properties**.

3. In the **Job Ticket Properties** dialog, choose **Other** >> **Log** tab.

Understanding the ProRIP controls

When a print job is received, it will be acted upon according to the properties of the given queue. Commonly, a queue is set to act upon a print job, which will cause the job to appear in the Active List, and its layout previewed in the Visual Print Manager. If a print job is not scheduled, then it will be listed in the Reserved List (i.e., the job is set aside until the user chooses to schedule the job).
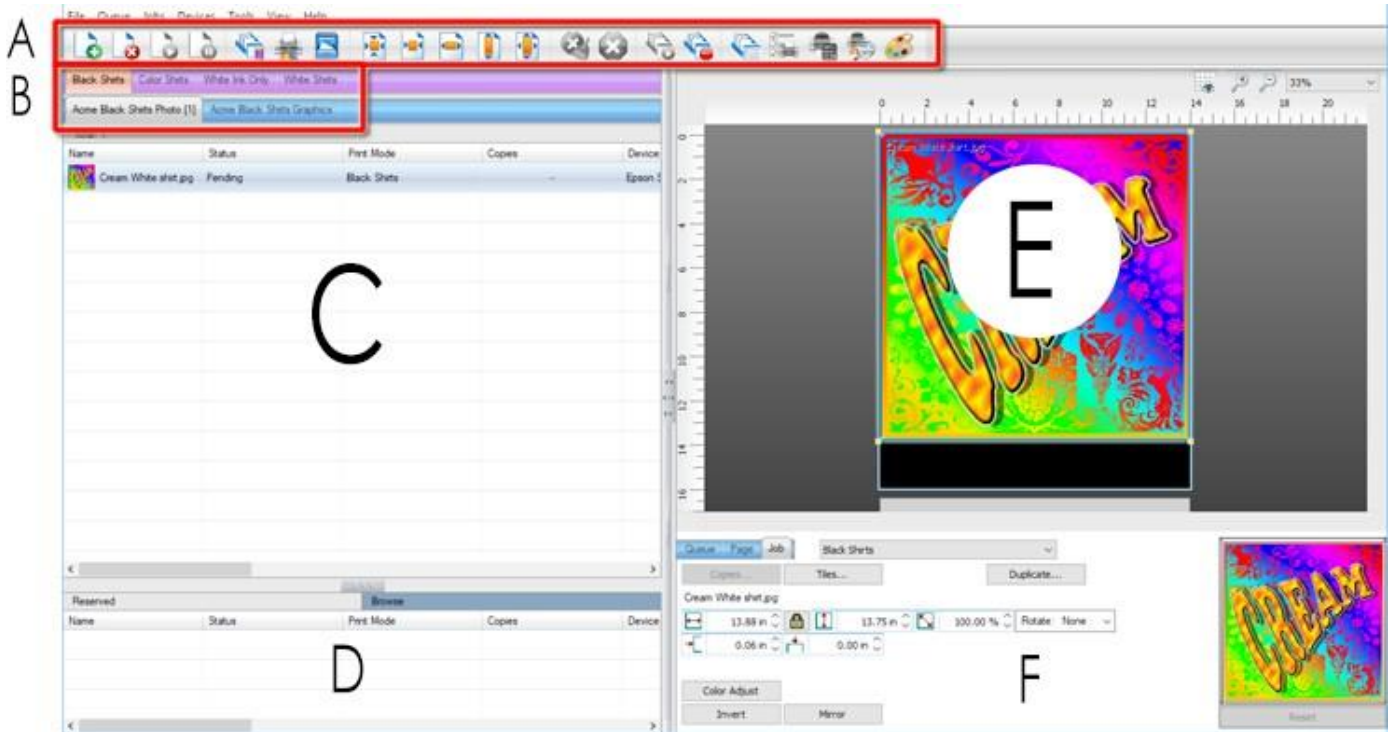
A - Along the top is the toolbar that provides some top-level controls for the selected queue and/or job.

B - Below the toolbar are the preconfigured queue tabs, which provide default settings for your printer.
    Note: To optimize the queue tabs for your shop, please refer to the Queue Menu Wizards.

C - Each queue is a repository for collecting and managing print jobs.

D - Below the queue jobs is the Reserved List, which collects jobs that have been completed.

E - The Layout Preview shows the layout of jobs upon the media/substrate.

F - Below the Layout Preview is the SmartBar, which provides context-sensitive controls that vary according to whether the **Queue**, **Page**, or **Job** are selected.

Starting and Stopping Jobs

- For a given queue, if the **Start Queue** button has been clicked, then jobs will proceed according to the schedule settings as set within the queue properties.

- If the **Stop Queue** button has been clicked, then all jobs will be placed on hold, regardless of the schedule settings within the queue.

To adjust the schedule settings of the queue, choose **Queue** menu >> **Properties** >> **Layout Manager** tab. If a print job is being held in the active list, then it can be printed by right-clicking the job and choosing **Print**.

Cancelling a Print Job

Should it be necessary to suddenly stop a job, use the following steps to cancel the job in a clean fashion, such that you can get started with the next job promptly:

1. Pause the job on the printer control panel.
2. In iColor® ProRIP, right-click the job and choose **Abort**.
3. Windows will open a **Port Locked** dialog. Do not close this dialog.
4. From the printer control panel, reset the printer. If there is no reset button (or procedure for resetting the printer), then turn the printer OFF. After powering OFF, power the printer ON after a short pause.
5. Return to the **Port Locked** dialog and click **OK** to continue.

At this point, the printer should be ready to process new jobs, and buffer data from the cancelled job will have been cleared.

Toolbar Controls

The Toolbar provides high-level queue management, such as starting and stopping the queue, clearing errors, and deleting jobs.
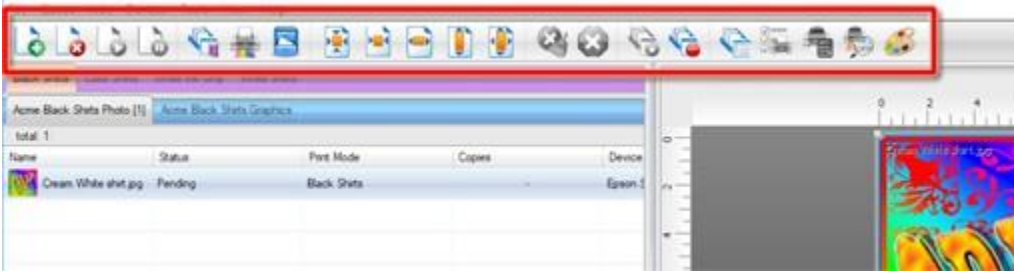
- **Open** - Open a browse dialog and choose an image file to print. The given file (e.g., EPS, BMP, TIFF, etc.) will be added as a job in the current queue.
- **Remove Job** - Permanently delete the selected job(s).
- **Release Job** - Release a held job for printing.
- **Hold Job** - Stop the job, regardless of whether the queue is stopped.
- **Spool Job** - Spool the print data without sending to printer. The spool file is retained on the hard drive, which can be previewed by right-clicking the job and choosing **View Raw Data**.
- **Print Job** - Begin printing the job (i.e., spool the job and send the print data to the printer).
- **Archive to Disk** - Store the job in an archive location, such that it can be restored at a later date.
- **Center on Page** - Center the job horizontally and vertically on the material.
- **Center Horizontally on Page** - Center the job horizontally on the material.
- **Fit to Page Width** - Scale the job to match the page width.
- **Fit to Page Height** - Scale the job to match the page height.
- **Fit to Page** - Scale the job without exceeding the page size.
- **Clear Errors** - If a problem occurs when printing (such as paper out), the print job will be put on hold. After the printing problem is resolved, use the **Clear Errors** item to remove the error flag.

    If a job has encountered an error condition, then the job properties will summarize the errors. The job properties also include a detailed Log of the tasks that were completed before the error was encountered (see the Log tab).

- **Abort Jobs - Cease further processing of** the job.
- **Start Queue** - For the current queue, process jobs as they are received, per the queue properties.
- **Stop Queue** - Hold all jobs in queue, regardless of the queue scheduling settings.
- **Configure Queue** - Open the **Queue Properties** dialog for the given queue.
- **Printer Status and Settings** - Query the printer for its current panel settings.
- **Costing** - Open the Queue Properties dialog to the Costing tab.
- **Find Job** - Select and output a job by scanning the barcode for that job. See Barcode Support
- **Job Color Replacement** - Perform substitutions of either specific colors or color ranges.

The Main Menu

- The **File** menu provides tools for importing images directly into a queue, rather than from a graphic design application. The imported image can be from either an image file (e.g., BMP, JPEG, etc.), or a desktop scanner.
- The **Queue** menu provides controls for creating and adjusting queue parameters.
- The **Jobs** menu provides controls for adjusting selected jobs.
- The **Devices** menu provides tools for installing printers, customizing print mode settings, and printing test pages to confirm quality.
- The **Tools** menu provides controls for adjusting the interface and system preferences.

File Menu

The **File** menu provides tools for loading images into a given queue for printing.

- **Import File** - Open a browse dialog and choose an image file to print. The given file (e.g., EPS, BMP, TIFF, etc.) will be added as a job in the current queue.
- **Find Files** - Open a search dialog to locate a specific image file. Search criteria includes location, filename, file type, and modification date.
- **Get from Gmail** - Use a Google email account to receive job files, which can then be loaded into iColor ProRIP.

Get from Gmail

You can configure iColor ProRIP to periodically scan for jobs that have been sent via a Google email account. This is a convenient means of transferring images from digital phones, and tablets.

- For an image file that is attached to the gmail message, it will be added to the queue.

- If the Subject line of the message matches (exactly) the name of a queue, then the image file will be added to that queue.

- Otherwise, the image file will be added to the most recent queue.

Choosing the Port Settings

1. From the **Queue** menu, choose **Manage Queues**.
2. The **Queue Manager** dialog will open.
3. For the given device, the **Port** column indicates the output port.
4. Choose a port from the drop-list.
5. Once a port has been selected, its properties can be adjusted by clicking **[...]**.

USB Port

A Universal Serial Bus (USB) port has the benefit of allowing new hardware to be added without configuration concerns or hardware conflicts. In addition, a USB device may be added without requiring the workstation to be restarted.

1. When a printer is connected to the computer via its USB port, Windows will automatically detect the USB printer.
2. In iColor® ProRIP, the USB port name for the printer should now be available.
3. From the **Queue** menu, choose **Manage Queues**.
4. The **Queue Manager** dialog will open.
5. From the **Port** column drop-list, choose the USB port that is named specifically for your printer model.

> **Example:** For our Acme Printer, the USB port will be listed as "**Acme Printer Pro_USB00X+port name**."

> **Note:** Depending upon advanced settings within iColor® ProRIP, it is possible that there is a secondary "USB00X" port (or "LPTUSB1" in the case of Belkin Adapters) that is available. Do not choose either of these secondary ports, unless requested to do so by Tech Support.

> **Note:** Though USB is considered to be quite fast, consider that USB is a bus-based system that can be slowed significantly by other USB devices that are connected to the same bus (i.e., same workstation). For example, if an external USB hard drive or flash drive is connected to the workstation, then this can incur performance and time out issues.

> **Note:** Most computers that have numerous USB ports, in actuality there are (perhaps) only one or two USB buses internally. Check the workstation specifications (i.e., motherboard) to determine how data is managed by the workstation.

TCP/IP Port

The TCP/IP port is used with printers that are accessed across a TCP/IP network. In order to use a TCP/IP network printer, your network system administrator should be consulted to determine the **IP Address**, **Protocol**, and **Port number** of the printer.

> **Note:** To install TCP/IP protocol under Windows, please refer to Windows Help.
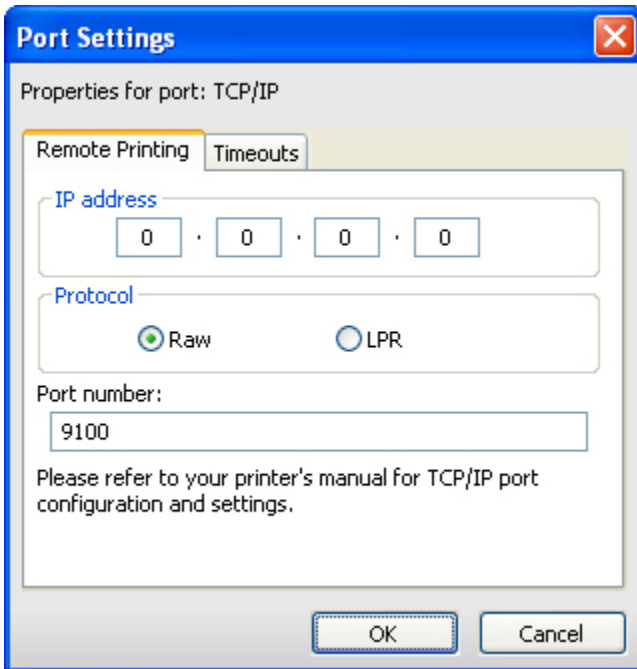
Installing a New Printer

Devices menu >> **Manage Devices**

When creating a new queue, you will be provided with the opportunity to install a given printer or cutter. However, to install a printer without creating a queue, use the following procedure. This procedure is typically for modifying an existing queue to use a new device.

1. Choose **Devices** menu >> **Manage Devices**.
2. The **Manage Devices** dialog will list the currently installed printers.
3. In the **Manager Printers** dialog, click the **Add Printer** button.

Install New Printer
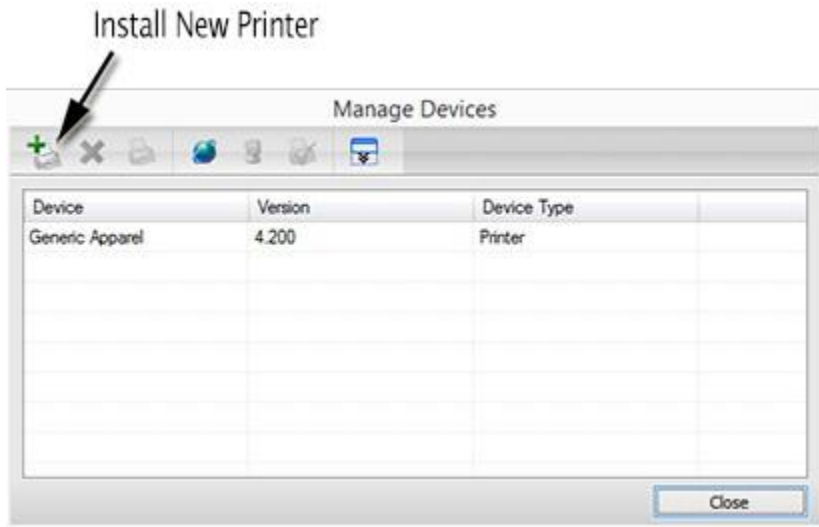
4. Choose from the list of available printers, and then click **OK** to proceed.
5. The **Device Package Search** page will query for the location from which support files will be installed.
6. Click the option "Search for new device package versions from a CD and/or the Internet"
7. Clear the "Search CD-ROM or floppy drive" checkbox.
8. Tick the "Search dedicated Online server for updated device packages" checkbox.
9. Click **Next** to proceed with the installation.
10. The new printer/cutter will now be listed within the **Manage Devices** dialog.
11. Click **Close**.

Once a printer has been installed, it can be assigned to an existing queue, or a new queue can be created.

Updating Drivers and Support Files

> **Devices** menu >> **Manage Devices**
>
> **Note:** For computers that are not connected to the Internet, it is assumed that you have manually obtained the desired drivers and support files, and have placed them in a directory that the computer can access.

Use the following procedure to update machine drivers and support files that will be used by iColor® ProRIP.

1. Choose **Devices** menu >> **Manage Devices**.
2. The **Manage Devices** dialog will list the currently installed printers and/or cutters.
3. Click the **Check for Online Updates** button, and available files will be sought from the CADlink web site.

   Alternatively, if you have placed the drivers and support files locally (e.g., on the hard drive or CD-ROM), then click the **Check for Local Updates** button. In this case, you will be prompted for the

location of the files.
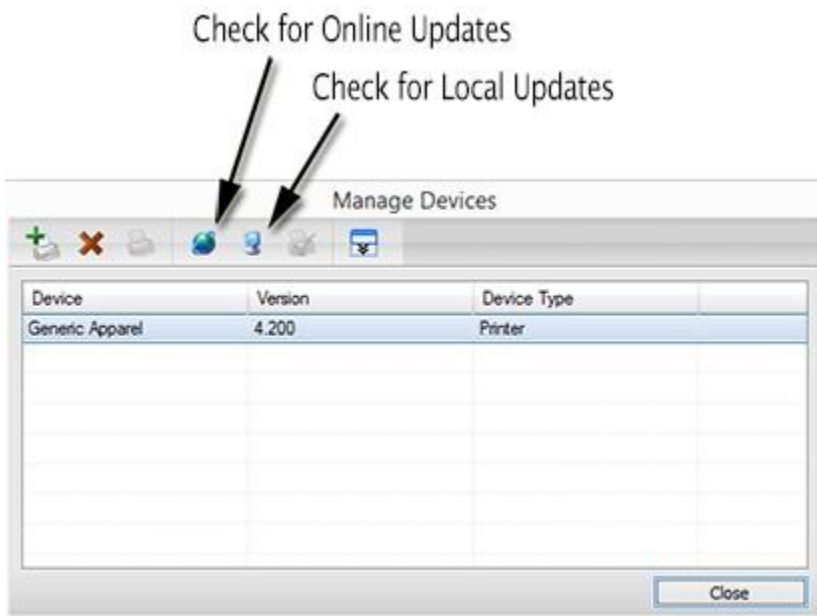
4. When file updates are located, click the **Update Devices** button to proceed.
5. When the updates are complete, click **Close**.

Assigning a Different Printer

After you have been using iColor® ProRIP for a while, there will come a time when the printer needs to be replaced. Instead of creating a new queue, the following procedure can be used to assign a new printer to the queue:

1. Choose **Devices** menu >> **Manage Devices** to install a new printer.
2. Choose **Queue** menu >> **Manage Queues**.
3. The **Queue Manager** dialog will list the existing queues.
4. For the desired queue, set the printer.
5. Optionally in the **Control Panel** column, click **Install** to add the printer to the Windows Control Panel.
   This allows other Windows applications to **File** menu >> **Print** to that printer, and those print jobs will be received by iColor® ProRIP.

Sending Jobs to iColor® ProRIP

Once you have installed iColor® ProRIP , each of the following workflows is designed to help you confirm that print jobs are being received and processed by iColor® ProRIP correctly. Choose the workflow that best represents the method by which you will use iColor® ProRIP .

Sending Jobs from SignLab®

For the latest versions of SignLab, there is support for printing directly to iColor® ProRIP:

- **File** menu >> **Print and Cut** - Print to iColor® ProRIP without generating an underbase. This is suitable for printing to white garment material.

- **File** menu >> **Print with Underbase** - Automatically generate underbase information for printing to either black or color garment material.

For older SignLab versions, use the following procedure to add the queue as a print destination within the Windows Control Panel. Printing from SignLab will use the common Windows **File** menu >> **Print** command.

> **Note:** Using the Windows Control Panel does not permit alpha (transparency) channel data, which prevents you from defining a white underbase for printing to black or color garment material.

In iColor® ProRIP

1. Choose **Queue** menu >> **Manage Queues**.

2. In the **Control Panel** column, click the **Install** button, such that the queue is available as a print destination for other Windows applications.

3. Click the **Close** button.

In SignLab

4. Prepare the print design on the SignLab workspace.

5. Save the design file, such that the design is not "untitled."

6. Choose **File** menu >> **Print** to open the **Print** dialog.

7. From the **Printer** tab, choose the queue that had been designated in step (2).

8. Click **OK** to accept the **Print** dialog settings, and the job will be received in iColor® ProRIP .

Sending Jobs from PhotoShop®

When iColor® ProRIP was installed, additional **Send to iColor® ProRIP** plug-ins were installed for your PhotoShop. These plug-ins provide a quick means of transferring your PhotoShop design to iColor® ProRIP in a manner that prepares the design for garment printing.

- **File** menu >> **Automate** >> **Send to iColor® ProRIP** - Print to iColor® ProRIP without generating an underbase. This is suitable for printing to white garment material.
- **File** menu >> **Automate** >> **Send to iColor® ProRIP with Underbase** - Automatically generate underbase information for printing to either black or color garment material.

In PhotoShop

1. Prepare the print design in PhotoShop.
2. Save the PSD file, such that the design is not "untitled."
3. Choose **File** menu >> **Automate** >> **Send to iColor® ProRIP**.

    Alternatively, choose **Send to iColor® ProRIP with Underbase** when printing to black or color garment material.

4. In the **Send to iColor® ProRIP** dialog, choose the queue name and click **OK**.

    To send jobs to iColor® ProRIP that is installed on a remote computer, click **Browse** and choose the network location.

5. The job will be received in iColor® ProRIP.

Sending Jobs from Illustrator®

When iColor® ProRIP was installed, additional **Send to iColor® ProRIP** plug-ins were installed for your Illustrator. These plug-ins provide a quick means of transferring your Illustrator design to iColor® ProRIP in a manner that prepares the design for garment printing.

- **File** menu >> **iColor® ProRIP** >> **Send to...** - Print to iColor® ProRIP without generating an underbase. This is suitable for printing to white garment material.
- **File** menu >> **iColor® ProRIP** >> **Send with Underbase...** - Automatically generate underbase information for printing to either black or color garment material.

In Illustrator

1. Prepare the print design in Illustrator.
2. Save the design file, such that the design is not "untitled."

3. Choose **File** menu >> **Send to iColor® ProRIP**.

   If the design is being prepared for printing to a black or color garment material, then click **Send to iColor® ProRIP with Underbase**.

4. In the **Send to iColor® ProRIP** dialog, choose the queue name and click **OK**.

   To send jobs to iColor® ProRIP that is installed on a remote computer, click **Browse** and choose the network location.

5. The job will be received in iColor® ProRIP.

Sending Jobs from CorelDraw®

When iColor® ProRIP was installed, additional **Send to iColor® ProRIP** plug-ins were installed for your CorelDraw. These plug-ins provide a quick means of transferring your CorelDraw design to iColor® ProRIP in a manner that prepares the design for garment printing.

- **Standard** toolbar >> **Send to iColor® ProRIP** - Print to iColor® ProRIP without generating an underbase. This is suitable for printing to white garment material.
- **Standard** toolbar >> **Send to iColor® ProRIP with Underbase** - Automatically generate underbase information for printing to either black or color garment material.

In CorelDraw

1. Prepare the print design in CorelDraw.
2. Save the design file, such that the design is not "untitled."
3. From the **Standard** toolbar, click the **Send to iColor® ProRIP** button.

   If the design is being prepared for printing to a black or color garment material, then click **Send to iColor® ProRIP with Underbase**.

4. In the **Send to iColor® ProRIP** dialog, choose the queue name and click **OK**.

   To send jobs to iColor® ProRIP that is installed on a remote computer, click **Browse** and choose the

network location.

5. The job will be received in iColor® ProRIP.

Importing Designs Directly into iColor® ProRIP

Design files can be imported directly into iColor® ProRIP , without the need to open the files in their original design applications. Use this workflow where you have a design file that must be printed without having access to the original design application. For example, the customer has sent you a design file, and you need to print the file "as is" without importing it into a design application.

> **Note:** The supported image formats are subject to change, though common image formats are supported (e.g., EPS, AI, PDF, BMP, JPEG, TIFF, etc.). For designs that contain an alpha (transparency) channel, the image format should be either PSD, PNG or TIFF.

In the Design Application

1. Prepare the print design.
2. Save the design file.

In iColor® ProRIP

3. Load the design file using one of the following methods:

    a) Choose **File** menu >> **Import File**.

    b) From the toolbar, click the **Open** button.

    c) Drag-and-drop the file into the iColor® ProRIP window.

    d) Choose **File** menu >> **Get from gmail** to configure iColor® ProRIP to receive designs via a Google email account.

4. The job will be received in iColor® ProRIP.

Sending Jobs Using a Hot Folder

This workflow uses a specially designated **Hot Folder** (i.e., a directory on the hard drive). When design files are copied into the Hot Folder, they will be automatically detected by iColor® ProRIP and processed. Note that the copied file will be subsequently deleted by iColor® ProRIP.

Create an Empty Hot Folder

1. Create an empty directory on your iColor® ProRIP computer, or elsewhere on your network. This will be your Hot Folder, which must satisfy the following two conditions:

a) The iColor® ProRIP computer must have login permission to read and write to the Hot Folder.

b) Your graphic designers must have file access permissions to write/copy files into the Hot Folder.

In iColor® ProRIP

2. Choose **Queue** menu >> **Properties**.

3. Click the **Hot Folders** tab.

4. Tick the **Enable queue hot folder** checkbox, which opens a browse dialog.

5. Browse to the **Hot Folder** that had been designated in step (1). Please note that the **Hot Folder** must be empty when it is initially chosen.

6. Click **OK** to accept the **Hot Folder** path.

7. Click **OK** to close the **Queue Properties** dialog.

In the Design Application

8. In the design application, prepare the print design.

9. Save the design file in a commonly accepted format (e.g., EPS, AI, PDF, BMP, JPEG, TIFF, etc.), and copy the design file into the Hot Folder.

    For designs that contain an alpha (transparency) channel, the image format should be either PSD, PNG or TIFF.

10. The job will be received in iColor® ProRIP.

Image Manipulation Topics

For a job that is being held in a queue, the **Jobs** menu provides an assortment of image manipulation tools.

Image Manipulation Using GIMP

GIMP is a third-party image manipulation tool that is suitable for a variety of image manipulation tasks, including photo retouching, image composition, and image construction. The following sections contain procedures for performing basic operations using GIMP, which you should complete in order to gain a sufficient understanding of these tools. Once you have developed a familiarity with the GIMP tools, you will be ready to consult the exhaustive help resources that are available through the GIMP web site.

Due to the collaborative nature of the GIMP project, CADlink neither maintains nor provides support for technical issues related to GIMP. Instead, the answers to technical questions should sought through the GIMP web site, where concise answers for your design needs can be addressed.

Note: Help files for GIMP are available from the http://docs.gimp.org site. Both tutorials and forum support are available   from the www.gimp.org site.

Please refer to the Help Topics file within the ProRIP program for further information regarding GIMP.

Topics include:

Launching GIMP

Opening Dialog Controls

Adding Tab Controls

Dragging Tabs

Saving an Image Back to the Queue

Moving a Selection

Apply Effects to Portions of an Image

Draw a Straight Line

Apply Stroke to a Selection

Create a Complex Selection Using Quick Mask

Saving Images with Transparency

Making a Selection Partially Opaque

GIMP Tutorial - Simple Floating Logo

Fluid Mask - Easy Image Clipping

> **Note:** Fluid Mask also has its own help documentation, and tutorial videos are available from the Fluid Mask web site (www.vertustech.com).

Fluid Mask is an intuitive tool for knocking out the background of an image, such as a photo of a person standing before scenery. The process is very much like a paint-by-numbers coloring book, where you paint with a green brush (the **Keep** brush) to indicate the foreground, and paint with a red brush (the **Delete** brush) to indicate background.

Suppose that you have a customer photo, such as a JPEG image of their child that was taken using a digital camera. However, the background of the image is cluttered and needs to be clipped using Fluid Mask.

Please refer to the Help Topics file within the ProRIP program for further information regarding Fluid Mask

Super Size Image

Jobs menu >> **Super Size Image**

The **Super Size Image** is an image enlargement tool that increases the resolution of an image, whilst retaining the detail and qualities of the original image. Typically, it would be desirable to increase the resolution for images that are lower resolution than ideal, or after scaling the job to print at dimensions that are much greater than the image was designed for.

For example, suppose that a job image has a resolution of 150 dpi, and you have used the Visual Print Manager to scale the image print dimensions by 100%. However, scaling did not change the image resolution. As a solution, use Super Size Image to increase the image resolution.

1.   Select the job and choose **Jobs** menu >> **Super Size Image**

2.   The current image resolution will be displayed, and you are provided an opportunity to set a higher resolution.

3.   When the **OK** button is clicked, the **Zoom Engine** dialog will preview the quality of the resized image. Adjust the **Zoom Engine** controls to retain the desired quality.

- **Preview Image** – A thumbnail of the original image is shown in the upper-left corner of the dialog, and a zoomed preview takes up about 2/3 of the right-hand side. Click the original image thumbnail to center the preview.

- **Zoom Level** –Click the (+) and (-) buttons to adjust the zoom level of the zoomed preview.

- **Super Size V1 and V2** – These are versions 1 and 2 of the Super Size algorithm that is used for enlarging images. **Super Size V2** is the improved method that retains greater image quality (e.g., less aliasing, sharper details, etc.), though the V1 method remains available as an alternative.

- **Edges Crispness** – This slider varies in the range of [-100, 100]. Positive values will sharpen the edges between color regions, whereas negative values will blur the edges.

- **Surface Smoothness** – This slider varies in the range of [0, 100]. This slider affects the perceived texture of the image. Low slider values allow the image to appear more jagged (i.e., rough), whereas high values create the impression of a continuous, smooth surface.

- **Soft and Chroma** – Note that the **Soft** and **Chroma** options are only available if **Super Size V2** is enabled. Tick the **Soft** checkbox to create a slight blur that suggests softness within the image. Tick the **Chroma** checkbox to increase the color saturation.

- **Brightness** (-100, 100) – Adjust the intensity of the finished image.

- **Contrast** (-100, 100) – Adjust the perceived difference between light and dark regions of the image.

KnockMeBlackOut

Jobs menu >> **Production Plug-ins** >> **KnockMeBlackOut**

The KnockMeBlackOut command is optimized for creating an underbase for either a black or near-black garment color. If you have an image that already has a black background, and you want to print onto a black shirt, this plug-in effectively provides a one-hit sequence for preparing the image. Use of this feature requires Bitmap graphic formats such as BMP, PSD, PNG, TIF, JPEG. PDF and EPS files will not work with this feature.

1. Choose the **KnockMeBlackOut** command, and the preview dialog will show two versions of the image.
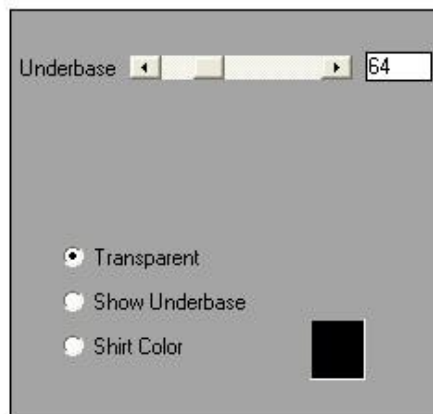
The top image will show the original appearance, and the bottom image will show the result generated by the **KnockMeBlackOut** plug-in.

2. By adjusting the **Underbase** slider, this allows you to vary the shades of gray that will be "knocked out" of the image.

The KnockMeBlackOut Controls

- **Preview**- The original image is shown above the filtered image. At the bottom-right is a zoom control for inspecting the filter results. When the zoomed image does not fit within the available space, click and drag to reposition the preview.

- **Transparent** - This is a preview mode that shows how the image will appear once the plug-in is applied. This is the best view for inspecting the image colors that will be printed.

  All transparent areas are denoted by a "checkerboard" pattern where the garment color will show through. The fainter the checkerboard pattern, the more underbase that will be printed.
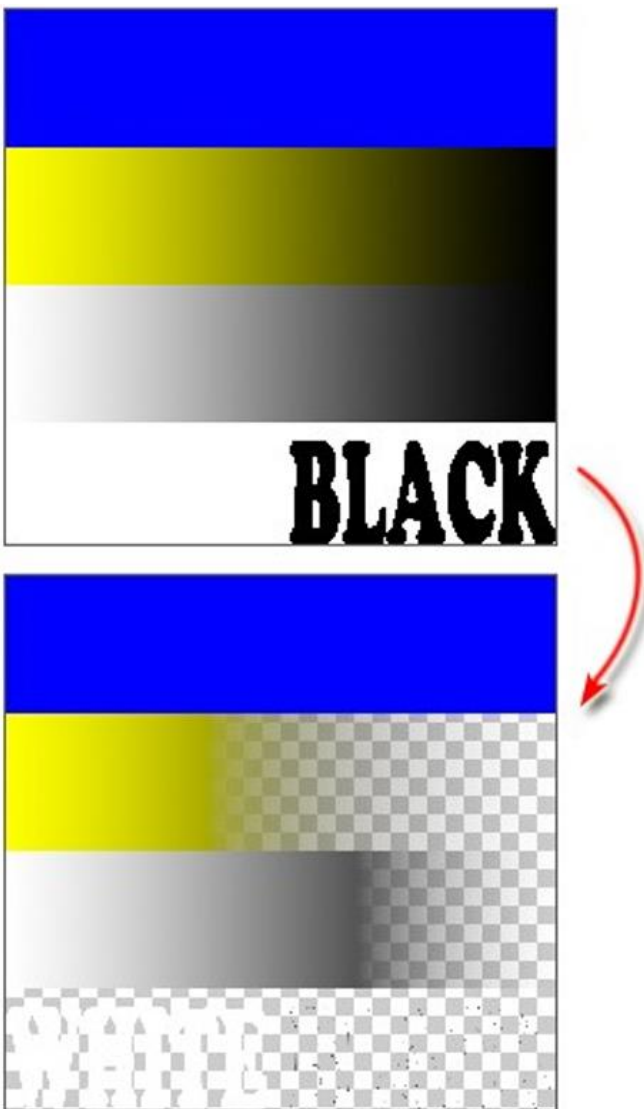
Original Image

Before using KnockMeBlackOut, we setup our original image with the following:

1. A solid blue strip
2. A yellow-to-black gradient fade
3. A spot white-to-black gradient fade (i.e., a white ink is part of this gradient)
4. The word "WHITE" (with white text color)
5. The word "BLACK" (with black text color)

Transparent Mode (checker pattern = garment color)

In the KnockMeBlackOut preview, the **Transparent** option will use a checker pattern where nothing is printed. For our original image, the preview shows:

1. The solid blue that will be printed.
2. The yellow color that gradually blends to the garment color.
3. The printed spot white that gradually blends to the garment color.
4. The print spot white of the word "WHITE"

For the word "BLACK," no ink is printed.

- **Show Underbase**- This preview mode shows the white underbase that will be created.

  Note that the preview is inverted, such that black areas represents the white underbase, and the white areas will be applied with underbase.

  Gray areas will represent a thin underbase layer will be printed to allow some of the garment color to show through
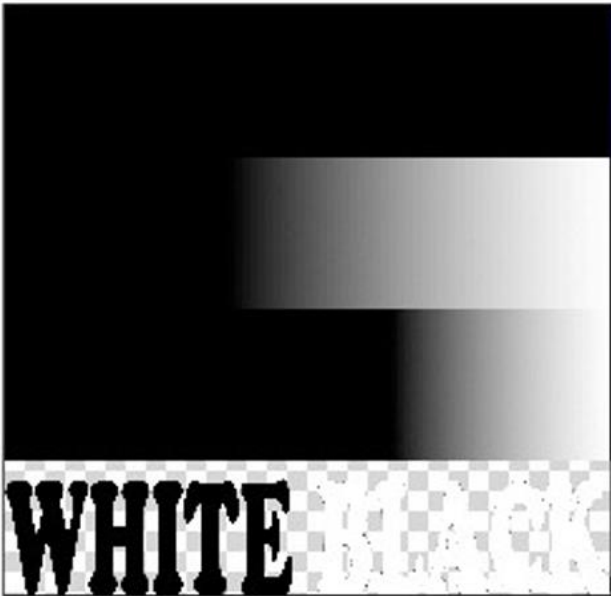
Show Underbase Mode (black = applied underbase)

The **Show Underbase** option uses black to represent the printed white underbase, and a checker pattern where nothing is printed.

1. Solid black that represents solid white underbase. The solid blue color will be printed atop the underbase.
2. A black strip that fades to gray. The underbase is strongest at the left, where the yellow needs dominate the garment color.
3. A black strip that fades to gray at the far-right. Again, the The underbase needs to be strongest at the left, where the white needs to dominate the garment color.
4. The word "WHITE" appears black, since a solid white underbase will be applied here.
5. The word "BLACK" appears white, since zero underbase will be applied.

Of course, printing black ink on a black garment in point (5) does not make sense, and is only used here as an example.

- **Shirt Color** - This preview mode combines the garment color, underbase and image colors to show the preview as it would appear on the finished garment. The color picker can be used to choose the specific hue that represents the garment color.

Shirt Color Mode

(show garment color mixed with image)

The **Shirt Color** option shows the image colors as they will appear when printed on the garment, and a checker pattern where nothing is printed.

1. A solid blue strip. The white underbase has been applied, and only blue should be visible on top.
2. A yellow-to-black gradient fade. Inspection of the garment will show that less yellow is printed as the gradient blends into the black garment color.
3. A spot white-to-black gradient fade. Inspection of the garment will show that less white is printed as the gradient blends into the black garment color.
4. The word "WHITE" should appear as a solid white.
5. The word "BLACK" will preview as black because it matches the black garment material.

Of course, printing black ink on a black garment in point (5) does not make sense, and is only used here as an example.

- **Underbase** - Use this field to adjust the underbase strength (0..255) that will be applied to the garment. The default underbase setting is 70 (about 25% of maximum).

  Increasing this value will cause more underbase to be laid down, which will increase the perceived color brightness in the printed image.

  10   64   128   255
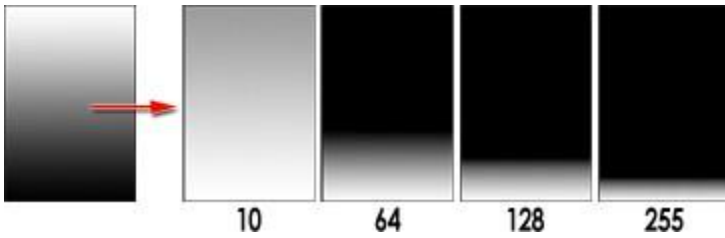
Reset - Set all the dialog controls to their recommended defaults.

Note: Changing the underbase setting does not change areas that will have 100% white ink in the underbase, nor area that require no white ink in the underbase. Instead, the underbase setting will change the amount of white ink used to blend the black garment color into the image colors (i.e., in the shadow regions of the image). In effect, increasing the underbase can cause shadow regions of the original image to appear lighter and more visible.

KnockMeColorOut

Jobs menu >> **Production Plug-ins** >> **KnockMeColorOut**

This **KnockMeColorOut** command is optimized for creating an underbase for a specific garment color.
However, if the garment color is black or near-black, then please refer to the **KnockMeBlackOut** plug-in.
Use of this feature requires Bitmap graphic formats such as BMP, PSD, PNG, TIF, JPEG. PDF and EPS files will
not work with this feature.

1. Open or create the design that will be printed.
   Note: In PhotoShop, the KnockMeColorOut plug-in does not work with images on the default
   Background layer. If the image is on the default Background layer, then you must create a duplicate
   of the image on a new layer, and then delete the old Background layer.

2. Choose the **KnockMeColorOut** command, and the preview dialog will show two versions of the image.


> The top image will show the original appearance, and the bottom image will
> show the result generated by the **KnockMeColorOut** plug-in.

3. By adjusting the **Underbase** slider, this allows you to vary the hues of the selected color that will be
   "knocked out" of the image.

The KnockMeColorOut Controls

- **Preview**- The original image is shown above the filtered image. At the bottom-right is a zoom control for inspecting t the zoomed image does not fit within the available space, click and drag to reposition the preview.

- **Transparent** - This is a preview mode that shows how the image will appear once the plug-in is applied. This is the b the image colors that will be printed.

All transparent areas are denoted by a "checkerboard" pattern where the garment color will show through. The fainter pattern, the more underbase that will be printed.
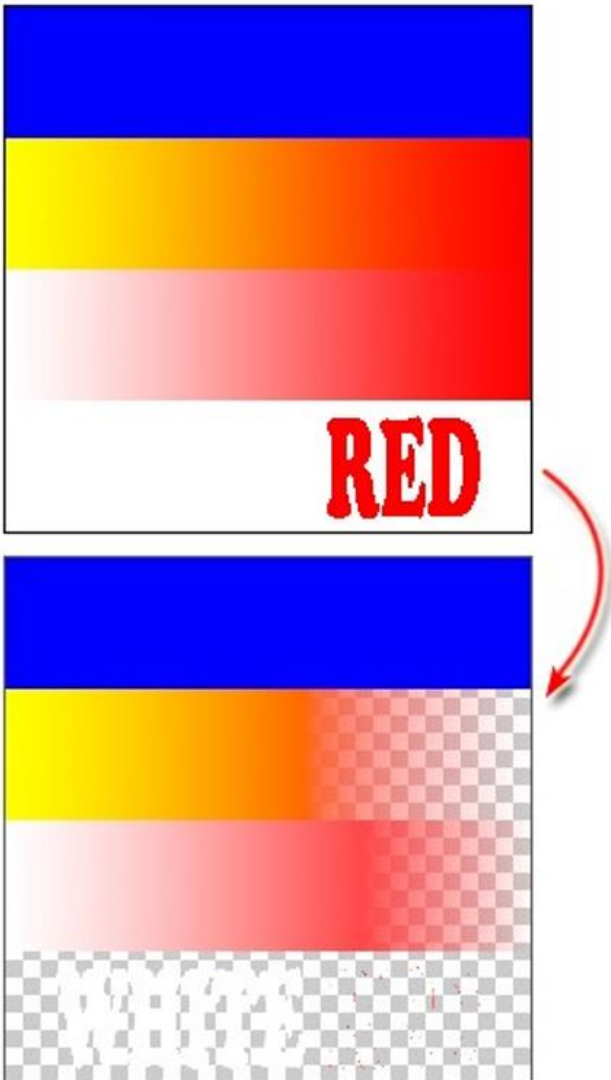
Original Image

Before using KnockMeColorOut, we setup our original image with the following:

1. A solid blue strip
2. A yellow-to-red gradient fade
3. A spot white-to-red gradient fade (i.e., a white ink is part of this gradient)
4. The word "WHITE" (with white text color)
5. The word "RED" (with red text color)

Transparent Mode

(checker pattern = garment color)

In the KnockMeColorOut preview, the **Transparent** option will use a checker pattern to represent where the garment color will show through. For our original image, the preview shows:

1. The solid blue that will be printed.
2. The yellow color that gradually blends to the garment color.
3. The printed spot white that gradually blends to the garment color.
4. The print spot white of the word "WHITE"

For the word "RED," no ink is printed

- **Show Underbase**- This preview mode shows the white underbase that will be created.

Note that the preview is inverted, such that black areas represents the white underbase, and the white areas will underbase.

Gray areas will represent a thin underbase layer will be printed to allow some of the garment color to show through.
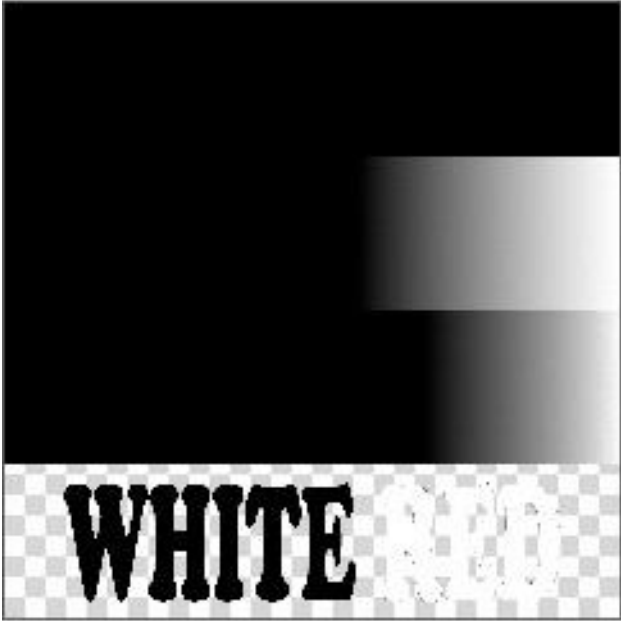
Show Underbase Mode

(black = applied underbase)

The **Show Underbase** option uses black and shades of color to represent the printed white underbase, and a checker pattern where nothing is printed.

1. Solid black that represents solid white underbase. The solid blue color will be printed atop the underbase.
2. A black strip that fades to gray. The underbase is strongest at the left, where the yellow needs dominate the garment color.
3. A black strip that fades to gray at the far-right. Again, the underbase needs to be strongest at the left, where the white needs to dominate the garment color.
4. The word "WHITE" appears black, since a solid white underbase will be applied here.
5. The word "RED" appears white, since zero underbase will be applied.

Of course, printing red ink on a red garment in step (5) doesn't make sense, and we use this example for the sake of comparison.

- **Shirt Color** - This preview mode combines the garment color, underbase and image colors to show the preview as i finished garment. The color picker can be used to choose the specific hue that represents the garment color.


Shirt Color Mode

(show garment color mixed with image)

The **Shirt Color** option shows the image colors as they will appear when printed on the garment, and a checker pattern where nothing is printed. For our example, the color picker has been set to red.

1. A solid blue strip. The white underbase has been applied, and only blue should be visible on top.
2. A yellow-to-red gradient fade. Inspection of the garment will show that less yellow is printed as the gradient blends into the red garment color.
3. A spot white-to-red gradient fade. Inspection of the garment will show that less white is printed as the gradient blends into the red garment color.
4. The word "WHITE" should appear as a solid white.
5. The word "RED" will preview as red because it matches the red garment color.

Of course, printing red ink on a red garment in point (5) does not make sense, and is only used here as an example.

- **Underbase** - Use this field to adjust the underbase strength (0..1000) that will be applied to the garment. The default underbase setting is 100 (about 10% of maximum).

  Increasing this value will cause more underbase to be laid down, which will increase the perceived color brightness in the printed image.

With an Underbase setting of 100, only about 10% of the selected hue is "knocked out," which provides a greater background contrast with the shirt color. This would be appropriate when printing onto a black shirt, so as to retain more of the red image.

With an Underbase setting of 650 (65%), this would be appropriate for printing to a red shirt. Less ink would be used to print the image color, thereby allowing the image to blend more naturally into the shirt color.

- **Reset** - Set all the dialog controls to their recommended defaults.

  Note: Changing the underbase setting does not change areas that will have 100% white ink in the underbase, nor area the underbase. Instead, the underbase setting will change the amount of white ink used to blend the garment color into shadow regions of the image). In effect, increasing the underbase can cause shadow regions of the original image to appear lighter and more visible.

Transparency Opacity

Some image file formats support the inclusion of an alpha channel, which is essentially a grayscale image that supplements the image. The alpha channel is often used to indicate where portions of the job should be transparent, thereby allowing the underlying garment material to show through.

In the case of printing to black (or color) garment material, the alpha channel can be used to indicate areas (and to what degree garment color should show through, such that the printed colors will blend more naturally into that of the garment. Not only is less toner required to complete such jobs, but the printed colors will blend more naturally into that of the garment.

In the following screenshots, the left-hand image is the original color image (a black squirrel amidst green grass), and the right-hand image is an alpha channel grayscale that has been specifically designed to indicate the blackest portions of the color image. In the lightest (white) portions represent areas that will show through, whereas black will be opaque. When printed, less ink will be according to the lightest portions, thereby allowing the garment to show through in those regions (presumably for black garment material).

The same concept can be applied with color garment material, such as "knocking out" red in a design that will be printed to material.
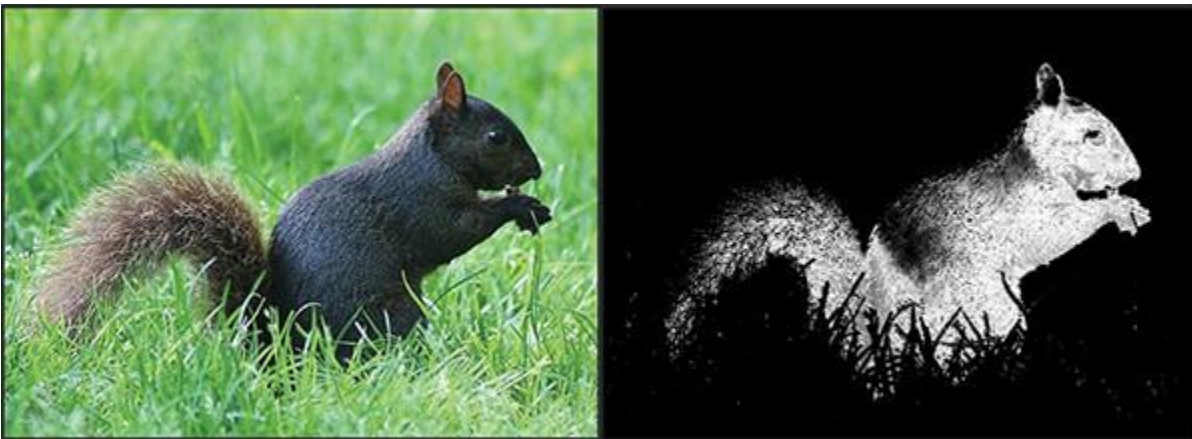
When using transparency to knock out portions of the printed image, a particular concern is the quality of gradient transition image and garment colors, since it is desirable to obtain the most seamless transition. If the alpha channel is not obtaining the desired quality, then the Transparency Opacity tool in iColor® ProRIP can be used to adjust the alpha channel.

For example, the following screenshot shows the **Transparency Opacity** dialog. The top image is the alpha channel, and the bottom image is a preview. Note that the color picker is black to indicate a black garment color, so the preview image shows black where the black garment will show through in the resulting print.
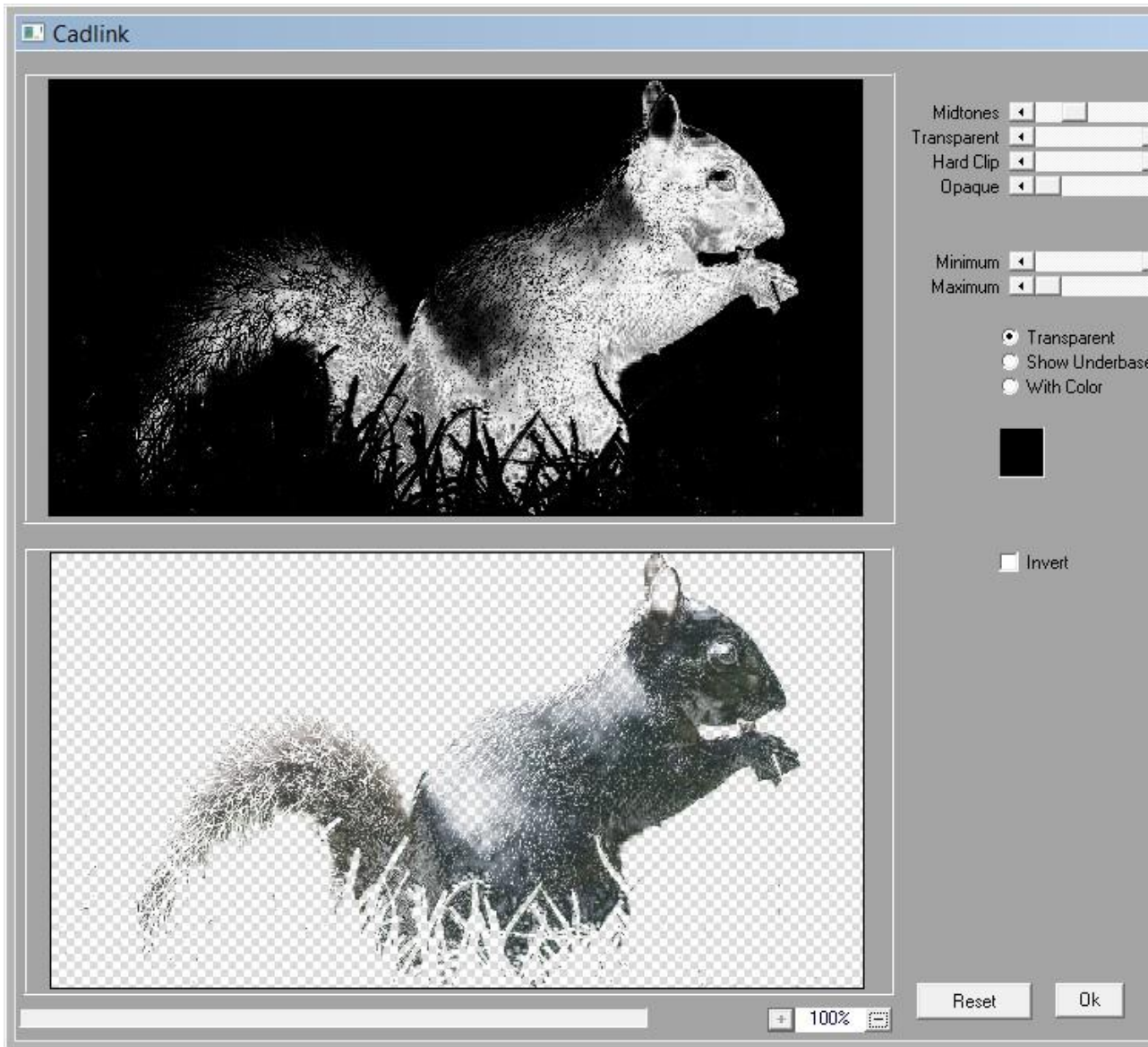
The dialog provides controls for adjusting the transition between white and black regions of the alpha channel. The alpha channel, like any image, is composed of shadow, midtone and highlight regions. In term of grayscale values that range from 0 to 255, shadows have low values approaching 0, and highlights have high values approaching 255. The midtones are the intervening shades between shadows and highlights.

Midtones - This setting represents the approximate middle ground between shadows and highlights, such that the number of grayscale values is balanced between shadow/midtones and midtones/highlights.

Transparent - The white regions of the alpha channel have a grayscale value of 255 (i.e., fully transparent). Reducing this value will reduce the white alpha regions, which allows more ink to be laid down in the transition areas (i.e., more coverage of the garment material).

Hard Clip - The transition areas between white and black represent the blending from image color to garment color, usually in the form of a gradient. Reduce the Hard Clip setting to create a sharper gradient transition, which makes it less likely for specks of ink to occur within gradients.

Opaque - Increasing this value above zero will cause more of the image to be evaluated as black ink, thereby knocking out more of the image, and laying down less ink.

Minimum and Maximum - The alpha channel , being a grayscale, has gray values that range from 0 (black, maximum opacity) to 255 (white, completely transparent). One way of considering the gray values (0..255) is as a series of steps that allow details to be discerned within the grayscale.
By adjusting the Minimum and Maximum values to less than (0..255), the alpha channel will effectively have less of a range of detail available. However, adjusting this range can be necessary to omit the blackest and whitest portions of an "unbalanced" image that (say) has undesirable artifacts.

Preview Mode
The bottom preview image has three preview modes.
Transparent - Use this option when the alpha channel is being used to knock out black (or color) from an image.

Show Underbase - Use this option when the alpha layer is being used to define where a white underbase ink should be applied before printing the color image.

With Color - Use the color picker to choose the approximate garment channel, so the image can be previewed as it will appear when printed.

Invert - Flip the white and black values of the alpha channel, such that the transparent areas are reversed.

Cleanup Black

Cleaning the black within an image will adjust near-black pixels to make them black, which should cause the blacks to appear more solid. There are three degrees of Cleanup Black (x1, x2, and x3) that can applied.

| **Original** | **Cleanup Black x1** | **Cleanup Black x3** |

Cleanup White

Cleaning the white within an image will adjust near-white pixels to make them white, thereby increasing the overall brightness of the image. There are three degrees of Cleanup White (x1, x2, and x3) that can applied. Be aware that increasing the intensity of white pixels can cause details to be lost within the highlight regions of the image.

| Original | Cleanup White x1 | Cleanup White x3 |

Contrast

The Contrast command adjusts the darkest blacks to black, and the lightest whites to white, to produce a more vibrant image.

| Original | With Contrast Adjustment |

Increase Saturation

The **Increase Saturation** command will evaluate the job image and seek to obtain greater vibrancy from the colors.

| Original | With Saturation Adjustment |

Make Darker

For the darkest regions of an image, the **Make Darker** commands will cause those regions to print closer to black. When using these commands, be cautious of losing details within the shadow regions of the image.

| Original | Make Darker x1 | Make Darker x2 |

Make Lighter

The **Make Lighter** commands cause the lightness within an image to be more prominent.

| Original | Make Lighter x1 | Make Lighter x2 |

Basic Application Printing

The secret of really good garment printing is integrating the garment color into the design that is being printed onto the garment. When done properly, the image colors will blend into the garment, and the garment color will appear seamless wherever possible. iColor® ProRIP provides unique tools that help you to accomplish specialized tasks for garment printing and achieving the best results with minimal work each time.

In this chapter are special workflows for garment printing from PhotoShop, Illustrator, and CorelDraw. In addition, general workflows are provided for other design applications, such as Xara, GIMP, etc.

Printing to White Garments

Printing to a white garment is straight-forward because it is like printing an image to a white sheet of paper; the colors are simply absorbed into the garment, and the image is reproduced. As such, a minimal of file preparation (if any) is required when printing to white garment material.

Printing to Black or Color Garments

In contrast to white garments, printing on either black or color garments requires a specialized workflow to create an "underbase" layer that lays down a white primer, such that the garment color does not produce a hue shift in the image printed on the garment. This is similar to (say) house painting, where a white priming coat of paint is applied, so that the final layer of paint is not "polluted" by dark surfaces that existed prior to the primer.

Simulating the Shirt Color

When editing the design in your graphic design software, it can be helpful to create a solid fill background object that simulates the garment color for you. However, take care to hide/delete the background object before printing.

For design software that allow you to organize a design onto layers (e.g., PhotoShop, CorelDraw, etc.), put the background object on its own layer, and then hide the layer before printing. In this manner, the background object can be quickly hidden as required, such as after doing subsequent edits to the design.

Underbase Shortcuts - Send to iColor® ProRIP

When iColor® ProRIP is installed, special Send to iColor® ProRIP plug-ins are created for your PhotoShop, Illustrator and CorelDraw design applications, such that your designs can sent directly to iColor® ProRIP. Sending designs in this fashion eliminates the extra steps required by the **File** menu >> **Print** dialog, and underbase information is automatically generated. In this manner, iColor® ProRIP streamlines the garment printing workflows for your designs.

Tips for Image File Formats

The **File** menu >> **Print** command will discard the alpha layer (i.e., transparency) information that was prepared for the image, which prevents iColor® ProRIP from using the alpha layer to generate an underbase layer. As such, it is necessary to save your image in either PSD, TIFF or PNG format, which can then be imported into iColor® ProRIP.

Likewise, the following are common situations where it is necessary to save your image file and bring it into the iColor® ProRIP window:

> The customer is providing the artwork, and you wish to avoid further editing of the artwork. The design computer is separate from the computer on which iColor® ProRIP is installed.
>
> The design computer is a Mac OSX system.

If you need more of an automated system of printing between networked computers, then it is possible to configure a **Hot Folder** in iColor® ProRIP, such that copying the image file into the hot folder is automatically detected and printed.

Saving a PSD File Out of PhotoShop

> Saving in PSD format is encouraged because it provides the greatest compatibility when making further edits in PhotoShop.
>
> Before saving the image, make certain that there will be maximum compatibility between PSD and PSB files. This can be set via **Edit** menu >> **Preferences** >> **File Handling** >> **Maximize PSD and PSB File Compatibility** = Always.
>
> Alternatively, this can be set to **Ask**, which will prompt you each time that a PSD file is saved.
>
> With maximum compatibility with PSB, most PSD files should work without issue. However, if your image is composed of multiple layers, particularly with text and objects each with their own underbase, then it may be necessary to save the image as a single layer job. Use the **Layers** menu >> **Merge Layers** command to collapse such layers before saving.
>
> When saving, always tick the **ICC Profile** checkbox, such that an embedded profile is saved with the image.
>
> In most cases, you will want to clear the **Layers** checkbox = OFF. This will cause the design to be flattened to a single layer, which prevents stray (unnoticed) transparency within the design from interfering with the underbase or spot channel information that you have prepared.

Exporting a PSD File from Illustrator

Use the following steps when creating a PSD file from Illustrator:

> **1)** Choose **File** menu >> **Export**
>
> 2) Choose a location and filename for saving.
>
> 3) The **PhotoShop Export Options** dialog will open.
>
> 4) Set **Resolution** = 300 ppi
>
> 5) Click the **Flat Image** option.

6) Clear the **Anti-alias** checkbox.

7) Tick the **Embed ICC Profile** option.

8) Click **OK** to continue.

TIFF Format

When saving in TIFF format, tick the **Layers** checkbox.

When saving, always tick the **ICC profile** checkbox, such that an embedded profile is saved with the image. If available, then tick the **Save Transparency** checkbox.

PNG Format

The PNG format does not support the embedding of color profiles. As such, more care might be required to ensure that the correct profiles are used with the PNG file, especially if you are reusing a PNG file from a previous job.

JPEG Format (special mention)

Saving as JPEG is not workable. Though the specification for JPEG files does allow for storing underbase information, PhotoShop does not currently support storing of underbase information in JPEG format.

Please refer to the Help Topics file (Basic & Advanced Application Printing) within the ProRIP program for further information regarding printing and advanced job preparation from Photoshop, Illustrator and CorelDraw

Overview of the Queue Menu Wizards

Start with the **Set Maximum White Ink** wizard, and continue with each subsequent wizard that is relevant to your testing. You will quickly see the logic in how these charts help you to winnow out the bad results.

Using a notebook, keep track of your choices, including comments about your successes with the printed charts. By building a test history, this will give you experience for the future when want to evaluate other garment manufacturers.

Set Maximum White Ink

It is the white ink that bonds with the garment pretreatment, and the color inks bond to the white. As such, you want to determine the maximum amount of ink that the garment can absorb, without causing bleed issues.

Setup Black Removal

For printing to black garment material, you want to determine how much black ink that you can remove from the printed graphic, so that you reduce ink usage and help the graphic blend more naturally.

Setup White Under Black

For printing to either color or black garment material, most DTG printers require white ink to be printed beneath all colors, otherwise those areas will fade when the material is washed. With this in mind, for each of your printed charts, you should perform actual wash tests to observe how much image fading occurs.

Set White Choke

As a precaution against registration errors, choking the white underbase will help to avoid the risk of white appearing along the edges of the artwork.

Setup Color Boost

When transparency information is being used to cause portions of the garment to show through the printed graphic, this will cause flattening of the printed colors, causing them to appear less vibrant. To compensate for this, the color boost setting will compensate for the flattening by increasing the amount of color ink.

Setup Photo Merge

When printing a job that combines both graphic elements (e.g., a logo) with photographic elements (e.g., a landscape), the colors of both graphic and photograph can be best retained by blending a Relative rendering intent (i.e., best for graphics) with a Perceptual rendering intent (i.e., best for photographs).

Set Maximum White Ink

Queue menu >> **Setup Maximum White Ink**

You need different amounts of white ink for different garment material. This is particularly true when comparing garment materials from different manufacturers, where the amount of white underbase will vary when seeking a solid, opaque white.

For the following two shirts from different manufacturers, each were printed using the same pre-treatment and queue settings, but the quality varies according to the garment quality.
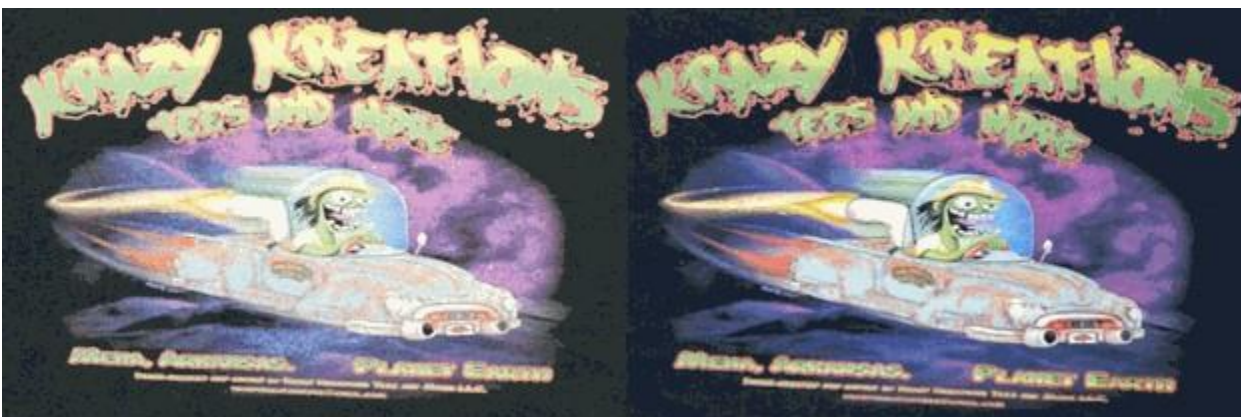
Though this emphasizes the need to obtain high quality materials that are suitable for garment printing, it also illustrates the importance of determining the maximum amount of white underbase that can be applied. Still, care must be taken, otherwise too much ink will cause bleed issues, such as white speckles that become visible after the heat process.

Set Maximum White Ink Dialog

The Set Maximum White Ink dialog is a wizard that will guide you to print a series of test images, whereby you will be able to quickly determine the correct white underbase for obtaining the best print quality.

1. Choose **Queue** menu > **Set Maximum White Ink**

2. The **Setup Black Removal** dialog will open to the **Page Size** settings.

3. Set the **Page Size**

    Several copies of your test image will be arranged on this page.

4. For the **Graphic**, click **[...]** to choose your test image file.

    It is important to use an image file that is representative of the sort of jobs that you will be performing.

    From the iColor® ProRIP installation directory, image files are available in the Rip\system\targets subdirectory.

5. Set the size at which each test image will be printed.

6. At the right, the preview will show how many test images fit on the page.

7. Click **Next** to proceed with the **KnockMeBlackOut Setting** page.

Using your test image, this page will create a series of charts that vary according to a range of KnockMeBlackOut settings.

Enter the preferred white ink % from the printed chart.

Max White ink chart settings

Minimum	40 %
Maximum	100 %
Increment	20 %

Print Max White ink chart

80 %

Run Setup black removal

Run Setup white under black

8. For example, set the **KnockMeBlackOut chart settings** as follows:
Set Minimum = 30
Set Maximum = 75
Set Increment = 15
In other words, there will be four charts with black removal values of 30, 45, 60, and 75.

9. Click the **Print KnockMeBlackOut chart** button.

10. In iColor ProRIP, the print job will be added to the queue.

Name	Status	Print Mode	Copies
▶ Rusty truck.b...	Pending	Black Shirts	1

Rusty truck.bmp

Status: Pending
Print Mode: Black Shirts
Copies: 1
Device:
Port: FILE
Time: Fri Nov 10 08:34:51 2017
Job Spooled: None
Substrate: None
Pages: -
Dimensions: Page: 6.07 in x 10.50 in
Open Page:
Job Cost: -
File Type:

11.   For each chart that is printed, its black removal value will be printed alongside that chart.

12.   After identifying the chart that you consider to have the highest quality, return to the dialog and enter the black removal value.

Enter the preferred white ink % from the printed chart.

Max White ink chart settings

Minimum	40 %	
Maximum	100 %	
Increment	20 %	

Print Max White ink chart

80 %

Run Setup black removal

Run Setup white under black

13.   (Optional) In addition to determining the white percent value, you can proceed with the following two wizards:

●   **Run setup black removal** – For black shirt queues, this option is equivalent to choosing **Queue** menu > **Setup Black Removal**.

● **Run setup white under black** – For color shirt queues, this option is equivalent to choosing **Queue** menu > **Setup how much white to use under black**.

14.   Click **Next** to proceed to the **Saving Settings** page.

15.   You are presented with three choices as to where your changes will be set:

● Only apply to the queue
● Apply to current print mode
● Create a new print mode

16. Click **Finish** to commit your setting.

Setup Black Removal

Queue menu >> **Setup Black Removal**

For printing to a black substrate, the Setup Black Removal feature will help you to perform test prints that determine the optimum amount of black ink that can be removed from incoming printed jobs, such that the black garment will substitute for the removed ink.

- It is important that you perform test prints with different image files that are representative of the output that you want. Otherwise, the risk is that doing tests using a single image file will overlook issues that would have been apparent in other files.

- As you perform tests using each image file, you should collect notes about the settings that produced good results for that image. As you repeat the tests with a different image file, you can compare the results, and perhaps determine average settings that are acceptable across a wider variety of images.

- If your image files are too varied in their composition, then you could create extra queues for special cases, such as a queue that is good for holding details within the shadow regions of an image, or a queue that is more aggressive at removing black.

Setup Black Removal Dialog

The **Setup Black Removal** dialog is a wizard that will guide you to perform print tests in two stages.

- First, you will evaluate a series of test prints to determine the correct black ink removal setting.

- Second, you will evaluate a series of test prints to determine the correct amount of white underbase that will be used in areas that are semi-transparent, or where you want the substrate color to show through.

1. Choose **Queue** menu > **Setup Black Removal**

2. The **Setup Black Removal** dialog will open to the **Page Size** settings.

3. Set the **Page Size**

   Several copies of your test image will be arranged on this page.

4. For the **Graphic**, click **[…]** to choose your test image file.

   It is important to use an image file that is representative of the sort of jobs that you will be performing.

   From the iColor® ProRIP installation directory, image files are available in the Rip\system\targets subdirectory.

5. Set the size at which each test image will be printed.

6. At the right, the preview will show how many test images fit on the page.

Please select a page size of your print bed.

Page size   10x12   Size: [10.00 in x 12.00 in]   ⌄

Please select the graphic file you would like to print

Graphic   Rusty truck.bmp   ...

Please select the size you would like to print the graphic at

↔   4.00 in ⌃⌄   ⊡   3.00 in ⌃⌄

7.   Click **Next** to proceed with the **KnockMeBlackOut Setting** page.

Using your test image, this page will create a series of charts that vary according to a range of KnockMeBlackOut settings.

Enter the preferred KnockMeBlackOut value from the chart

KnockMeBlackOut chart settings

Minimum	30 ⌃⌄
Maximum	75 ⌃⌄
Increment	15 ⌃⌄

45 ⌃⌄

Print KnockMeBlackOut chart

8.   For example, set the **KnockMeBlackOut chart settings**

as follows:

Set Minimum = 30
Set Maximum = 75
Set Increment = 15
In other words, there will be four charts with black removal values of 30, 45, 60, and 75.

9.   Click the **Print KnockMeBlackOut chart** button.

10.   In iColor® ProRIP, the print job will be added to the queue.

Name	Status	Print Mode	Copies
▶ Rusty truck.b...	Pending	Black Shirts	1

Rusty truck.bmp

Status:	Pending
Print Mode:	Black Shirts
Copies:	1
Device:	
Port:	FILE
Time:	Fri Nov 10 08:34:51 2017
Job Spooled:	None
Substrate:	None
Pages:	-
Dimensions:	Page: 6.07 in x 10.50 in
Open Page:	
Job Cost:	-
File Type:	

11.   For each chart that is printed, its black removal value will be printed alongside that chart.

12.   After identifying the chart that you consider to have the highest quality, return to the dialog and enter the black removal value.

Enter the preferred KnockMeBlackOut value from the chart

KnockMeBlackOut chart settings

Minimum	30
Maximum	75
Increment	15

45

Print KnockMeBlackOut chart

13.   Click **Next** to proceed with the **White Levels** page.

- This page can involve printing multiple sets of charts, depending upon what you feel is necessary, to determine the correct amount of white underbase that should be applied.

- The white underbase is what helps the print job adhere to the substrate, and without the white ink, the printed colors will fade rapidly over time (e.g., such as when laundering a printed garment).

14. From the **Select set** drop-list, there are four series of chart variations (1-4), and each series has four samples (A- D), as indicated in the following table.

Set	Description	Chart series	Has samples
Strong White midtones-shadows	Use more white ink in the 50 90% region	1	A1, B1, C1, D1
Medium plus White midtones-shadows		2	A2, B2, C2, D2
Medium White midtones- shadows		3	A3, B3, C3, D3
Light White midtones-shadows	Use less white ink in the 50-90% region	4	A4, B4, C4, D4

Each set represents four variations of the amount of white ink that will be printed using your test image.

● These sets control how strong that white will be printed in the highlights, midtones, and shadow regions.
● The sets will not change the 100% white ink value. To change the 100% white, please refer to the Maximum White Ink feature.
● Each set affects different amounts of ink in the 30% to 95% shadow region.
● Each of these charts will print four variations with different amounts of white ink between 10% and 30%.

15. Choose the set that you want to test, and then click the **Print white levels chart** button.

● Print as many of these charts as you feel that you need for testing.
● However, where you use less white ink, you will lose color vibrancy in those areas.

16. After completing your testing, return to the dialog, choose both the set, and the sample number, of the sample that you visually observed as having the best result.

17. Click **Next** to proceed to the **Saving Settings** page.

18. You are presented with three choices as to where your changes will be set:
    - Only apply to the queue
    - Apply to current print mode
    - Create a new print mode

19. Click **Finish** to commit your setting.

Setup White Under Black

Queue menu >> **Setup how much white to use under black**

The Setup White Under Black feature can be used when printing to either a color garment, or a black garment. In the case of black garments, the following should be emphasized:

- Most DTG printers require white ink to be printed beneath all colors, otherwise those areas will fade when the material is washed.
- This fading occurs because the pre-treatment is designed to bond to the white ink, but not the CMYK.
- In addition to printing the test charts, you should perform some actual wash tests in order to observe how much image fading occurs with respect to varying percentages of white ink.
- Another consideration is that by applying a good amount of white ink under black, this will produce a glossy black.

Setup White Under Black Dialog

The **Setup White Under Black** dialog is a wizard that will guide you to perform print tests in two stages:

- First, you will evaluate a series of test prints to determine the correct amount of white underbase to print under black ink.
- Second, you will evaluate a series of test prints to determine the correct amount of white underbase to print when the substrate color will be showing partially through.

1. Choose **Queue** menu > **Setup Black Removal**
2. The **Setup Black Removal** dialog will open to the **Page Size** settings.
3. Set the **Page Size**

    Several copies of your test image will be arranged on this page.

4. For the **Graphic**, click **[…]** to choose your test image file.

    It is important to use an image file that is representative of the sort of jobs that you will be performing.

    From the iColor® ProRIP installation directory, image files are available in the Rip\system\targets subdirectory.

5. Set the size at which each test image will be printed.
6. At the right, the preview will show how many test images fit on the page.

Please select a page size of your print bed.

Page size   10x12   Size: [10.00 in x 12.00 in]   ⌄

Please select the graphic file you would like to print

Graphic | Rusty truck.bmp | [...]

Please select the size you would like to print the graphic at

↔ | 4.00 in ⌄ | ⬍ | 3.00 in ⌄ |

7. Click **Next** to continue with the **Underbase Strength** page.

    Using your test image, this page will create a series of charts that vary according to the underbase strength that will be printed under black ink.

Enter the preferred underbase strength value from the chart.

25 60% White under black

Underbase strength settings

Minimum: 19 0% White under black

Maximum: 28 90% White under black

Increment: 3

Print underbase strength chart
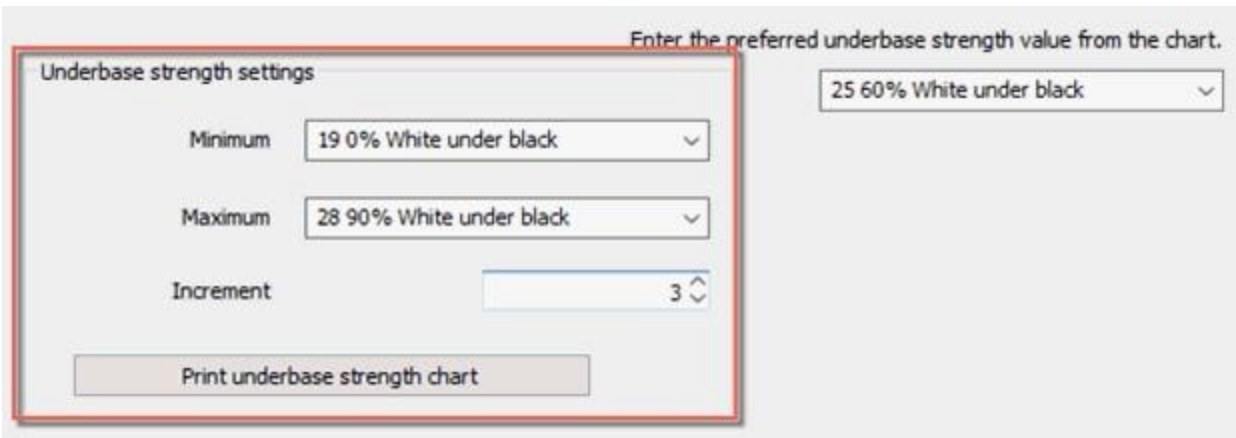
8. For example, set the **Underbase strength settings** as follows:

Set **Minimum** = 19 0% White under black

Set **Maximum** = 28 90% White under black

Set **Increment** = 3

In other words, there will be four charts with underbase strength values of 19, 22, 25, and 28.

Note: If you go below 19, then you will also be removing white from dark colored areas.

9. Click the **Print underbase strength chart** button.
10. In iColor® ProRIP, the print job will be added to the queue

Name	Status	Print Mode	Copies
▶ Rusty truck.b...	Pending	Black Shirts	1

Rusty truck.bmp 4

Status: Pending
Print Mode: Black Shirts
Copies: 1
Device:
Port: FILE
Time: Fri Nov 10 11:56:16 2017
Job Spooled: None
Substrate: None
Pages: -
Dimensions: Page: 6.07 in x 10.50 in
Open Page:
Job Cost: -
File Type:
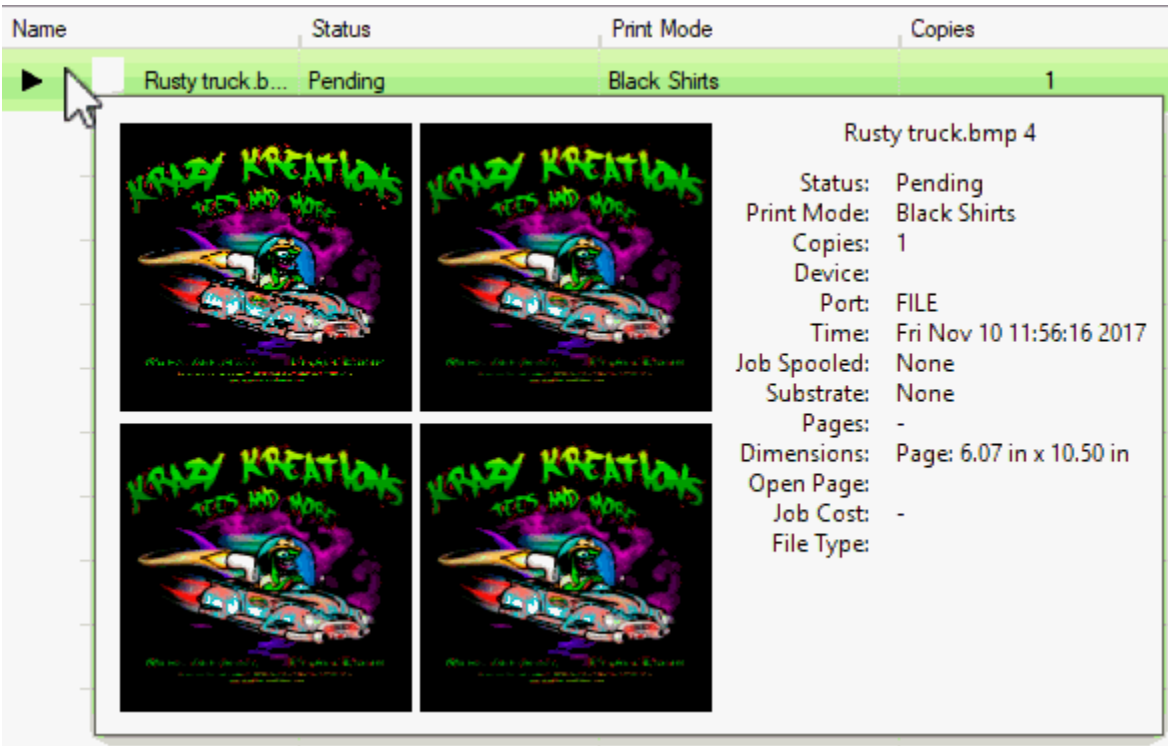
11.   For each chart that is printed, its underbase strength value will be printed alongside that chart.

12.   After identifying the chart that you consider to have the highest quality, return to the dialog and choose the underbase strength value.

> **Note**: It is recommended that wash tests be performed before choosing your underbase strength setting.

13.   Click **Next** to proceed with the **White Levels** page.

- This page can involve printing multiple sets of charts, depending upon what you feel is necessary, to determine the correct amount of white underbase that should be applied.

- The white underbase is what helps the print job adhere to the substrate, and without the white ink, the printed colors will fade rapidly over time (e.g., such as when laundering a printed garment).

  > **Note**: This wizard does not affect the 100% white ink setting, which is determined using **Queue** menu > **Set Maximum White Ink**

14.   From the **Select set** drop-list, there are four series of chart variations (1-4), and each series has four samples (A- D), as indicated in the following table.

Set	Description	Chart series	Has samples
Strong White midtones-shadows	Use more white ink in the 50 90% region	1-	A1, B1, C1, D1
Medium plus White midtones-shadows		2	A2, B2, C2, D2
Medium White midtones- shadows		3	A3, B3, C3, D3
Light White midtones-shadows	Use less white ink in the 50-90% region	4	A4, B4, C4, D4

Each set represents four variations of the amount of white ink that will be printed using your test image.
- These sets control how strong that white will be printed in the highlights, midtones, and shadow regions.

- The sets will not change the 100% white ink value. To change the 100% white, please refer to the Maximum White Ink feature.

- Each set affects different amounts of ink in the 30% to 95% shadow region.

- Each of these charts will print four variations with different amounts of white ink between 10% and 30%.

15.   Choose the set that you want to test, and then click the **Print white levels chart** button.
- Print as many of these charts as you feel that you need for testing.

- However, where you use less white ink, you will lose color vibrancy in those areas.

16.   After completing your testing, return to the dialog, choose both the set, and the sample number, of the sample that you visually observed as having the best result.

Enter the preferred white level from the chart.

White levels settings

A2

Select set   Medium plus White midtones-shadow

Run Setup white choke

Print white levels chart

17. Click **Next** to proceed to the **Saving Settings** page.

18. You are presented with three choices as to where your changes will be set:

- Only apply to the queue
- Apply to current print mode
- Create a new print mode

19. Click **Finish** to commit your setting.

Set White Choke

Queue menu >> **Set White Choke**

When printing a design that has a spot white underbase, registration issues present the risk that the white will appear along the edges of the artwork, thereby creating a halo effect. Applying a choke to the white underbase will prevent the white ink from being printed anywhere within a few pixels of the artwork edges. This choke provides a margin-of-error should it happen that the color pass does not fall precisely as intended upon the white underbase.

Set White Choke Dialog

In order to quickly determine the best choke amount, the Set White Choke feature allows you to print a series of test images, from which you will choose the choke value that obtains the best result. This choke value will then be set as the default for all subsequent print jobs.

1. Choose **Queue** menu >> **Set White Choke**
2. The **Set White Choke** dialog will open to the **Page Size** settings.
3. Set the **Page size**

    Several copies of your test image will be arranged on this page.

4. For the **Graphic**, click **[…]** to choose your test image file.

    It is important to use an image file that is representative of the sort of jobs that you will be performing.

    From the iColor® ProRIP installation directory, image files are available in the Rip\system\targets subdirectory.

5. Set the size at which each test image will be printed.
6. At the right, the preview will show how many test images will be printed.
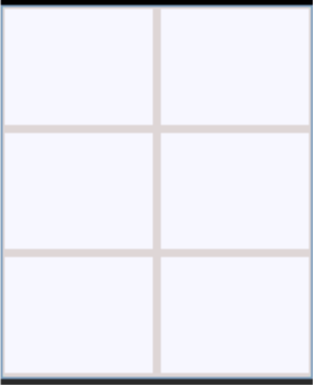
Please select a page size of your print bed.

Page size   10x12   Size: [10.00 in x 12.00 in]   ⌄

Please select the graphic file you would like to print

Graphic   Cream White shirt.bmp   ...

Please select the size you would like to print the graphic at

↔   4.00 in ⌄   ⬍   3.00 in ⌄

7. Click **Next** to proceed to the **Choke Setting** page.

Enter the preferred choke value from the chart.

3   ⌄

Choke settings

Minimum   0 None   ⌄

Maximum   5 Maximum   ⌄

Increment   1 ⌄

Print choke chart

8. For the Choke settings:
Set Minimum = 0 None
This test image will have zero choke.

Set Maximum = 5 Maximum
● It is not recommended to use a choke value higher than 5.
● A choke higher than 5 can cause the image quality to noticeably degrade.
● For example, a change in hue can occur along the edges, such that the image appears to have a stroke.
● In an extreme case, the job colors will be completely lost, creating the effect of a smear along the image edges.

Set **Increment** = 1

This will print test images from 0 to 5, using increments of 1.

9. Click the **Print choke chart** button.

10.   In iColor ProRIP, the print job will be added to the queue.

Name		Status	Print Mode	Copies
▶	Cream White ...	Pending	Black Shirts	1

Cream White shirt.bmp 4

Status:	Pending
Print Mode:	Black Shirts
Copies:	1
Device:	
Port:	FILE
Time:	Fri Nov 10 11:10:26 2017
Job Spooled:	None
Substrate:	None
Pages:	-
Dimensions:	Page: 6.14 in x 10.50 in
Open Page:	
Job Cost:	-
File Type:	

11.   Print the job, and visually examine the result, noting that each test image has been printed with its choke value.

12.   Back in the dialog, enter the choke value that produced the best test image.

Enter the preferred choke value from the chart.

3

Choke settings

Minimum   0 None

Maximum   5 Maximum

Increment   1

Print choke chart

13.   Click **Next** to proceed to the **Saving Settings** page.

14.   You are presented with three choices as to where your choke value will be set:
● Only apply to the queue
● Apply to current print mode
● Create a new print mode

15.   Click **Finish** to commit your choke setting.

Setup Color Boost

Queue menu >> **Setup Color Boost**

When printing an image that has portions where the substrate will show through, the Setup Color Boost feature will increase the amount of color ink being printed, so that the resulting colors will appear more vibrant.

Color boost is necessary because the amount of transparency information within the image is not optimized for the inks and substrate being used. In other words, for the transparent areas of the printed image, the colors will generally be scaled back too much, which reduces their effectiveness. Color boost allows you to quickly correct for this.

> **Note**: Color boost will not affect solid colors that are printed with a solid white underbase.

Setup Color Boost Dialog

The **Setup Color Boost** dialog is a wizard that will print several test copies of an image, each at a different color boost setting, and you will choose the boost setting that achieves the best result.

1. Choose **Queue** menu > **Setup Color Boost**
2. The **Setup Color Boost** dialog will open to the **Page Size** settings.
3. Set the **Page Size**

   Several copies of your test image will be arranged on this page.

4. For the **Graphic**, click **[…]** to choose your test image file.

   It is important to use an image file that is representative of the sort of jobs that you will be performing.

   From the iColor® ProRIP installation directory, image files are available in the Rip\system\targets subdirectory.

5. Set the size at which each test image will be printed.
6. At the right, the preview will show how many test images fit on the page.
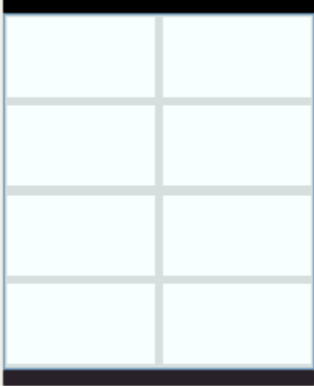
Please select a page size of your print bed.

Page size   14x16   Size: [14.00 in x 16.00 in]

Please select the graphic file you would like to print

Graphic   Cream White shirt.bmp   ...

Please select the size you would like to print the graphic at

⟷   6.00 in   ⬍   3.00 in

7. Click **Next** to proceed to the **Color Boost Setting** page.

Enter the preferred color boost value from the chart

Color boost chart settings

Minimum   1

Maximum   8

Increment   1

Print color boost chart

4

8. For the **Color boost**

    chart settings: Set

    Minimum = 1

A color boost of 1 is normal flattening (i.e., no color boost).

    Set **Maximum** = 8

A color boost of 8 is high.

    Set **Increment** = 1

This will print test images from 1 to 8, in increments of 1.

9. Click the **Print color boost chart** button.
10. In iColor® ProRIP, the print job will be added to the queue.

Name	Status	Print Mode	Copies
▶ ☐ Cream White ...	Pending	Black Shirts	1

Cream White shirt.bmp 13

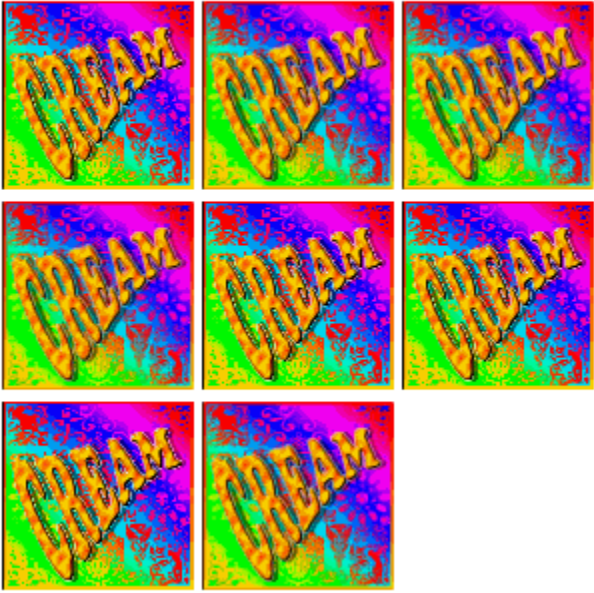|	
Status:	Pending
Print Mode:	Black Shirts
Copies:	1
Device:	
Port:	FILE
Time:	Fri Nov 10 11:14:42 2017
Job Spooled:	None
Substrate:	None
Pages:	-
Dimensions:	Page: 6.14 in x 14.00 in
Open Page:	
Job Cost:	-
File Type:	

11.   Print the job, and visually examine the result, noting that each test image has been printed with its color boost value.

12.   Back in the dialog, enter the color boost value that produced the best test image.

Enter the preferred color boost value from the chart

Color boost chart settings

Minimum	1
Maximum	8
Increment	1

Print color boost chart

4

13.   Click **Next** to proceed to the **Saving Settings** page.

14.   You are presented with three choices as to where your color boost value will be set:

- Only apply to the queue
- Apply to current print mode
- Create a new print mode

15.   Click **Finish** to commit your color boost setting.

Setup Photo Merge

Queue menu >> **Setup Photo Merge**

When printing a job that contains both graphic elements (e.g., a logo), and photographic elements (e.g., a landscape), this
presents a need to blend a Relative rendering intent (i.e., best for graphics) with a Perceptual rendering intent (i.e., best for photographs).

The Setup Photo Merge feature is used to determine the correct amount of blending (i.e., Merge setting) between these rendering intents, so that satisfactory color reproduction occurs for both the graphic and photographic elements.

Note: For printers that have a relatively large color gamut (e.g., solvent printers), you will not see a significant difference between Relative and Perceptual rendering intents. The difference is more pronounced with small color gamuts, such as with DTG printers, or when using A+B sheets with laser printers.

Setup Photo Merge Dialog

1.   Choose **Queue** > **Setup Photo Merge**

2.   The **Setup Merge for Photo Rendering** dialog will open.

3.   Set the **Page Size**

      Several copies of your test image will be arranged on this page.

4.   For the **Graphic**, click **[…]** to choose your test image file.

      It is important to use an image file that is representative of the sort of jobs that you will be performing.

      From the iColor® ProRIP installation directory, image files are available in the Rip\system\targets subdirectory.

5.   Set the size at which each test image will be printed.

At the right, the preview will show how many test images fit on the page.

Please select a page size of your print bed.

Page size   10x12   Size: [10.00 in x 12.00 in]   ⌄

Please select the graphic file you would like to print

Graphic   Cream White shirt.jpg   ...

Please select the size you would like to print the graphic at

↔   4.00 in ⌃⌄   ↕   3.00 in ⌃⌄

6. Click **Next** to proceed with the **ICC Photo Setting** page.

Using your test image, this page will create a series of charts that vary according to a range of merge settings. A lower merge will favor logo graphics, whereas a higher merge will favor photographic elements.

Enter the preferred photo merge value from the chart

Photo merge settings

Minimum   0 ⌃⌄

Maximum   100 ⌃⌄

Increment   20 ⌃⌄

Print photo merge chart

60 ⌃⌄

7. For example, set the **Photo merge settings** as follows:

Set **Minimum** = 0
Set **Maximum** = 100
Set **Increment** = 20
In other words, there will be six charts with merge values of 0, 20, 40, 60, 80 and 100.

8. Click the **Print photo merge chart** button.

9. In iColor® ProRIP, the print job will be added to the queue.

10. For each chart that is printed, its marge value will be printed alongside that chart.

11. After identifying the chart that you consider to have the highest quality, return to the dialog and enter the merge value.
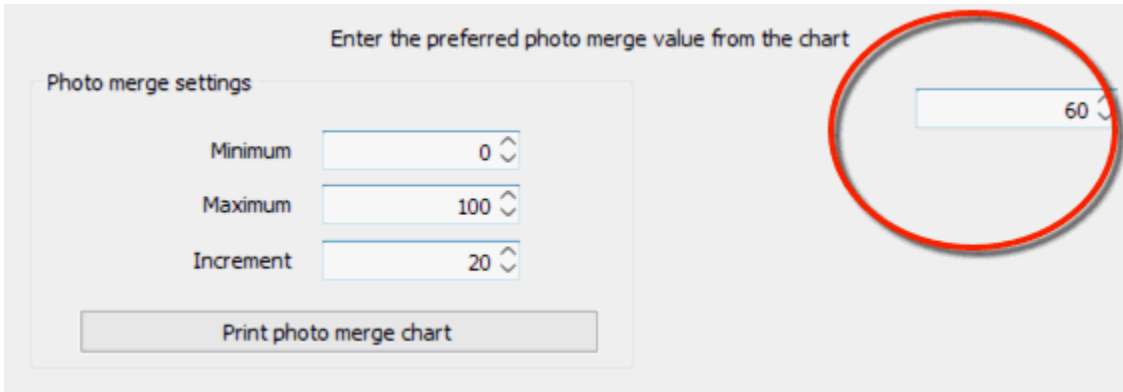
12. Click **Finish**, and the merge value will be set in the properties of the current queue.

Jobs Menu

When a print job is received in a queue, the **Jobs** menu controls can be applied to that job. Select the job and then choose from the **Jobs** menu. Alternatively, these controls are available from the context menu when right-clicking the job.

- **Restore Jobs** - Manage archived print jobs. See Job Reserve Tab and Archiving
- **Select All** - Selects all jobs in queue.
- **Select None** - Clear current selection.
- **Remove** - Delete the selected job.
- **Rename** - Change the job name.
- **Open Page** - Spooled jobs are considered closed because they contain the print data that is ready for sending to the printer. Use Open Page to discard the spool data, such that the unspooled job is available for scaling, rotating, etc.
- **Find Job (using barcode)** - Scan or enter the barcode of a printed job, and the corresponding cut portion will be located.
- **Release** - Release a held job for printing.
- **Hold** - Stop the job, regardless of whether the queue is stopped.
- **Abort** - Cancel the selected job (i.e., cease sending data to the printer).
- **Clear Error** - If a problem occurs when printing (such as paper out), the job will be flagged with an error and put on hold. After the printing problem is resolved, click **Clear Error** to remove the error flag.

If a job has encountered an error condition, then the job properties will summarize the errors. The job properties also include a detailed Log of the tasks that were completed before the error was encountered (see the **Log** tab).

- **Color Adjust** - For the selected job, open the Easy Color Adjustments dialog.
- **Add to Layout** - This command is applied to unscheduled jobs. The given job will be moved into the Active List and its layout shown in the Visual Print Manager.
- **Print** - Begin printing the job (i.e., spool the job and send the print data to the printer).
- **RIP Only (Preview)** - Spool the print data without sending to printer. The spool file is retained on the hard drive, which can be previewed by right-clicking the job and choosing **View Raw Data**.
- **Save As (Archive to Disk)** - Store the job in an archive location, such that it can be restored at a later date.
- **Generate Preview Image** - Generate a thumbnail of the job that is displayed in the Active List. Thumbnails can be automatically generated per **Tools** menu >> **Options** >> **Preview Options**.
- **Properties** - Open the **Job Ticket Properties** dialog, which displays all the settings that the job "inherited" from the queue properties.

Devices Menu

The **Devices** menu provides tools for installing printer support files, customizing print mode settings, and printing test pages to confirm print quality.

Manage Devices

Devices menu >> **Manage Devices**

The **Manage Devices** dialog is used to install new printers, and check for support file updates.

Manage Print Modes

When a new printer is installed, a collection of print modes (e.g., media profiles) are included for printing with a range of manufacturer medias, ink sets, and printer resolutions. The **Print Mode Manager** is used to inspect, rearrange, and modify the media profiles for a given printer.

- For any print mode that was installed as part of the iColor® ProRIP product, these are considered to be read-only and are not editable. However, the solution is to make a copy of the given print mode, and the copy will be writable.

- For any print mode that you have created, it is considered to be writable. As such, it is recommended that a copy be made prior to significant edits.

- For a print job that is pending (being held) in iColor® ProRIP , its print mode properties can be edited without changing the original print mode.
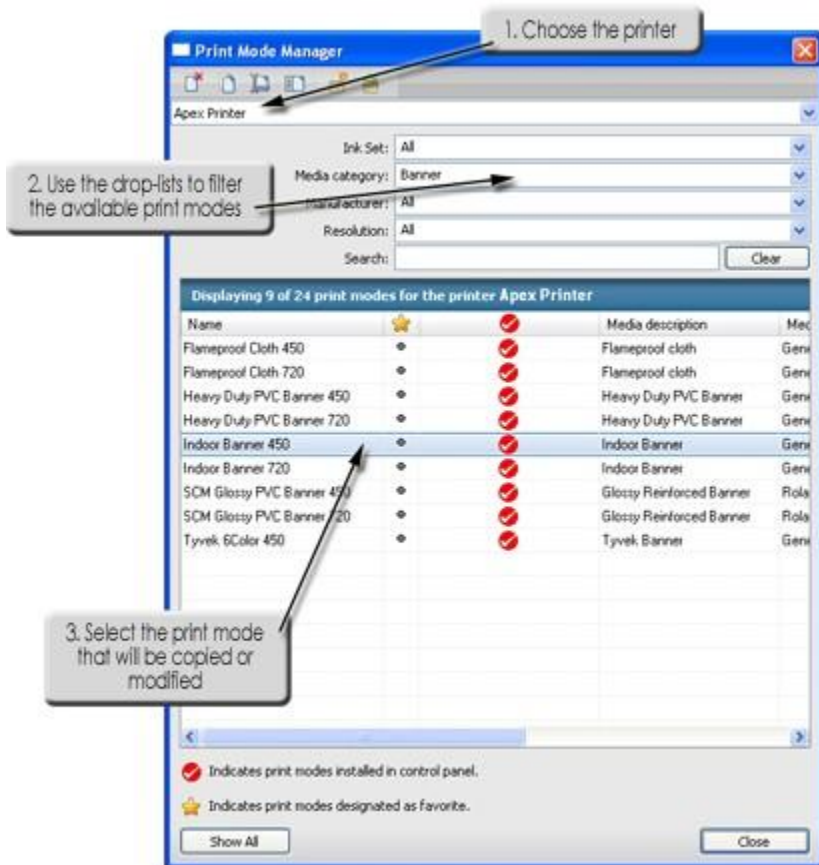
Copying a Print Mode

1. From the **Printers** menu, choose **Manage Print Modes** to open the **Print Mode Manager** dialog.
2. From the drop-list, choose the printer model. The print modes for that printer will then be listed.
3. Click the print mode, such that the name is highlighted.
4. Along the top of the **Print Mode Manager** dialog, click the **Copy Print Mode** button.

5. When prompted, type a meaningful name for the copy.
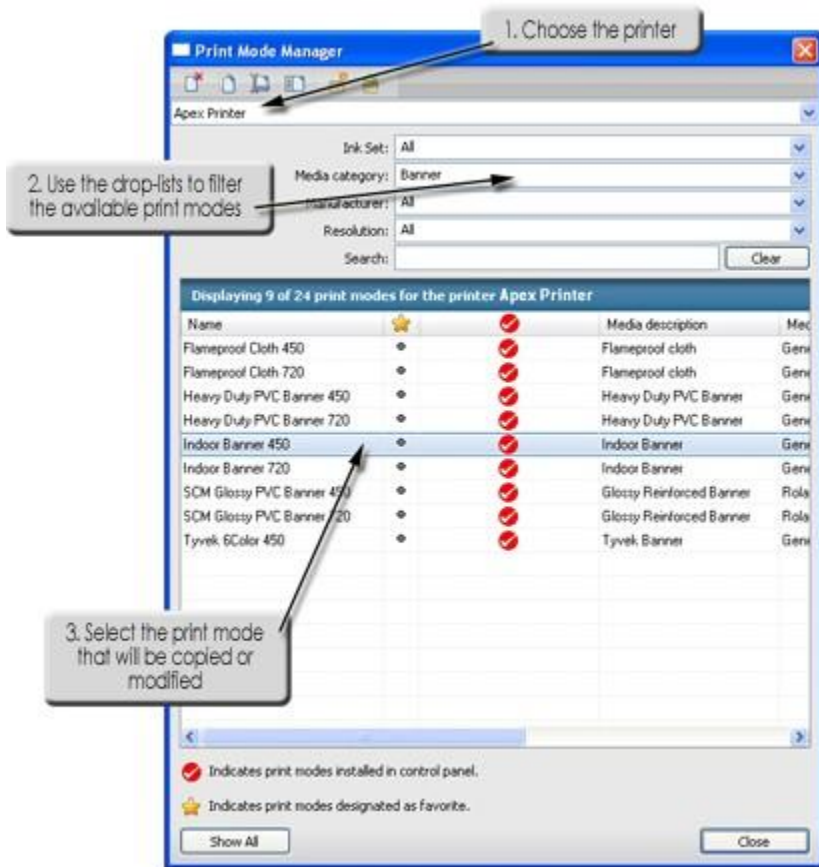
Editing a Print Mode

1. From the **Printers** menu, choose **Manage Print Modes** to open the **Print Mode Manager** dialog.

2. From the drop-list, choose the printer model. The print modes for that printer will then be listed.

3. Click the print mode, such that the name is highlighted.

4. Along the top of the **Print Mode Manager** dialog, click the **Edit Print Mode** button.

5. The **Properties** dialog for the print mode will open (see Queue Properties).

Marking Print Modes as Favorites

1. In iColor® ProRIP , choose **Printers** >> **Manage Print Modes**.
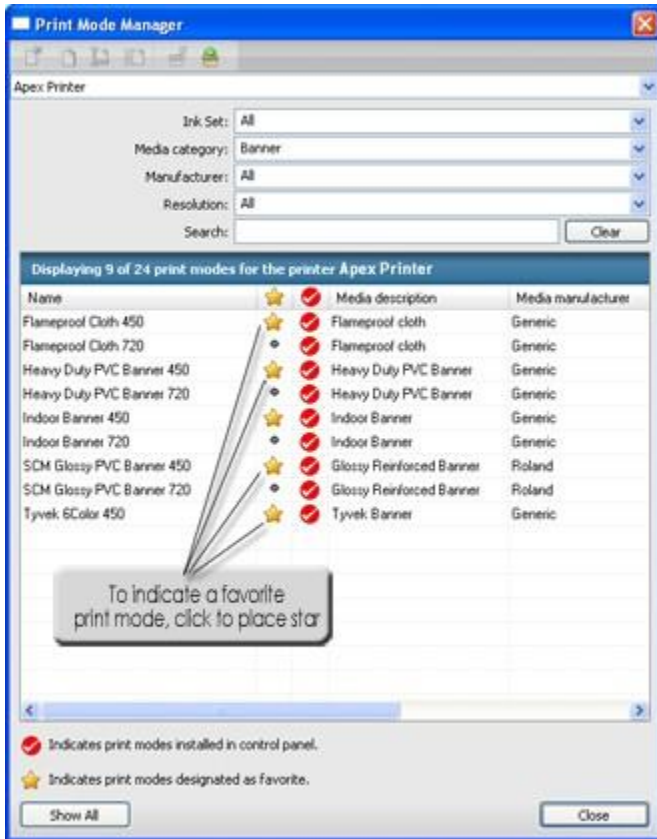
2. Next to the print mode names column, there is a "Favorite" column (as indicated by the 5-pointed star).

3. To mark a print mode as a favorite, click within the Favorite column.

4. Later, when using the **Print Mode Selection** dialog to choose a print mode, the "Star" column will indicate the print modes that are considered to be favorites.

Hiding Print Modes

To prevent users from selecting the wrong print mode, the **Print Mode Manager** dialog can be used to hide print modes.

1. In the iColor® ProRIP , choose **Printers** >> **Manage Print Modes**.

2. Set all of the drop-lists to "**All**," so that the full list of print modes are displayed.
   Note: As a memory aid, it may be desirable to use the Favorites column to mark the print modes that will not be hidden in the subsequent steps.
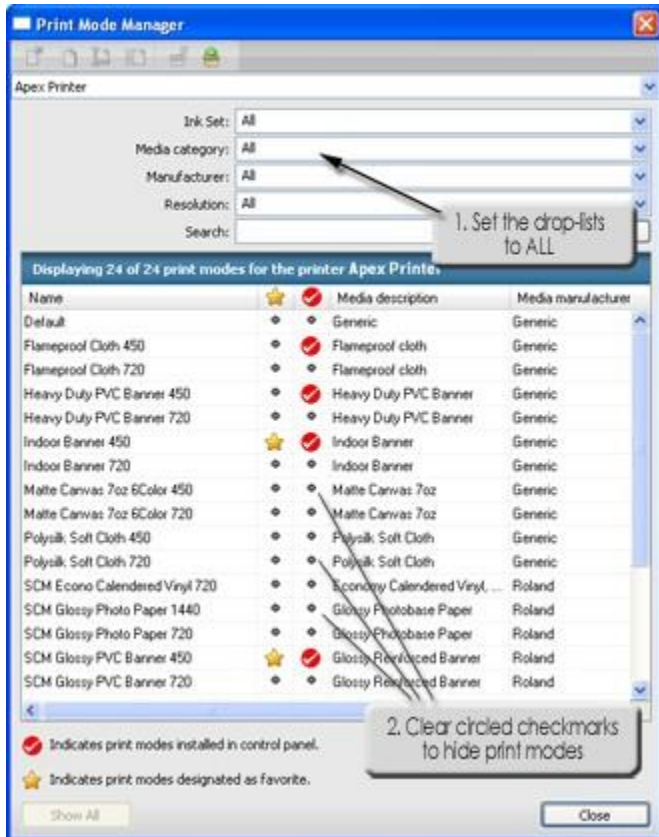
3. Next to the **Favorites** column (the 5-pointed star), there is an "Approved" column (as indicated by the checkmark within a red circle).

4. By default, all of the print modes are approved.

5. To hide a print mode, click to remove the circled checkmark within the Approved column.

6. Click **Close** to finish editing the **Print Mode Manager**.

In SignLab, only approved print modes will be selectable via the **Print and Cut Setup** dialog.

In third-party graphic software applications, only approved print modes will be selectable via the **Print** dialog.

Overriding the Print Mode Setting of a Print Job

When a print job is being held in the queue, its print mode properties can be edited prior to print. These edits will apply only to the given job without changing the original print mode.

1. In iColor® ProRIP , click the **Stop Queue** button. This will cause new print jobs to be held pending.
2. Print a job to iColor® ProRIP .
3. The print job will now be listed in the iColor® ProRIP .
4. Right-click the print job and choose **Properties**.
5. The **Job Ticket Properties** dialog will open.
6. Any changes to these dialog settings will override the print mode for this job.

Print Mode Manager Toolbar Options

Along the top of the dialog are several toolbar buttons, which are used to rearrange, copy, edit, and organize a selected print mode. Please note that it may be necessary to create a copy of a print mode before it can be edited or moved.
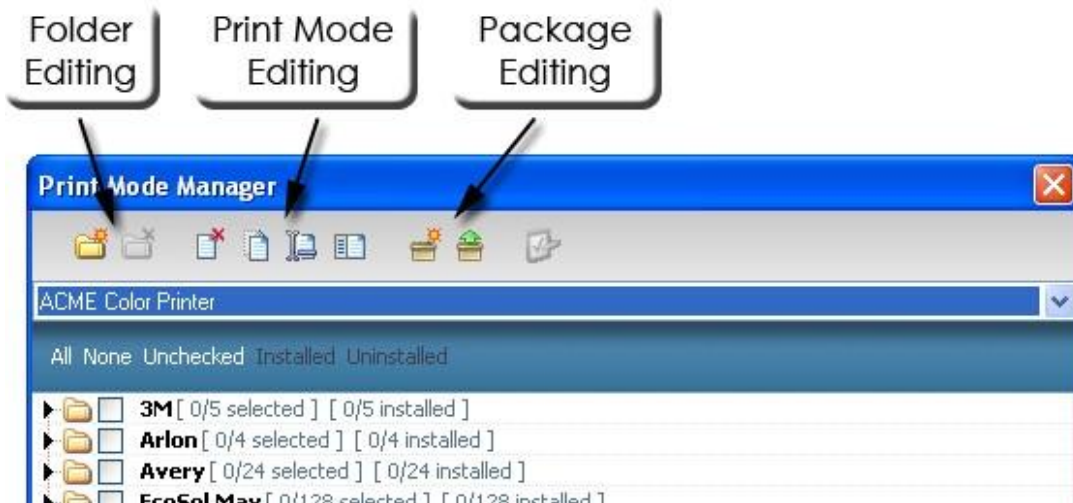
- **Folder Editing** refers to the folder icons that are used to indicate a category of print modes, such as from a specific manufacturer. After a folder has been created, your custom print modes can be dragged into the folder using the cursor.

- The **Print Mode Editing** tools are Delete, Copy, Rename, and Edit. Before editing or moving a preset print mode, it is necessary to make a copy of that print mode, which will then be editable.

- The **Package Editing** tools are used to export and import your custom print modes, such that they can be backed up or sent to another workstation. When creating a package, all of the custom print modes will be listed. Choose the print modes that should be added to the package, and then click **Save**.

Manage Print Media

Devices menu >> **Manage Print Media**

The **Printer Media Manager** dialog shows the types and dimensions of media that are available for your printer. **See also**: Media Setup Tab
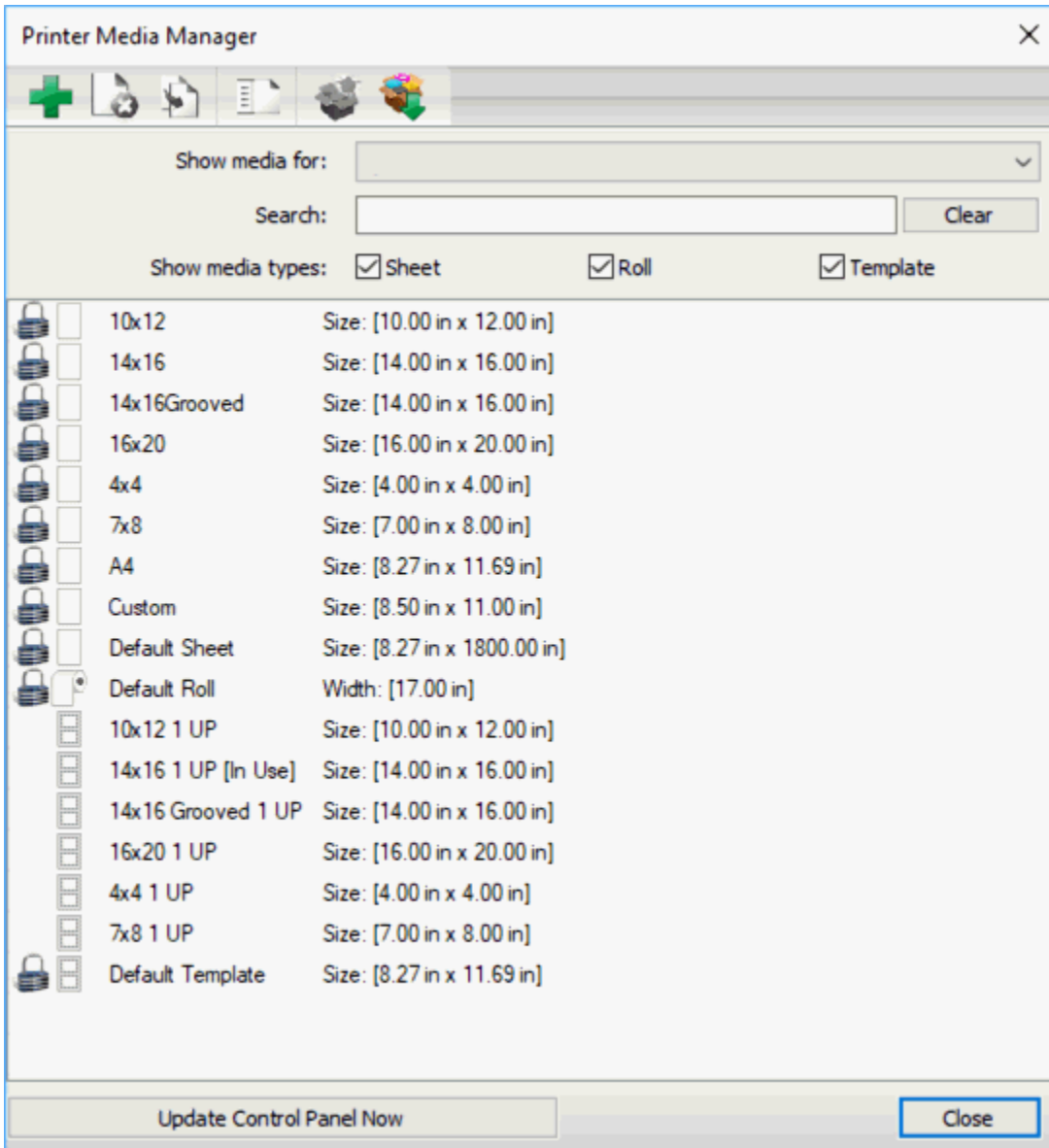
Manage Spot Colors

Devices menu >> **Manage Spot Colors**

The **Manage Spot Colors** command will open the **System Spots** dialog, which is used to define CMYK/RGB/ L*a*b* colors that will be available to all machines.

- To define a new color, click within an empty row and type the given value. Press **[Tab]** to advance to the next available cell. If pressing **[Tab]** advances to the next row, then values for the next row can be entered, and so on.

- To delete a row, click its left border, such that the entire row is selected, and then press the **[Del]** key.

System Spots

CMYK (0..100)

Spot Color Name	Cyan	Magenta	Yellow	Black
MyCyanb	100	0	0	0

RGB (0..255)

Spot Color Name	Red	Green	Blue
MyRedb	255	0	0
MyGreen	0	255	0

Lab (0..100)(-128..127)(-128..127)

Spot Color Name	Lightness	a Color	b Color
L=0 a=-128 b=-128	0.0	-128.0	-128.0
L=0 a=-128 b=-112	0.0	-128.0	-112.0
L=0 a=-128 b=-96	0.0	-128.0	-96.0
L=0 a=-128 b=-80	0.0	-128.0	-80.0
L=0 a=-128 b=-64	0.0	-128.0	-64.0
L=0 a=-128 b=-48	0.0	-128.0	-48.0
L=0 a=-128 b=-32	0.0	-128.0	-32.0
L=0 a=-128 b=-16	0.0	-128.0	-16.0

Save and Exit   Exit (No save)

Manage Device Spots

Devices menu >> **Manage Device Spots**

The **Manage Device Spots** command will open the **Device Colors** dialog, which is used to define colors for a specific printer. The **Printer** drop-list indicates the machine for which new colors will be created, and the **Colors** drop-list indicates the color channels that will define the given color. Other machines will not have these colors automatically.
Instead, use the **Import** and **Export** buttons.

Note: The number of choices from the **Colors** drop-list varies according to the **Printer** that is selected.

After the **Printer** and **Color** choices have been made, define a new color by clicking within an empty row and typing a value. Press **[Tab]** to advance to the next available cell. If pressing **[Tab]** advances to the next row, then values for the next row can be entered, and so on.

Device Colors

Printer
| ACME Color Printer | ⌄ |

Import   Export

Colors
| 6Color | ⌄ |

Create Swatch

0...100

	Spot Color Name	Cyan	Magenta	Yellow	Black
	Tropical Yellow	0	0	70	0
	Pangean Sky	0	88	88	0
▸∗					

Save and Exit   Exit (No save)

Spot Plane Mapping

Devices **menu >>** Spot Plane Mapping

Queue Properties **>>** Layer Profile
Note: Spot color synonyms will only apply when importing PDF, PostScript, or EPS files.

A spot color synonym is an alternative name for the actual spot channel that will be output (e.g., White, Silver, Clear, etc.). For example, if an imported PDF file has spelled a spot color name in a way that your printer would not recognize, then create a synonym that maps the imported color to what your printer uses.

Synonyms are not device specific, which means that a defined synonym can be reused when you switch to a different printer that uses the same channel naming conventions.

Configure a Spot Color Synonym

Before creating synonyms, construct a list of the spot color names that will potentially be used in design files. For each spot color name, determine the correct color channel name that will be used when outputting the print job.

Note that the correct spelling of color channel names can be referenced via **Queue** menu >> **Properties** >> **Separation Curves** >> **Colors**.

The Separation Curves tab is only visible when **Tools** menu >> **Options** >> **General** tab >> **Show advanced settings** = ON

1. In iColor® ProRIP, choose **Devices** menu >> **Spot Plane Mapping**
2. In the **Plane substitutions** dialog, set **Use spot name mapping** = ON
3. Click the **Add Original** button, and enter the channel name that is used when output to the printer.
4. The channel name will appear under the **Color plane** column, and a corresponding drop-list will appear under the
Spot color in job column.
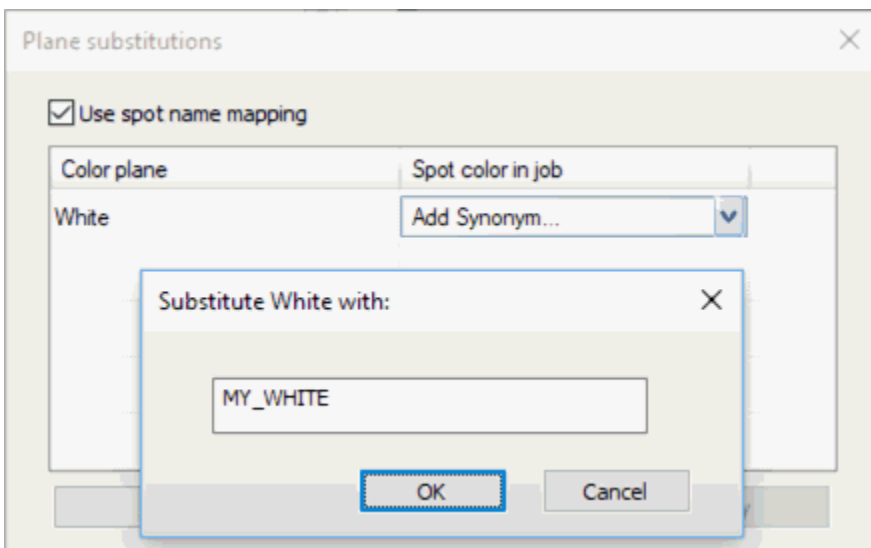
5. From the drop-list, choose **Add Synonym**.
6. The **Substitute XXX with** dialog will open.
7. Type the color name as it was defined in the original design.

To summarize the screenshot example:

    1) The print mode for this printer has "White" as a defined channel.

    2) In the original design, "MY_WHITE" was defined as a spot color.
    3) Using the **Plane substitution** dialog, we defined MY_WHITE as a synonym for "White," so that all areas of MY_WHITE will be printed as the White channel on the printer.

Tools Menu

The **Tools** menu provides access to RIP settings, such as allocated RIP memory, and concurrent print job processing.

Options Dialog

The **Options** dialog provides interface preferences and RIP system settings.

- **General** - Provides basic controls for customizing the iColor® ProRIP interface.
- **Storage and Archiving** - This tab indicates where the production files are stored when the queues are processing jobs, and the location of archived jobs.
- **RIP** - Allocate memory for the RIP, and set the relative priority of jobs with respect to other Windows applications.
- **Processing** - Spool extra jobs whilst waiting for the current print job to finish.
- **Preview Options** - Adjust the thumbnail image quality for jobs in the active list.

Printing Direct to Port

- **Direct to Port** - This is a diagnostic tool that sends print data to a specific computer port, so as to confirm that data is being received by the print that is connected to that port.

General Interface Settings

Tools menu >> **Options** >> **General**

The **General** tab provides basic controls for customizing iColor® ProRIP :

- **Show splash screen -** When launching iColor® ProRIP, this checkbox controls whether the iColor® ProRIP splash screen will be displayed.

- **Always on top -** If this checkbox is ticked (ON), then iColor® ProRIP will always remain in the foreground "above" other windows.

- **Automatically track items** - If this checkbox is ticked (ON), then selecting a job in the active list or archive list will display details about that job in the Media Settings pane. When OFF, it is necessary to select a job in the Visual Print Manager in order to display such details.

- **Set display units -** Choose the unit of measurement that will be used throughout iColor® ProRIP.

- **Set decimal places -** Choose the precision of measurements used in iColor® ProRIP.

- **User hidden dialogs** - iColor® ProRIP uses warning dialogs to confirm whether a given action should proceed. Such warning dialogs have a checkbox that can be checked to prevent that warning dialog from reoccurring. However, if there is a new user that is learning how to use iColor® ProRIP, then click the **Reset All** button to force all dialogs to be shown again. Alternatively, click **Advanced** to select which warning dialogs to show.

Storage and Archiving

Tools menu >> **Options** >> **Storage and Archiving** tab

This tab indicates where the production files are stored when the queues are processing jobs, and the location of archived jobs.
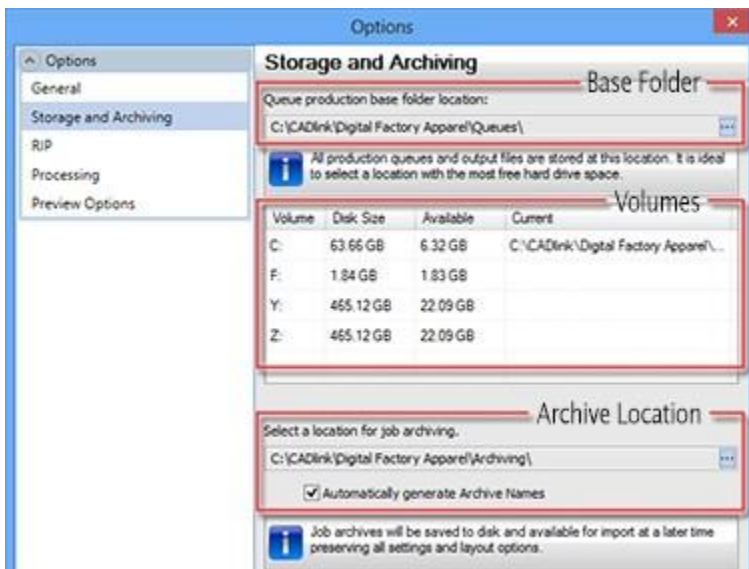
- **Base Folder** - This is the hard drive location where queue settings will be stored. By default, this location is set during iColor® ProRIP installation.

- **Volumes** - The volumes are all the possible storage locations wherein the Base Folder can be set, such as a hard drive or flash drive.
- **Archive Location** - The archive location is the directory where archived jobs will be stored. This needs to be a location that can be accessed later to restore the given job.

RIP System Settings

Tools menu >> **Options** >> **RIP**

The **RIP Settings** are used to specify the resources that are available for spooling (rasterizing or RIP'ing) print jobs. These controls will directly influence the workstation that is performing the RIP calculations.

RIP System Location

The **RIP System Location** explicitly states the directory to which the RIP engine for iColor® ProRIP has been installed. This information is provided to help CADlink Tech Support diagnose issues quickly.

RIP Memory Allocation

Memory refers to the maximum amount of workstation memory (RAM) that may be used by the queue when creating a spool file. If more than this limit is required, then Virtual Memory (VM) will be used. Virtual Memory refers to hard drive space that is used to supplement RAM. Virtual Memory is used to effectively provide applications with more RAM than the workstation has installed. However, accessing hard drive space is much slower than real memory.

RIP Priority Level

All software processes have a **Priority Level** that determines how the workstation processing time is shared amongst the processes (different software applications). Normally, processes are assigned equal priority levels by default, but modifying the priority of individual processes is acceptable where this improves overall workstation performance.

If the **RIP Priority Level** is increased, then print jobs will be processed faster, though this will be to the detriment of all other software processes that are running on the workstation. Other processes will simply require more time in order to complete their operations.

Conversely, if the **RIP Priority Level** is decreased, then print jobs will require more time to complete.

Processing

Tools menu >> Options >> Processing tab

Concurrent Jobs

Though iColor® ProRIP can spool a print job quickly, there is still time required to send the spool data to the printer (say over a network). In addition, the printer has a physical limit with respect to how quickly ink can be laid upon the media.

Instead of waiting idle for a spool file to be completely received by the printer, iColor® ProRIP can begin creating spool files for subsequent print jobs concurrently. However, please note that only one spool file is being compiled at any given time. The **Maximum number of concurrent RIPs** limits the number of spool files that can be compiled in advance of the job that is currently being spooled.

Maximize Throughput

By default, concurrent jobs are allowed in the same queue, and between different queues. However, turning OFF the **Maximize Throughput** option can be used to prevent multiple concurrent jobs within the same queue.

1. **ON** (default) = Concurrent jobs allowed within the same queue, and between different queues
2. **OFF** = Concurrent jobs not allowed within the same queue

Preview Options

By default, when a new job is received by the iColor® ProRIP , its name is listed in the Active List of jobs, a thumbnail   image of the job is shown next to its name, and a thumbnail preview of the job is shown in the Visual Print Manager. Typically, these thumbnail previews are of medium quality, though the preview quality can be increased using the Preview Options.

- **Generate thumbnail previews** - Clearing this checkbox (OFF) will prevent thumbnail previews from being automatically created. However, previews can be manually created by right-clicking the given job and choosing **Jobs** menu >> **Generate Preview Image**.

- **Preview quality** - Adjusts the screen resolution of the generated preview. Higher quality will require the greatest amount of time in generating the preview.

- **Gamma adjustment** - Adjusts the relative brightness of the generated preview.

- **Preview image bits per pixel** - Limits the number of color shades that can be assigned to a given pixel. Choosing **1 bit per pixel** will create preview colors that appear blotchy.

- **Limit number of previews** - By default, when multiple jobs are received at the same time, thumbnail previews will be methodically generated one-by-one. Use the slider to increase the number of previews that are generated in parallel.

Print Direct to Port

Tools menu >> Direct to Port

Note: This is a quick, specialized method of sending a print job in order to test that the computer port is communicating data to the printer.

This tool will open a **Send to port** dialog in the top-left corner of the iColor® ProRIP window. Image files can

be drag-and- dropped onto this dialog to initiate a print job, and the job will bypass the queue and be sent directly to whichever printer is connected to that port, without any processing. As such, the print quality will be negligible, and the practical reason for using this tool is to confirm that data is being communicated to the printer.

From the drop-list, choose the port where the print jobs will be sent. To the right of the drop-list, click the ellipsis button (three dots) to edit the port settings.
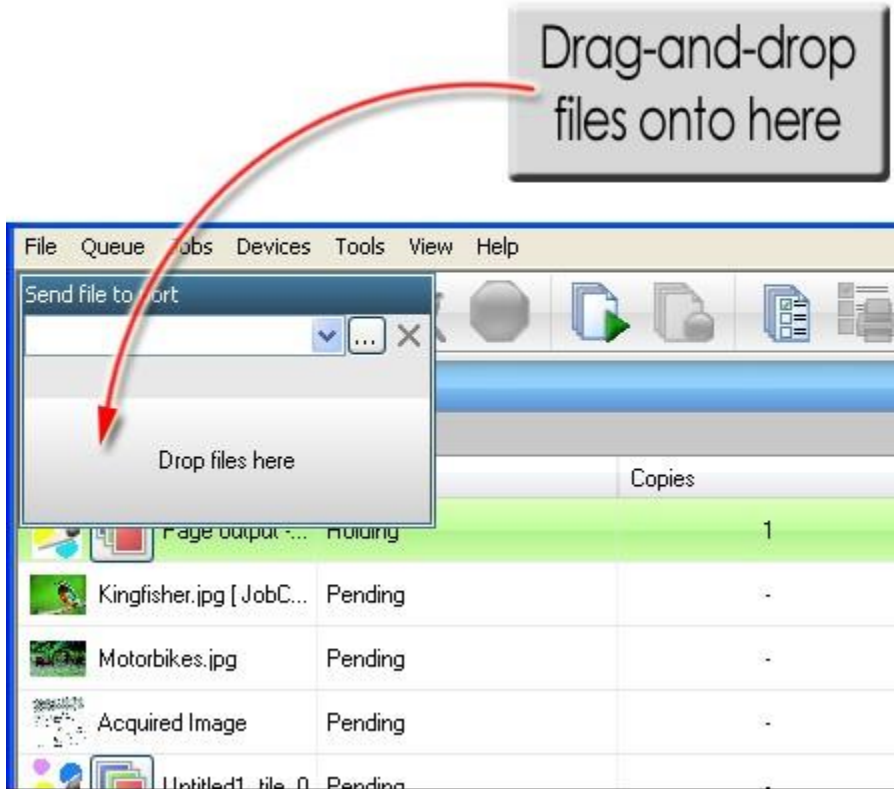

How to Automatically Output a Job

In addition to merely selecting a job, iColor® ProRIP can be configured to perform automatic processing, including output of the given job. However, please note that the job must be "closed" before automatic scheduling will occur.

1. Choose **Queue** menu >> **Properties**

2. On the **Layout Manager** tab, set **Close page on import** = ON

   If the **Media Setup** tab has been configured for template media, then the **Layout Manager** option will be

   Automatically close template when all slots filled = ON

3. Under the **Output Scheduling** controls, choose the "on Barcode" option that you want to occur when the barcode is scanned. Note that the available "on Barcode" options vary according to the printer model. Per this screenshot, when you scan a barcode, the job will become selected, and the job will be rasterized, though it will be held before outputting the job data to the printer.
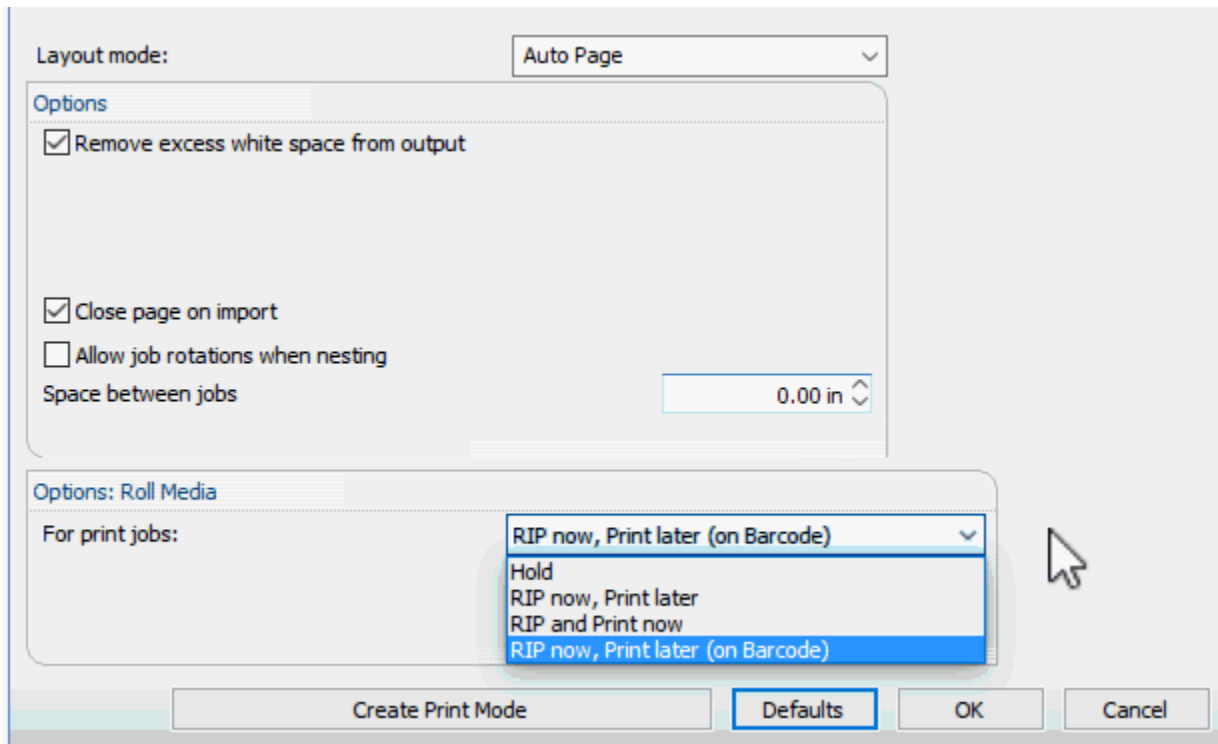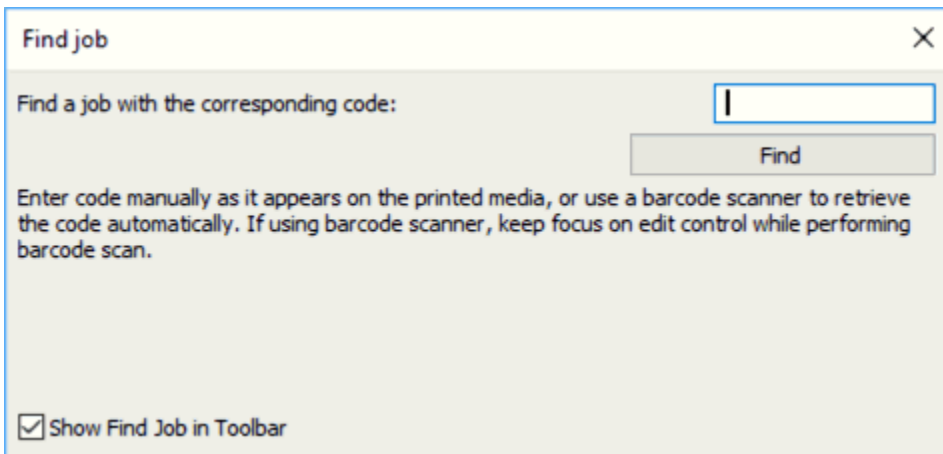
Manual Find of the Job Name

Without using a barcode reader, you can find a job using a partial match of the job filename.

1. In the toolbar, click the **Find Job** button.
2. The **Find Job** dialog will open.
3. The upper-half of the dialog is a simple find tool, as follows:

   a. Above the **Find** button is an edit field. Type a word that you know is part of the job filename that you are looking for.

   b. Click the **Find** button to select the first job that has your word in its filename.

If you want the edit field (a) to be available from the toolbar, then set **Show find job in toolbar** = ON

Find job   ✕

Find a job with the corresponding code: [|]

                                                  [Find   ]

Enter code manually as it appears on the printed media, or use a barcode scanner to retrieve the code automatically. If using barcode scanner, keep focus on edit control while performing barcode scan.

☑ Show Find Job in Toolbar

Layout Preview

View menu >> View Layout Preview

The Layout Preview is the right-hand side of the iColor® ProRIP window, which previews jobs as they will be positioned upon the media. The bottom portion of this preview is the SmartBar, which provides context-sensitive controls. The SmartBar is divided into three tabs: Queue, Page, and Job.

SmartBar Queue Tab

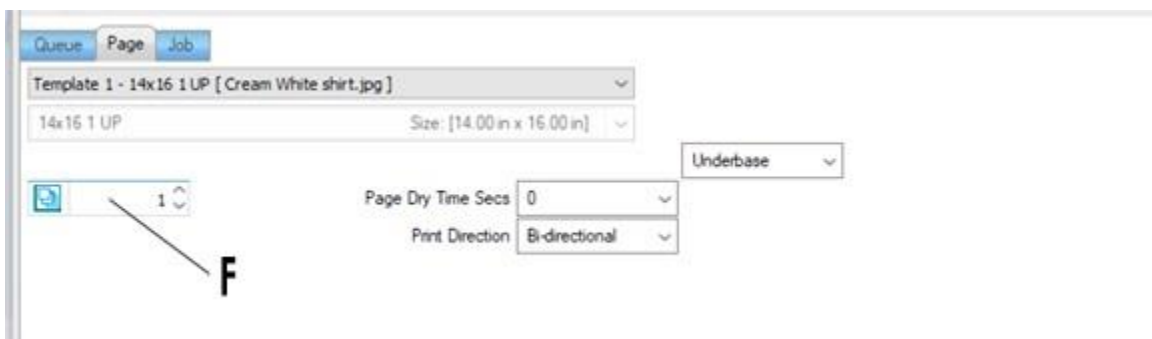As a whole, these controls apply to the current queue.
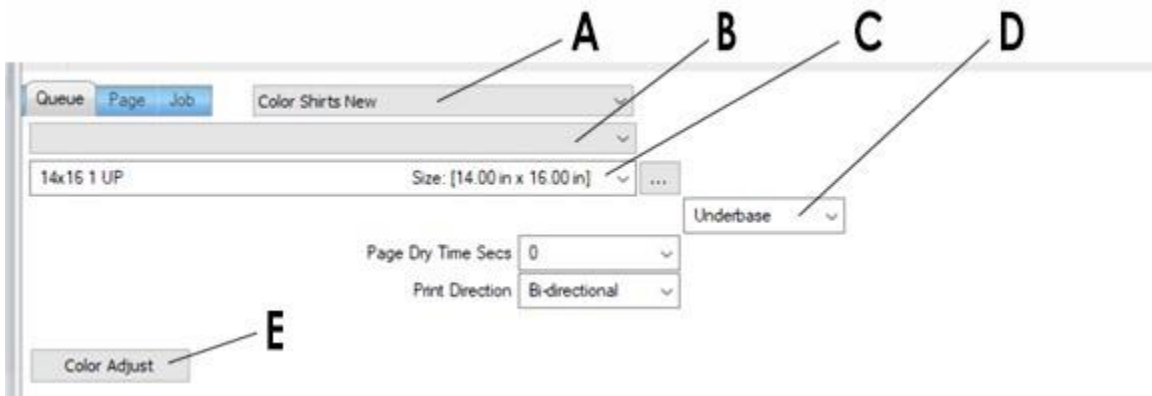
A - Print Mode
B - Pending Jobs
C - Media
D - Layer
E - Easy color adjustments for ALL incoming jobs.

SmartBar Page Tab

Similar to the queue tab, these controls refer to the current page of material, which can contain one-or-more job designs that will be sent as a single output job.

- If jobs are being paginated into separate sections of the media (i.e., Layout Mode = Auto Page), then the first job will be on sheet 1, the second job on sheet 2, etc.

- If jobs are being nested (i.e., Layout Mode = Auto Nest), then several jobs could be within sheet 1, more jobs within sheet 2, etc.
  Note: For nested jobs that have significant white space, using the **[Ctrl]** key when dragging will allow the jobs to overlap.

F - Total times to output job.

SmartBar Job Tab

As a whole, these controls apply to the current queue.
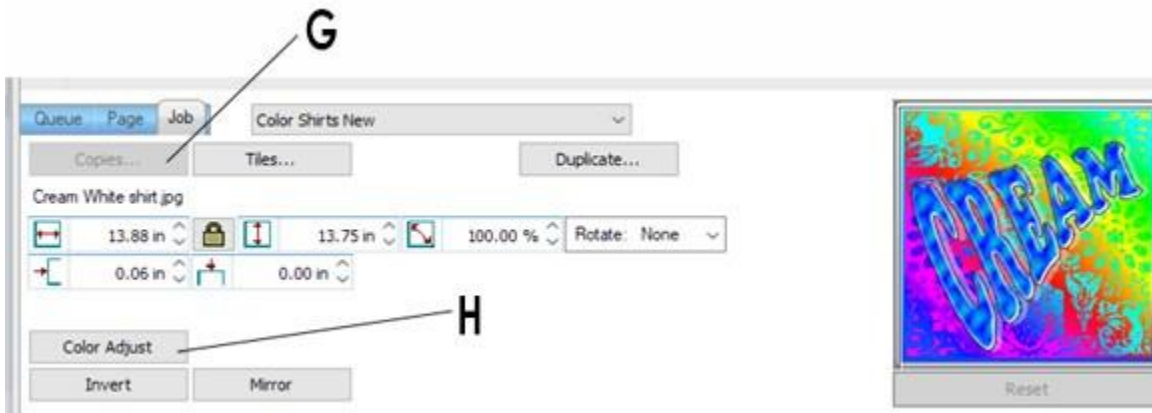
G - Click twice to open the **Step and Repeat** dialog.

H - Easy color adjustments for SELECTED job.

Creating Copies

When copies are created within iColor® ProRIP , only the original selection will be rasterized, and the copies will reuse the rasterization data. In comparison, if multiple copies of a job are sent from the given design application, then all such copies will be rasterized individually (i.e., more processing time and overhead would be required). This feature is helpful when printing smaller graphics, such as chest logos on a T shirt, and you want to use as much of the media as possible in doing so.

Create Copies of a Job

Note: Use of the word 'copies' in this section does not relate to the number of times the page will be printed. Rather, it refers to how many of the same image (copies of the image) will be place on the same page. Another word for this would be 'tiling' or 'ganging' images.

1. In the Layout Preview, select the job.
2. Size and place the original image as desired on the page.
3. Click the **Copies** button, and handles will appear to the right and bottom of the copies.
4. Drag the handles to create copies. You can also use the tools available under the copies button for more precise placement and size.
5. Alternatively, click the **Copies** button a second time, and the Modify Step and Repeat dialog will open.

Step and Repeat

Step and Repeat is an extension of the Copies feature, where an original copy can be arranged into a variety of seamless tile patterns (with no white gaps between copies). As with the Copies feature, Step and Repeat will only need to process a single copy, which means that the RIP processing and output time will be dramatically more efficient than an equivalent large job (that did not use copies).

To open the **Step and Repeat** dialog, do the following:

1. Select a job, and the **Job** tab will become active within the SmartBar.
2. On the **Job** tab, click the **Copies** button
3. A single copy will appear, and basic controls for creating copies will appear in the SmartBar.
4. Click the **Copies** button again, and the **Modify Step and Repeat** dialog will open.
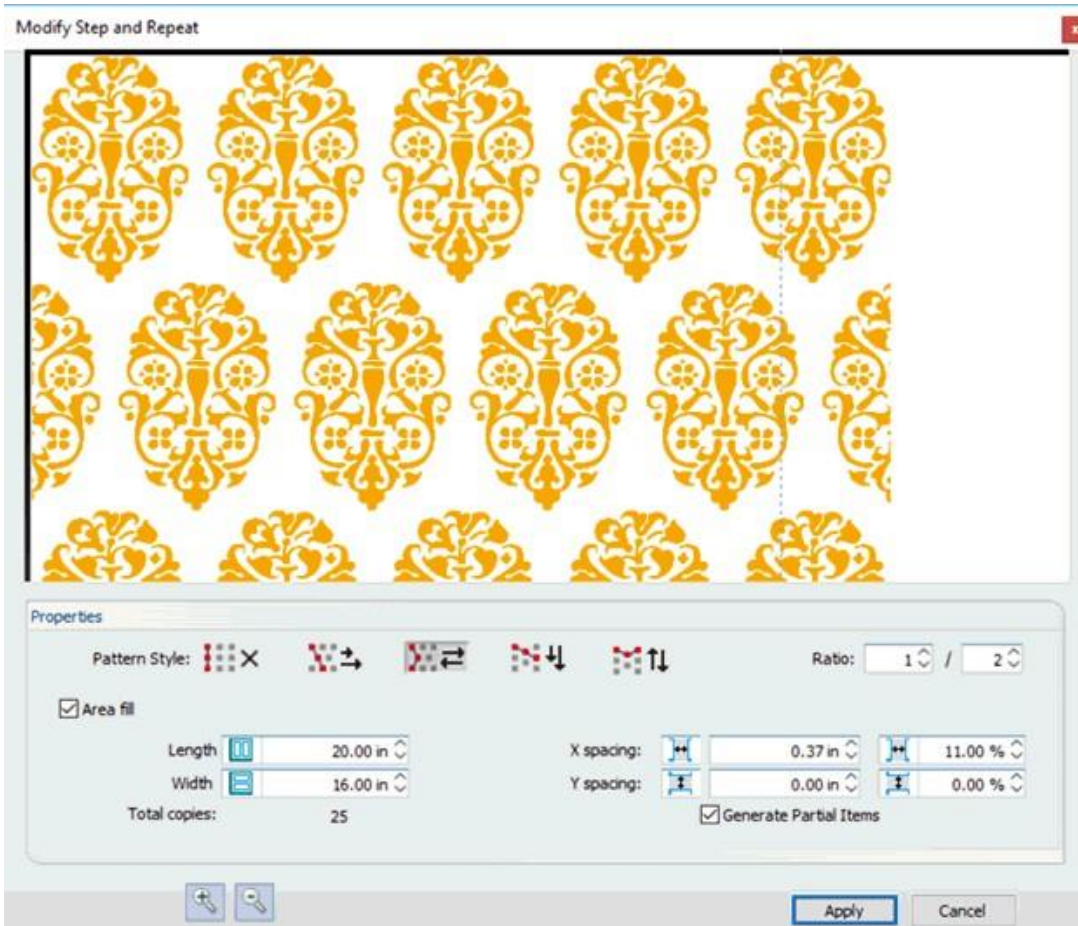
Filling an Area

Of note, the **Area fill** checkbox will toggle whether you want to 1) specify a total number of columns and rows (of copies), or 2) define the total area (length by width) that should be filled with copies.

By default, copies will be clipped by both the edges of the media, and the **Area fill** that you have defined. To force only non-clipped copies to be printed, then clear **Generate Partial Items** = OFF

Pattern Style

The choice of **Pattern Style** will determine how copies are staggered, where each row is offset by a fraction (**Ratio**) of the original copy size. For example, a **Ratio** of 1 / 4 will inset each row by 25% of the original copy width.

By default, the spacing between copies is zero, which will create seamless tiles. However, white gaps can be added by adjusting the X and Y spacing fields, either as an absolute value, or as a percentage of the original copy size.

Interlinking Patterns

An interlinking pattern is created by using negative values for the X and Y spacing fields, which causes the copies to slightly overlap. However, when using negative spacing, ensure that the original copy has a white background, otherwise any background color will visibly overlap the graphic of adjoining copies.

Here is a bad example of an interlinking pattern, where the yellow background clips adjacent copies:
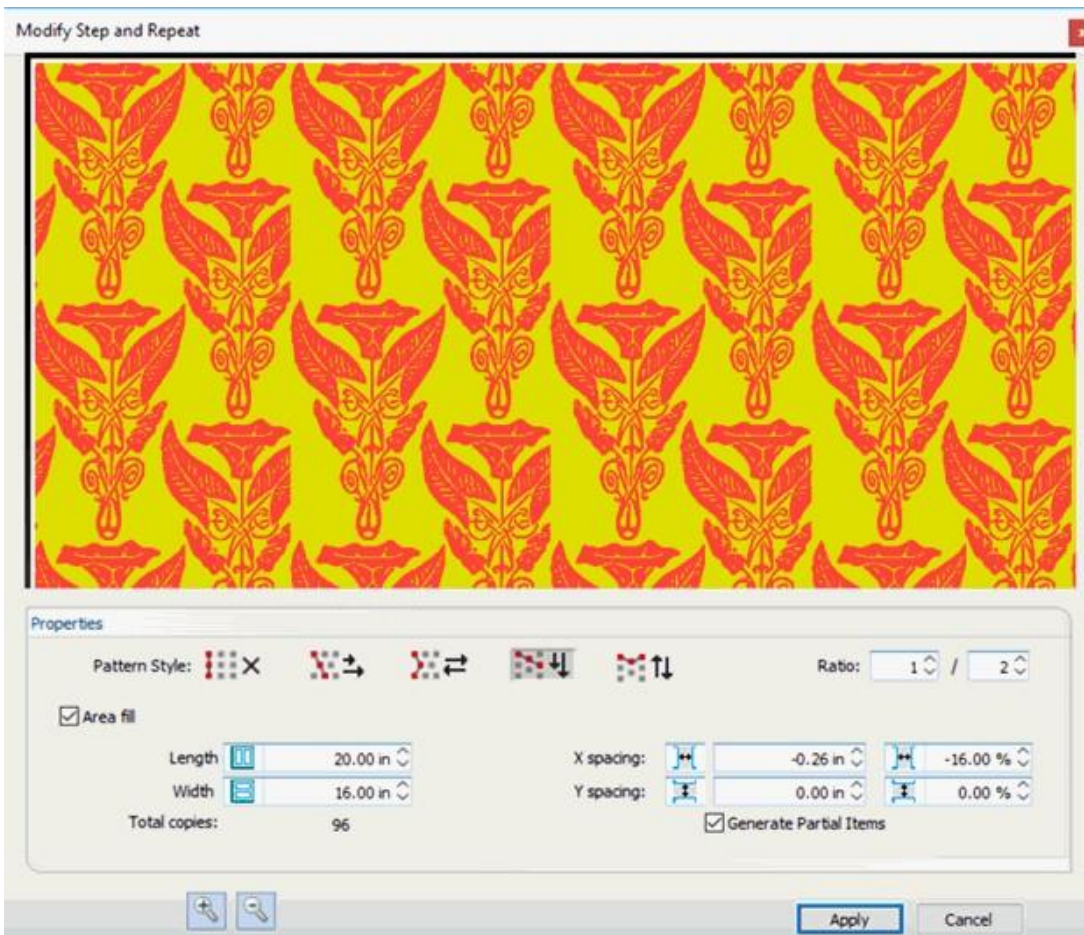
Using the same dialog settings, there is no issue when the original copy has a white background:
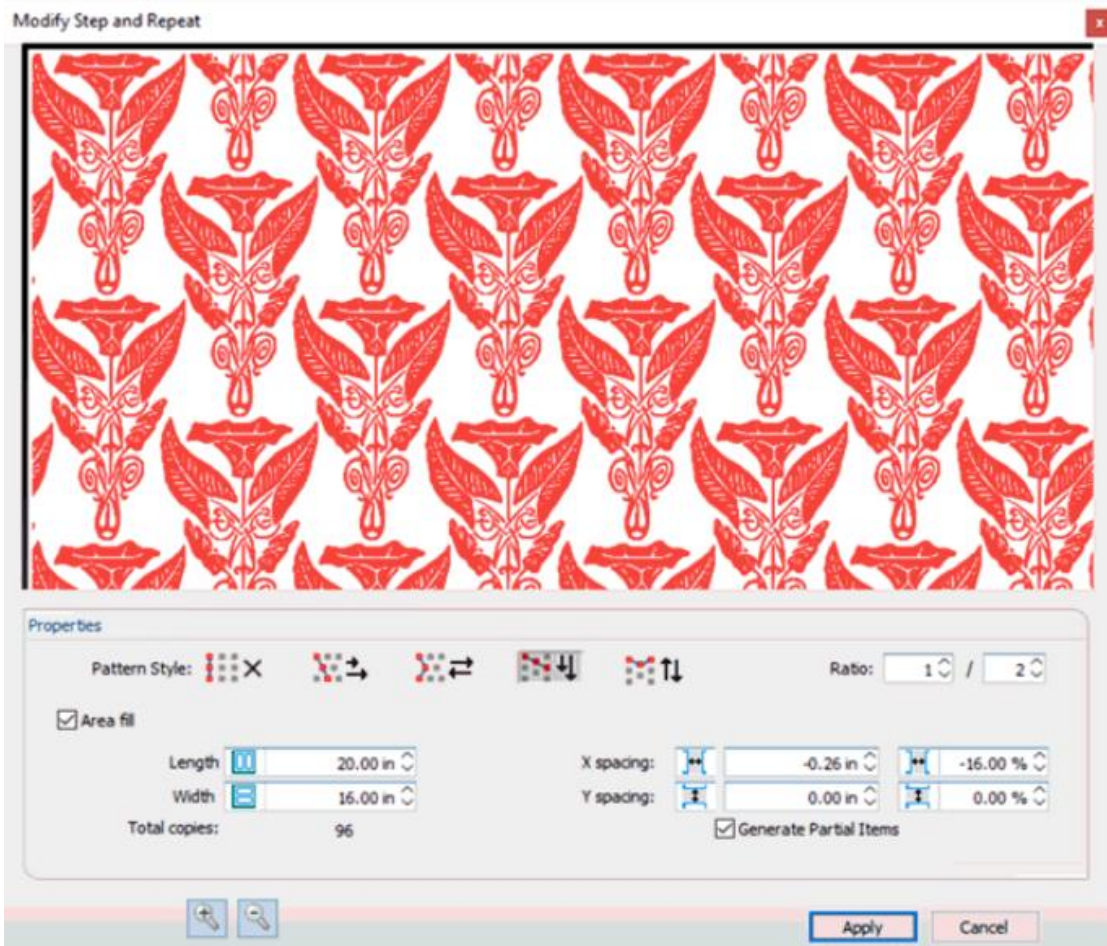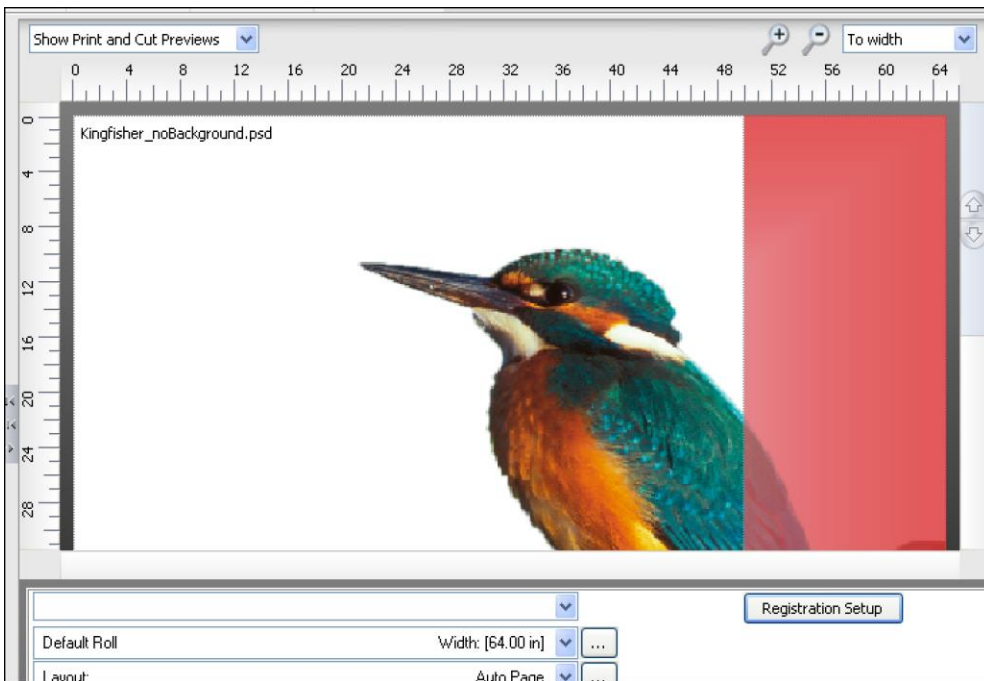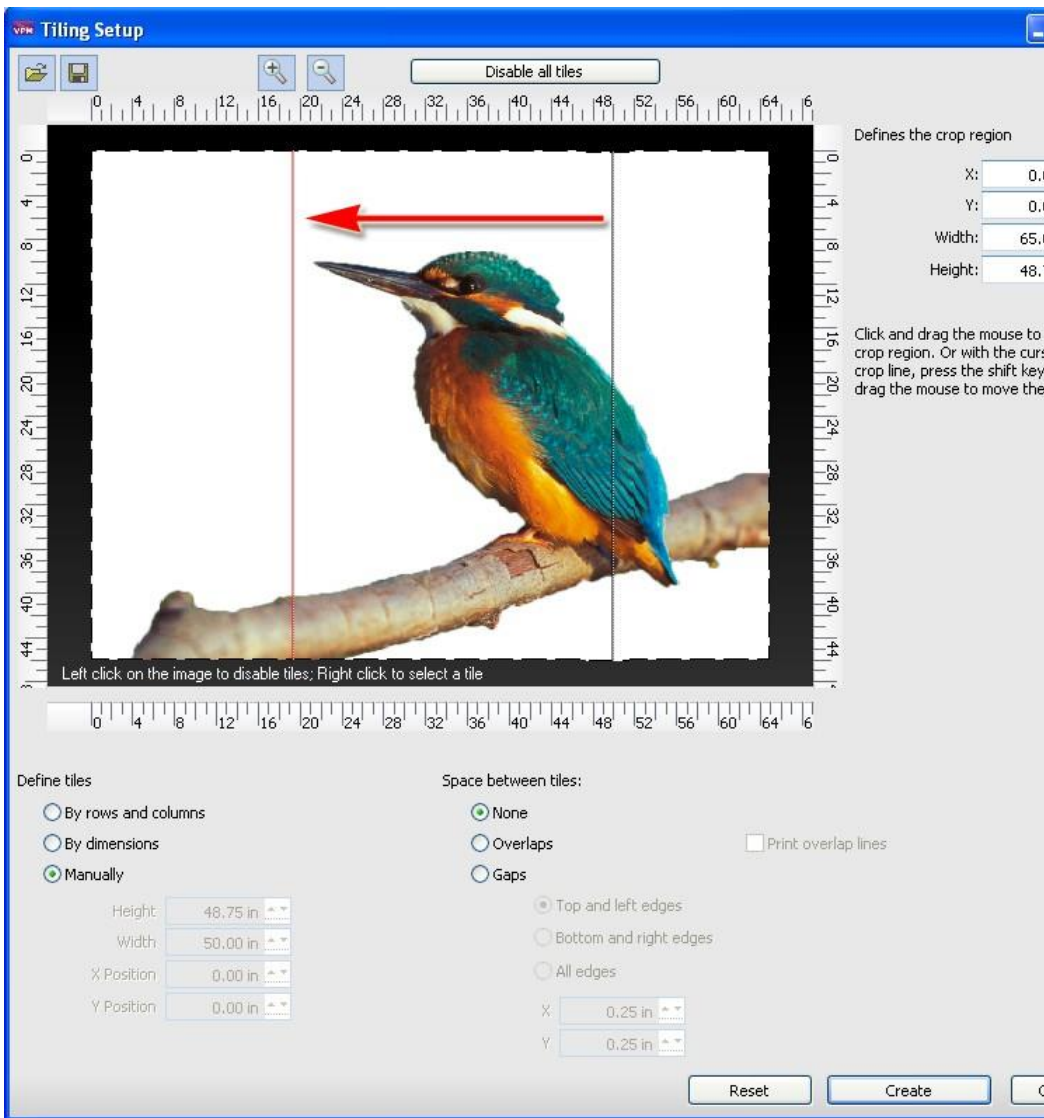
Tiling Jobs

For a new print job, suppose that the Visual Print Manager shows a red highlight where the job exceeds the media bounds.

Note: Use this feature when you want to crop a graphic within the RIP.

1. Select the job and right click on the image preview.
2. Select Create > Crop and right click.
3. The **Tiling Setup** dialog will open.

4. By default, the job will be shown with a tiling line that indicates where the job exceeds the media. Depending on the extent of the tiling requirements, additional tile lines will be created as necessary.

5. Click the **Manually** option.

6. Drag to reposition the tiling line, such that any seam from the tile line will be minimized.

7. If necessary, click the **Overlaps** option and define the amount of extra artwork that will be printed per tile.

> **Note:** If the **Print overlap lines** checkbox is enabled, then a dashed line will be printed to indicate where the overlap begin

8. If necessary, drag additional tile lines from the sides of the dialog preview.

9. Click the **Create** button to close the **Tiling Setup** dialog.

10.   The tiles will now be shown in the Visual Print Manager.

11. To output the job, right-click the job in the active list and choose **Print**.

Invert the Job

The **Invert** button is a toggle that converts the selected job between positive and negative. When inverted, light areas will become dark, and vice versa. In color images, color reversal will also occur, with red areas becoming cyan, green areas becoming magenta, and blue areas becoming yellow.
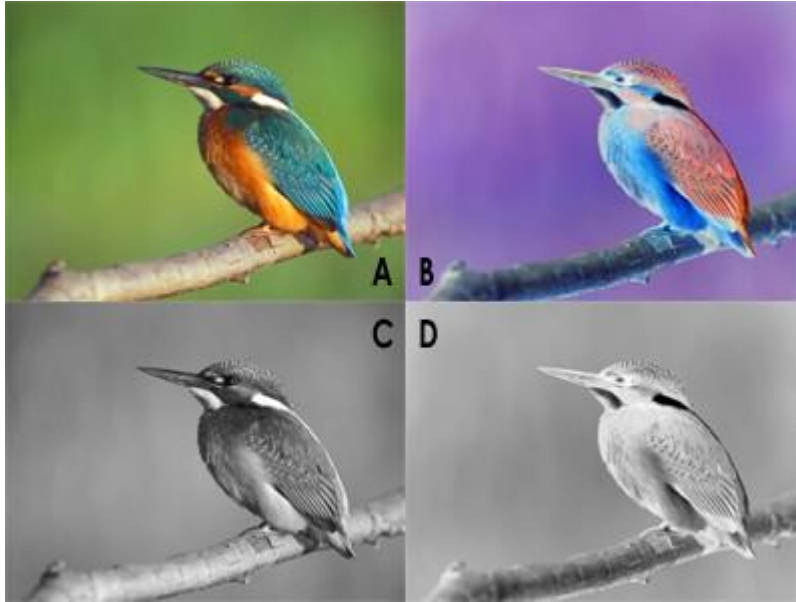
Examples of a A) color positive image, B) color negative image, C) grayscale positive image, and D) grayscale negative image.

Easy Color Adjustments

In the SmartBar, click the **Color Adjust** button to access simplified controls for adjusting the color settings.

- For a selected job, click the **Job** tab (in the SmartBar), and then click **Color Adjust**. This will allow you to perform adjustments for the selected job.

- For a selected queue, click the **Queue** tab (in the SmartBar), and then click the **Color Adjust** button. Your adjustments will be applied to all jobs that are recevied by that queue.

The Easy Color Adjustments Dialog

When you first open the **Easy Color Adjustments** dialog, note that the **Layers** drop-list provides access to different layers that are defined within the **Queue Properties** dialog.
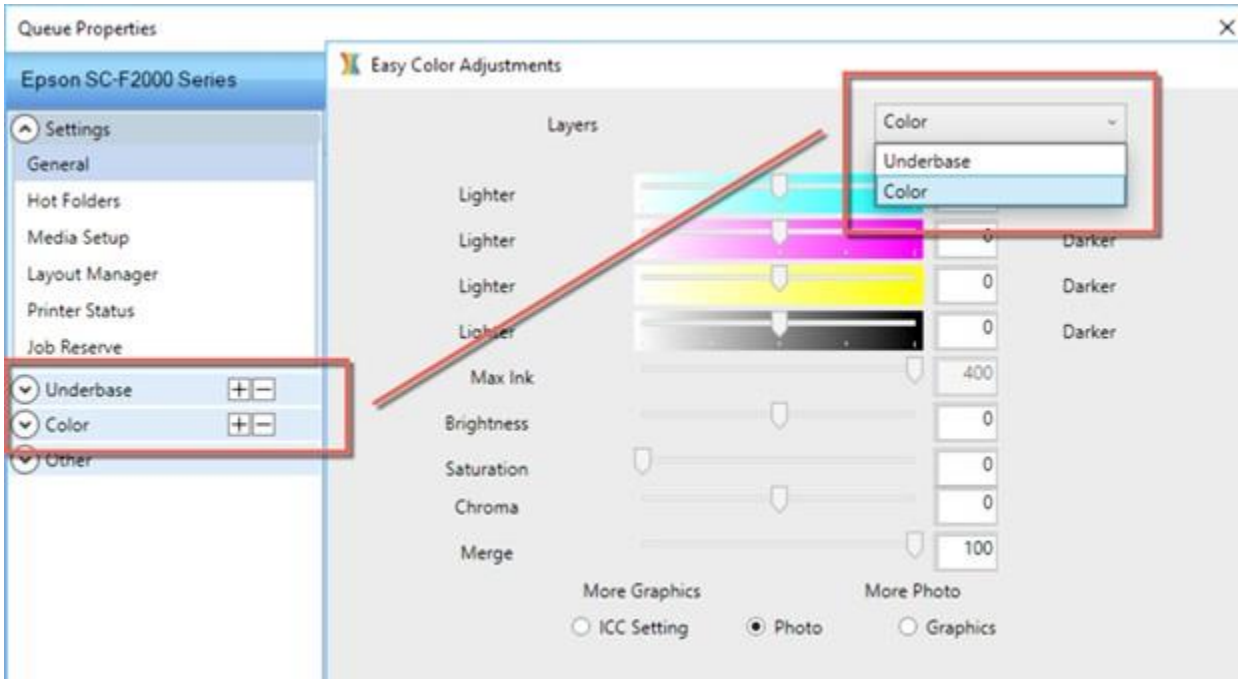
- From the drop-list, the order of layers indicates the order in which they will be printed, such as **Underbase** layer before the **Color** layer.
- The available controls will vary according to the type of layer that has been selected, and the controls can also depend upon how the **Queue Properties** dialog has been configured. For example, the following controls are typical when the **Underbase** layer is selected.
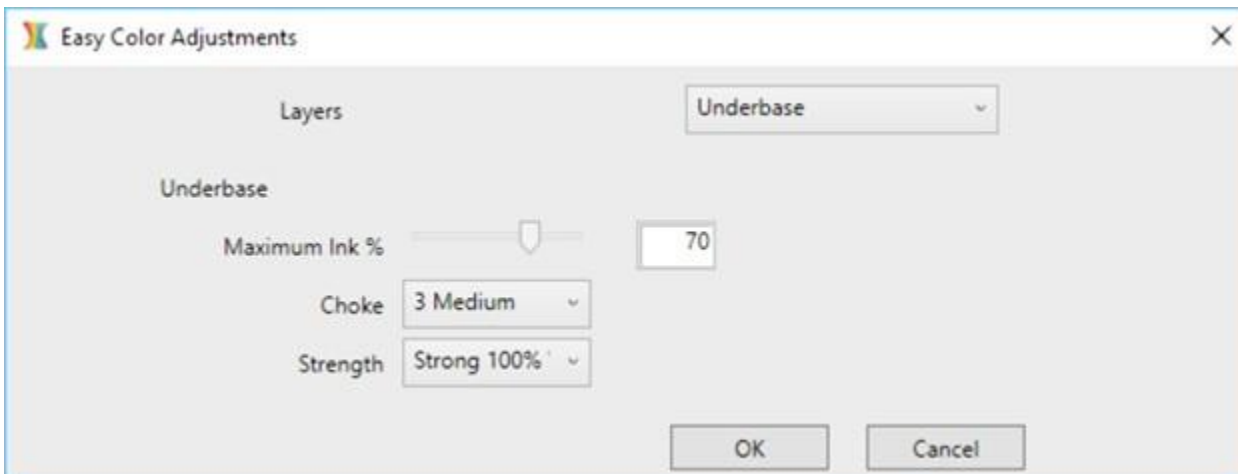
CMYK Sliders : Per the individual channels, use the sliders to either decrease or increase the proportions of CMYK that will be output.

MaxInk Slider : The MaxInk setting will regulate the total volume of CMYK inks. For example, a MaxInk of 200 will cause ink output to be regulated, such that the sum volume of the CMYK ink channels will not

exceed 200.

Brightness : Brightness will lighten or darken the entire job (i.e., will adjust the output colors equally).

Saturation : Saturation will increase or decrease the vibrancy of the entire job (i.e., adjust the colorfulness).

Chroma: Like Saturation, Chroma affects the vibrancy of the job, but its effect is more subtle. Chroma is applied as part of the ICC rendering, so that skin tones remain closer to their original hues.

Merge : The Merge slider depends upon which option is active: 1) ICC Setting, 2) Photo, or 3) Graphics. See: Rendering Intent Override

Rendering Intent Override

Rendering intents for a queue are set via the **Queue Properties** >> **ICC Profile** tab. However, the rendering intent can be overridden, as follows:

1) ICC Setting

When the **ICC Setting** = ON, then the rendering intent settings will be used from **Queue Properties** > **ICC Profile** tab.

2) Photo

When **Photo** = ON, all of the ICC Profile tab settings will be overridden with the following:

- First rendering intent = <u>Relative</u> (i.e., for graphics)

- Second rendering intent = <u>Perceptual</u> (i.e., for photographs)

- The **Merge** slider will default to 100, which means that <u>Relative</u> will be 0%, and <u>Perceptual</u> will be 100%.

- By moving the **Merge** slider towards the left, this will increase the relative (i.e., spot color accurate) color reproduction.
    Note: The **Merge** and **Chroma** sliders will only work with CMYK devices, not RGB or CMY devices.

3) Graphics

When **Graphics** = ON, all of the ICC Profile tab settings will be overridden with Absolute rendering intent. This has the benefit of providing the closest color match (good for spot color matching), but this will impair the quality of photographs.

Previewing Raw Print Data

Print data can be examined on-screen prior to printing. This is typically done in order to confirm the print data that is available in each color channel.

For example, suppose that a grayscale image needs to be printed, and the expectation is that only the black (K) channel will receive print data. This can be confirmed in the following manner:

1. Click the **Stop Queue** button to pause the grayscale-only print job in the queue.

2. Right-click the job and choose RIP **Only**.

3. When the job has finished spooling, its **Status** will indicate "**Holding [Job spooled]**"

4. Right-click the job and choose **View RAW data**.

5. Click the **Plane Select** button. Each of the color channel checkboxes will be ticked.

6. Untick the **Black** checkbox.

7. The preview should now be blank because the CMY channels should not be receiving data for a grayscale-only job.
    Note: Colors appear differently on monitors than they appear when printed. As a result, the **View Raw Data** feature will not show colors on the screen exactly as they will appear when printed.

Variable Dot Printers

For printers that provide variable dot halftone support, note that a monitor display is not capable of previewing variable dot output because a monitor display contains only one size of pixel on-screen. Further, the limited number of monitor pixels may cause the preview to appear faded, though this fading will not be present in the actual print.

Controls for Previewing Print Data
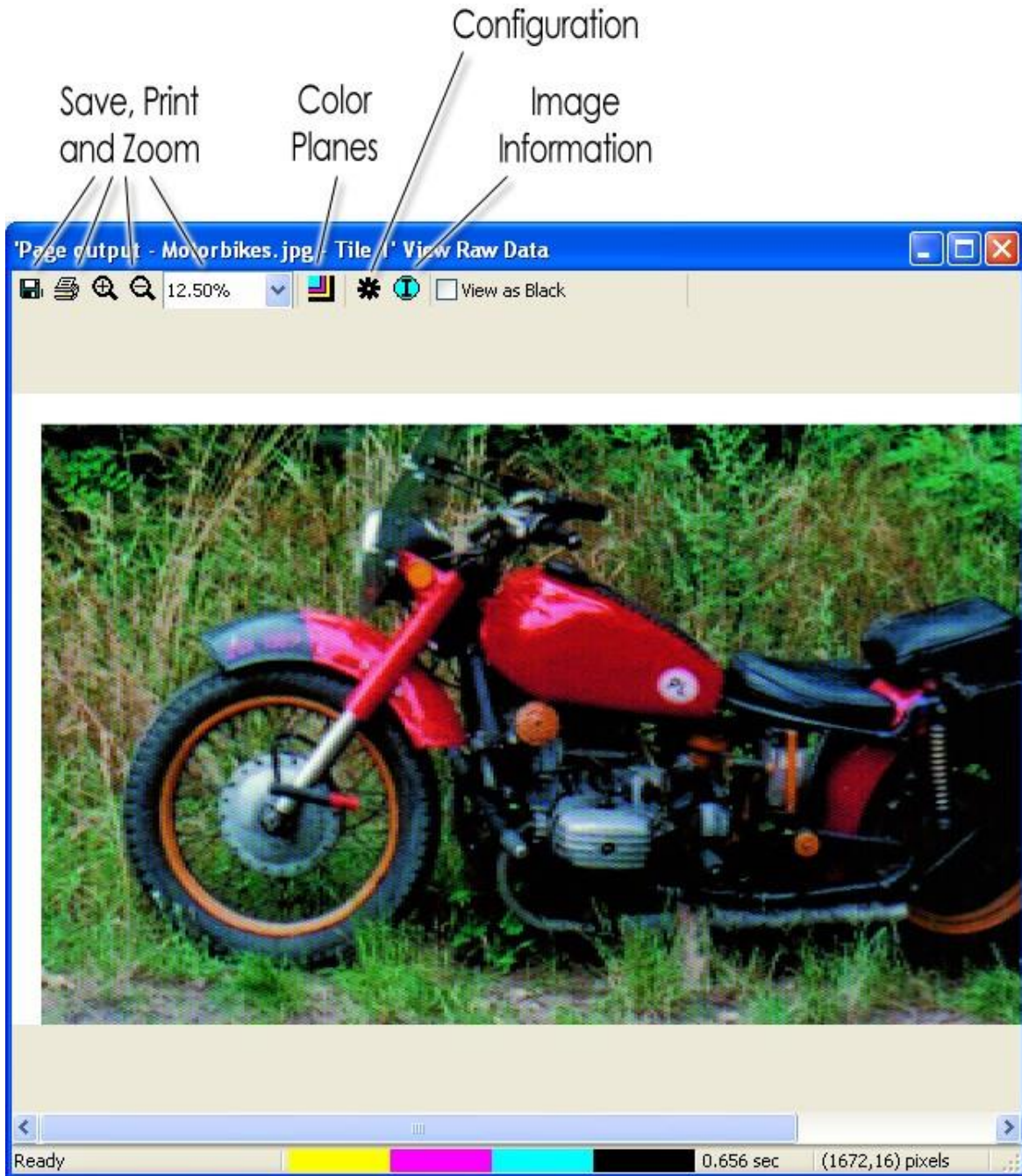
Save

Select the **Save** button to save the picture as a bitmap image for comparisons or later viewing.

Print

Select the **Print** button to print the preview. For example, the preview can be printed to a desktop printer for use as a sample.

Zoom Tools

Select **Zoom In**, **Zoom Out**, or select a **Percent Zoom** to view the image as a whole, or particular sections within the image.

Color Planes

Clicking the **Planes Select** button opens the **Select Planes to View** dialog. The color channels used to print the image will be listed. Unchecking color channels is useful as a means of confirming the inks that will be used when rendering the image.

For example, suppose that a CMYK printer is being used to print a grayscale image using only the Black (K) channel:

1. Click the **Plane Select** button. Each of the color channel checkboxes will be checked.
2. Uncheck the **Black** checkbox.
3. The preview should now be blank because the CMY channels are not being sent data.

The **Background** color picker will indicate the media color. Alternatively, the color picker can be used to simulate different media colors.

1. Click the **Background** color picker.
2. Choose color that best matches the media color.
3. Click OK to view the spool data on the new media color.

Configuration

Click the **Configure** button to open the **Preview Configuration** dialog.

- **Treat Process as Spot** - This option is typically off. However, when viewing color separations that are a combination of process and spot colors, setting this option = ON can help to obtain an improved view of the color blends.
- **Show True Pixels Resolution** - Many printers have different horizontal and vertical resolutions. The image that appears in the viewer is automatically adjusted to account for this, when **Show true pixels resolution** is unchecked. Checking **Show true pixels resolution** will show the image without this automatic adjustment, which will cause the image to appear stretched.
- **Cache Size** - If the viewer is drawing too slowly, and additional memory is available on the hard drive, then increase the size of the memory cache to increase the viewer speed.
- **Units** - Select the units of measurement from the drop list (**pixels**, **inches**, or **centimeters**). The units of measurement appear in the bottom right corner of the **View Raw Data** dialog.

Image Information

Clicking the **Image Info** button will open an **Image Info** dialog. The dialog includes a list of information specific to the image including the printer, resolution, color planes, image size, and file location.

View as Black

Check the **View as Black** option to change the background color to white, and all other colors to black, within the image preview.

Queue Properties

A queue is a repository for print jobs, where jobs are collected (and inspected) before being sent as output to the given device. Often, multiple queues are created for a printer, so as to collect jobs for different media types (e.g., white garment material versus black garment material). From a designer's point of view, a queue appears like a print destination, and printing a design will cause that design to be collected within the given queue.

Beneath the main menu, a tab for each queue is available, and clicking the tab will display its contents (i.e., jobs in the Active List and on the Visual Print Manager). Queue properties are applied to jobs when they are received in the queue, and the queue properties can be edited in either of the following ways:

Choose **Queue** menu >> **Properties**.

In the Toolbar, click the **Configure Queue** button.
Double-click the queue tab.

Settings

Layer-related Tabs

For each distinct type of printer head pass operation (e.g., underbase pass, color pass, finish pass, etc.), there is Layer Profile Tab and several layer-related tabs that define the parameters that will be applied for that operation. For more information about layers, please refer to Layer Profile Tab.

Note: There are also **Advanced Queue Property** tabs, though they are for specialized use and are only revealed via

Tools menu >> **Options** >> **General** tab >> **Show advanced settings and options**

Other

General Tab

Queue menu >> **Properties** >> **General**

When the **Queue Properties** dialog opens, the default view will be that of the **General** tab. Further controls are accessible through the other tabs that are arranged along the left-hand side of the dialog.

The **General** tab displays the fundamental queue settings, such as the queue name, the type of printer for which jobs are being accumulated, and the print mode (i.e., media profile) that will be used when printing.
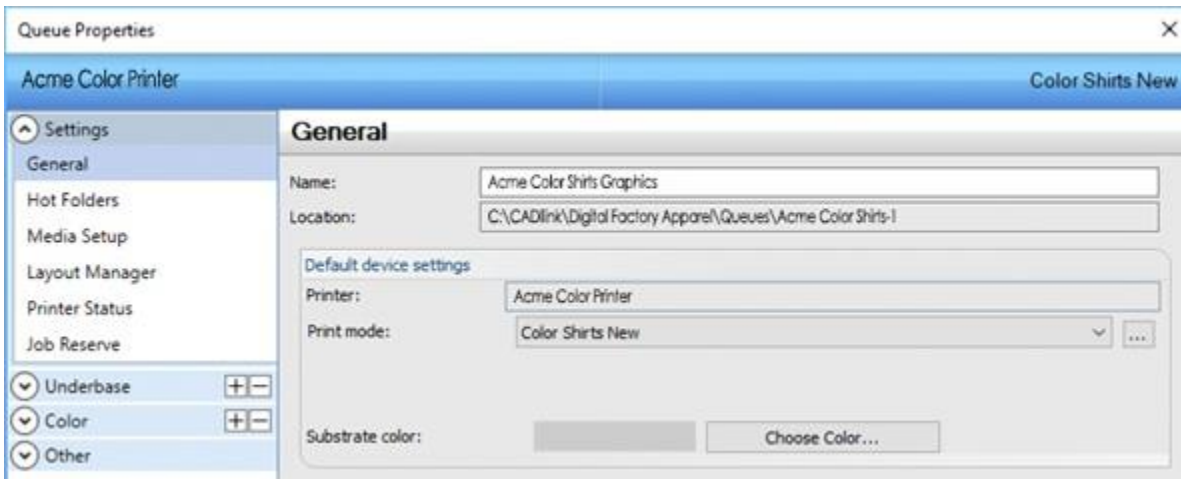
- **Name** - This is the print destination that this queue will appear as when users send a print job from their design application.

- **Location** - This is the explicit directory where job files are stored when being processed by the queue.

- **Printer** - The printer model for which this queue is accumulating jobs. The choice of print mode depends on the printer. To change the printer model, go **Queue** menu >> **Manage Queues**.

- **Print Mode** - This is the media profile that has been assigned to the queue. It is expected that the print mode corresponds to the loaded material or media.

- **Substrate Color** - This is the background color used in the Visual Print Manager, and it has no bearing on the printed output. Set this color according to the material color, so that you can preview job layouts on the expected color (e.g., set the color as black for black media).

Queue Image

When a job is selected, a thumbnail of that job will be displayed on the SmartBar **Job** tab. In a similar fashion, the **Queue Image** will be displayed when no job is selected. You can also specify a tooltip for the image.

A queue image is a means of displaying a visual reminder that helps you to differentiate what queue that you are working with. The choice of image and/or tooltip is entirely dependent upon what is useful in your workflows.
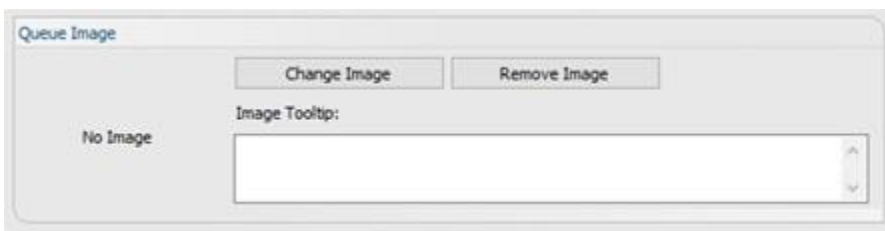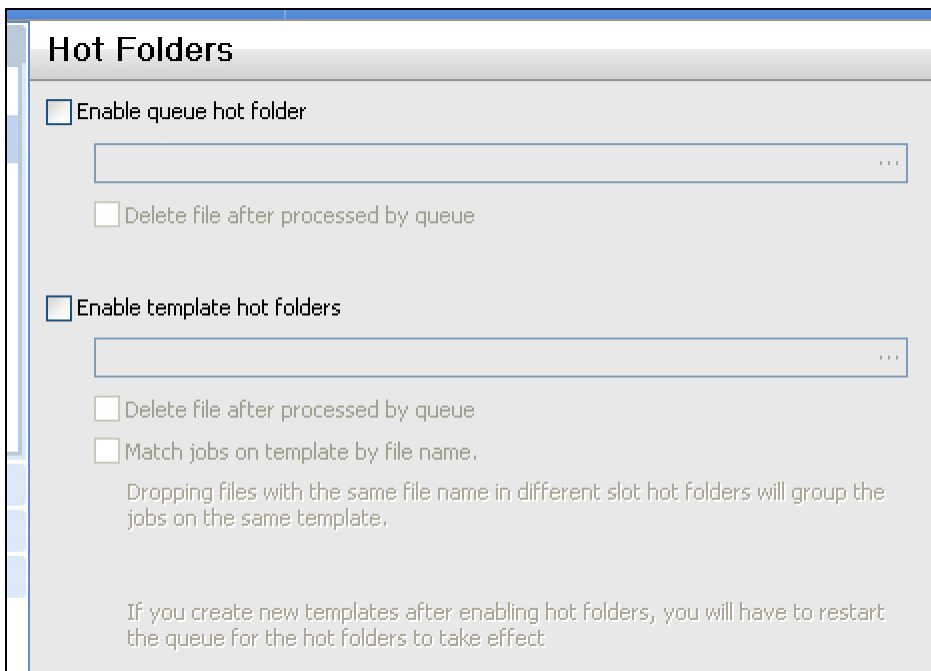
Hot Folders Tab

Queue menu >> **Properties** >> **Hot Folders**

A Hot Folder is a specific directory that the queue will monitor for new design files. When a design file is placed in the hot folder, it will be automatically detected and added to the queue as a print job.

Typically, a hot folder is used by other graphic designers on your computer network. They will copy their jobs into the Hot Folder, and your workstation queue will then be able to process those jobs. However, please note that other graphic designers will need the proper file access permission (as granted by your network administrator) to copy files into the hot folder.

> **Note**: If files are being downloaded from the Internet directly into the hot folder, then it is possible that a slow download rate will interfere with the hot folder process. As a solution, download the files to another directory location, and then move those files into the hot folder.

Create a hot folder as follows:

1. Click the checkbox for the type of hot folder.

- **Enable queue hot folder** - Create a standard hot folder that will add new print jobs according to the queue properties.

- **Enable template hot folder** - Create a template hot folder, where the layout of print jobs will be assigned according to a template that you have configured (see **Media Setup Tab** for more information about templates).

2. A browse dialog will open.

3. Choose a directory and click **OK**.

The directory must be initially empty, or it cannot be selected as a hot folder.

In the case of a Template Hot Folder, a [template name] directory will be added to the queue directory. Likewise, sub- directories of '1', '2', '3', and so on will be added, such that copying a design file into the given sub-directory will place the job in that slot location.

Media Setup Tab

Queue menu >> **Properties** >> **Media Setup**

Use the **Media Setup** tab to specify the size and margins of the material that has been loaded into the printer. These settings will dictate the placement of jobs in the Layout Preview, such that you can visually confirm job layouts before committing to a print.

Since multiple queues can be created for a given device, it can be useful to create a queue for each size that will be in frequent usage.
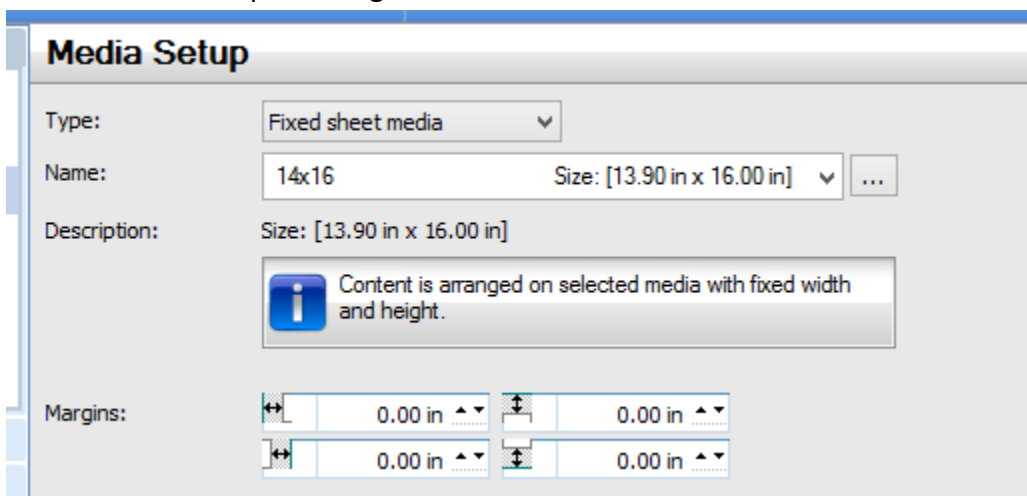

- **Type** - There are four classifications of media, two of which are common (roll and fixed sheet), and two that are special classifications (automatic sheet and templates).

    Roll media – Preview jobs according to a specific roll width.

    Fixed sheet media – Preview jobs in terms of a fixed page width and height.

    Templates – Use this setting when you have defined a template, which is a custom media type for arranging decals and similar volume batch production runs.

- **Name** - Once the type of media has been selected, this drop-list allows you to choose from the available sizes. In addition to predefined sizes, you can create custom settings using the **Printer Media Manager** dialog.

Creating a Custom Page Size

> **Note:** For certain printers, graphics are printed with respect to the center of the page. As such, creating custom page sizes on some printers can cause incorrect positioning of the graphics.

Depending upon the printer model, the available printing area can be either a fixed page size, or a roll of material described as having a specific roll width.

1. Choose **Devices** menu >> **Manage**

    Print Media. Alternatively, click **[...]** on

    the **Media Setup** tab.

2. The **Printer Media Manager** dialog will open.
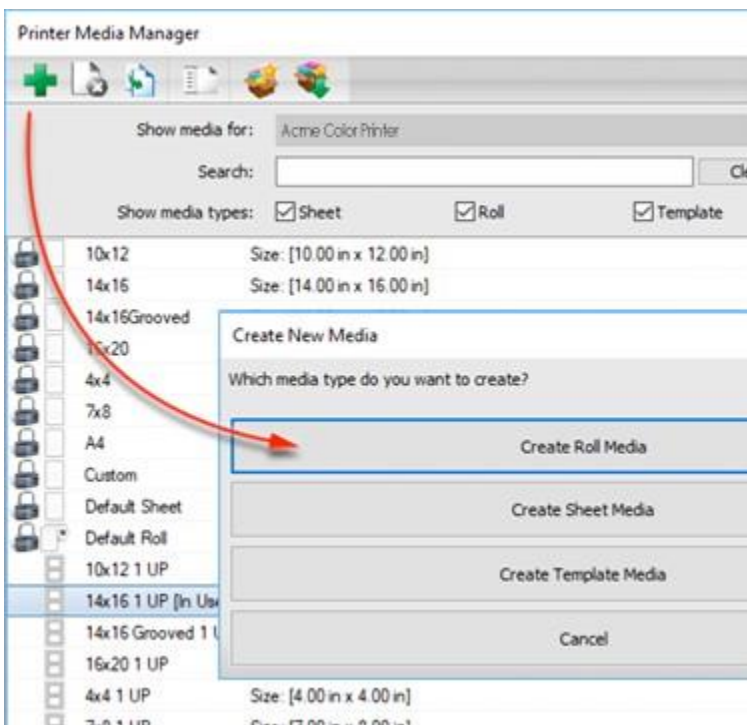
3. From the **Show media for** drop-list, choose the printer that the page size applies to.
4. Click the **Add New Print Media** button.
5. In the **Create New Media** dialog, click the desired media type.

- For roll and sheet, the subsequent dialog will query for the dimensions and margins, and you must enter a name by which the "page size" will be referred to.

- For templates, please refer to the subsequent section, Creating a Page Layout Template.
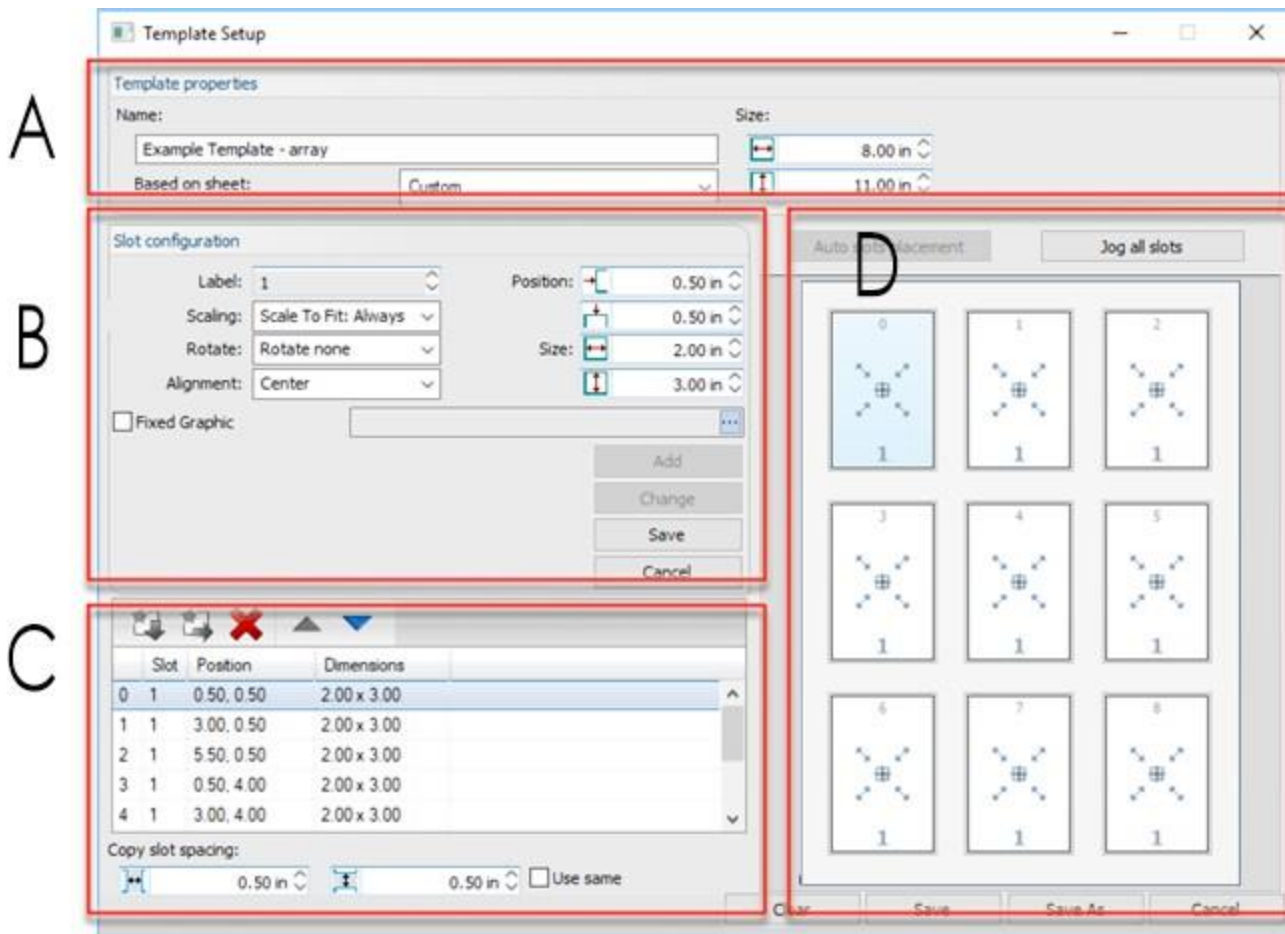
Creating a Page Layout Template

A page layout template is like a sheet of fixed media, except that there are one-or-more "slots" into which a received job will be slotted.

- A template has an overall width and height.

- Each slot has a width and height, plus a specific position within the template.

- When a job is received, it will be scaled to fit the slot.

- If there is more than one slot, then each slot will be filled with the received job.

- There can be different slot sizes, and the job will be scaled to fit the given slot.

- There are additional parameters that can be set for a slot, such rotation or alignment within the slot.

- Slots have a numeric label, such as slot #1, slot #2, etc. For slots of the same numeric label, they will be filled with the same job. For example, in the following screenshot, slots #1 will be filled with the first received job, and slots #2 will be filled with the next received job.
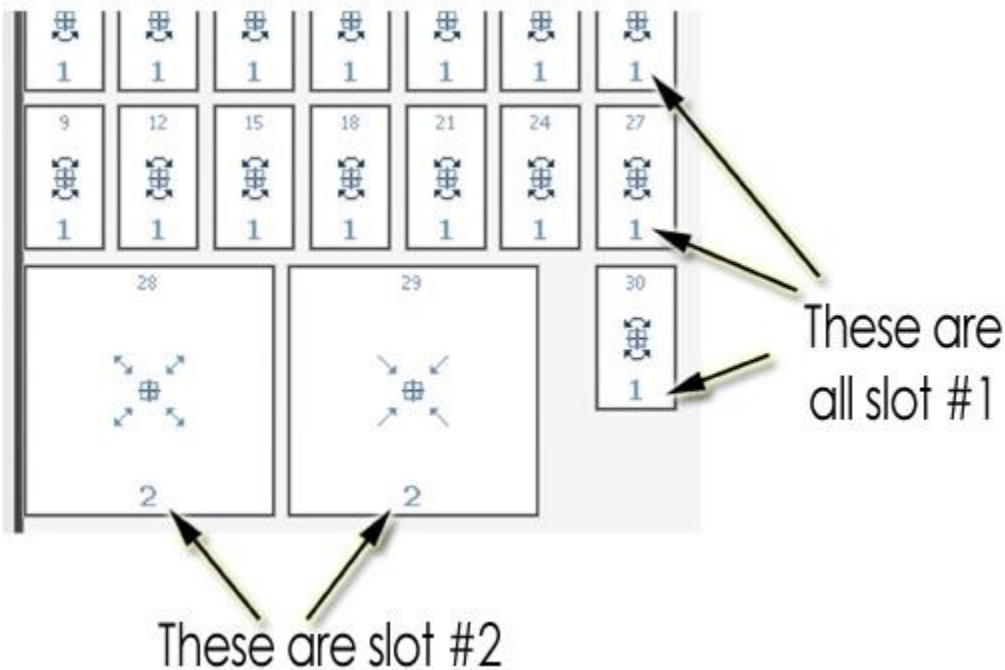
Now, in continuing from step (5) of the previous section (Creating a Custom Page Size), the **Create New Media** dialog prompted you to choose the type of media. Suppose that you clicked the **Create Template Media** button:

6. The **Template Setup** dialog will open.

A

B

C

D

Template Setup

Template properties

Name:

Example Template - array

Based on sheet: Custom

Size:

8.00 in

11.00 in

Slot configuration

Label: 1

Scaling: Scale To Fit: Always

Rotate: Rotate none

Alignment: Center

Fixed Graphic

Position: 0.50 in

0.50 in

Size: 2.00 in

3.00 in

Add

Change

Save

Cancel

Auto Slot Placement   Jog all slots

Slot	Position	Dimensions
0 1	0.50, 0.50	2.00 x 3.00
1 1	3.00, 0.50	2.00 x 3.00
2 1	5.50, 0.50	2.00 x 3.00
3 1	0.50, 4.00	2.00 x 3.00
4 1	3.00, 4.00	2.00 x 3.00

Copy slot spacing:

0.50 in   0.50 in   Use same

Clear   Save   Save As   Cancel

7. In area (A), type a name for your template and specify its overall dimensions.

8. In area (B), click the **Add** button, and specify the parameters of the given slot (i.e., size, initial placement, numeric label, etc.).

9. Click the **Save** button to create your slot, and the first copy of the slot will appear in areas (C) and (D).

10. In area (C), select the slot and copy it either down and/or to the right, thereby filling the template with duplicates of that slot.

Layout Manager Tab

> **Queue** menu >> **Properties** >> **Layout Manager**

> **Note:** The available controls can vary according to the printer model, and whether **Tools** menu >> **Options** >> **Show Advanced Settings** is enabled.

The **Layout Manager** tab controls how jobs are scheduled when received in the queue. In effect, these controls can force all jobs to be collected, so that the operator can confirm the job layouts before proceeding with a given print.

If the queue is **Stopped**, then all jobs are automatically placed on **Hold**, regardless of the **Output Scheduling** settings.

Layout jobs as they arrive

- **ON** - Enabling this checkbox causes received jobs to be placed in the Active List, and their layout is shown in the Visual Print Manager.
- **OFF** - Received jobs will be placed in the Reserved list. In such cases, the job needs to be manually moved to the Active List in order to print the job.

Mirror job on import

Reverse the job, such as for printing to clear transparent vinyl, where the vinyl will be applied to the window interior.

Invert job on import

Convert the job image into the equivalent of a photographic negative.

- For a greyscale image, light areas will become dark, and vice versa.
- For a color image, color reversal will occur, with red areas becoming cyan, green areas becoming magenta, and blue areas becoming yellow.

Page Overlay

If the "Process multiple page jobs as overlay" checkbox has been ticked, then the color layers within a job (i.e., CMYK and spot color layers) will remain "stacked," as opposed to being nested as separate jobs.

Layout jobs right to left

Alternate the starting edge from which jobs will be positioned within the Visual Print Manager.

Show "Import Template Job" dialog

This option is available when the **Media Setup** tab has been set for **Template** media.

The **Import Template Job** dialog will appear when a job is received, and you will be given a choice to either automatically place that job into the first available slot (**Express**), or manually choose the slot (**Select**).
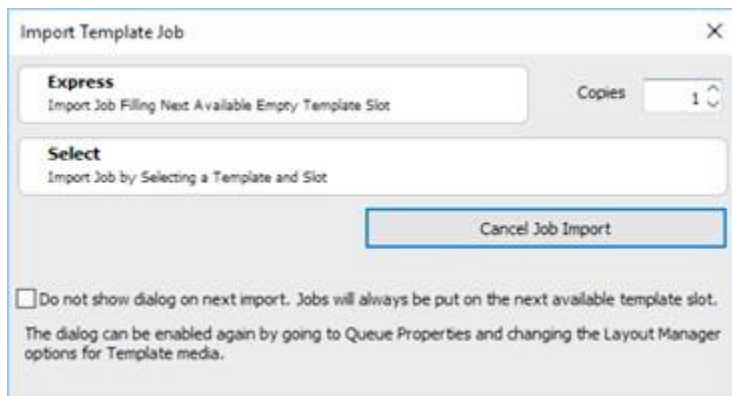
Remove Excess White Space

Normally, if there is trailing white space for a print job, the print head will still perform the passes to "complete" the job, despite the absence of any ink (i.e., process white CMYK = no ink). For a design that was printed without noticing that the trailing white portion portion could have been cropped off, this option will prevent the print head from performing unnecessary passes.

Output Scheduling

When a job is received, indicate what automatic processing of that job should occur.

The available options will depend upon the type of job, and the machine being used for output.

Printer Status Tab

Queue menu >> **Properties** >> **Printer Status**

Displays the current printer status, and provides maintenance options according to the given printer model. Consult the printer operator manual for explanations about the available controls.

Job Reserve Tab and Archiving

Queue menu >> **Properties** >> **Job Reserve**

From the main iColor® ProRIP window, the Reserve List is a short list for your frequently printed jobs. Sending a print job involves compiling a PostScript file into a spool file, and then the spool file is sent to the printer. When a job has been completed, it can be added to the Reserve List as a PostScript and (optionally) spool file for reuse.

- **Enable job reserve** - When a job has completed printing, its PostScript file will be added to the Reserve List.
- **Save spool file on job reserve** - Enabling this option will cause the compiled spool file to be reserved (i.e., avoid spending time compiling the PostScript into a spool file).

Job Reserve

☑ Enable job reserve

After a job has completed output, it will be placed in the bottom reserve bin for output at a later time. The job will retain the same output and layout settings used during the original output.

☐ Save Spool file on job reserve

Saving spool files will allow faster reprinting of jobs, however spool files can consume a lot of disk space. If you are running out of hard drive space you might consider having spool files deleted after job reserve.

Storage Statistics

19.33 MB	Total process queue storage size
0.00 KB	Total active spool file size
0.00 KB	Total reserved spool file size

Delete reserved spool files

Note: Where the spool file has been archived, re-sending the job does not require the time that was spent compiling the spool file (potentially several minutes, depending on the workstation and the complexity of the print).

Note: A spool file requires comparatively much more hard drive space than the corresponding PostScript file.

Archiving Jobs for Future Reuse

In addition to reserving jobs for later use, jobs can be archived as a combined JBK file that contains both the job and log data, such that the JBK can be safety stored (i.e., backups) and then restored at a later date. Restoring jobs in this fashion eliminates time spent re-spooling a file, and avoids any "guess work" related to the job settings, etc. Archiving also preserves the log and notes related to the job, such that job specifics can be referenced.

Setting the Archive Location

The archive location is the directory where archived jobs will be stored. This needs to be a location that can be accessed later to restore the given job.

1. Go **Tools** menu >> **Options** >> **Storage and Archiving** tab
2. Near the bottom of the tab, the location for job archiving is indicated.
3. To change the archive location, click the ellipsis button.

Archiving a Job

To archive a job, the job must be in either the Active List or Reserved List.

1. Select the job and then choose **Jobs** menu >> **Archive to disk**.
2. The archived job will appear as a JBK file in the archive location.

Loading an Archived Job

Loaded jobs will be placed in the active queue.

1. Click the queue tab to make it active.
2. Go **Jobs** menu >> **Restore Jobs**.
3. The **Restore Job Tickets** dialog will list the available archives.
4. Select the desired archive and click the **Restore Archive** button.

ICC Profile Tab

Queue menu >> **Properties** >> **ICC Profile**

Note: There will be an ICC Profile tab for each layer that has been defined (e.g., Color layer, Underbase layer, Finish layer, etc.).

There is already an ICC Profile set for all printing modes and media settings. The following instruction is for adding an additional ICC Profile.

An ICC profile provides a snapshot of the color gamut that a given input or output device is capable of rendering.

- Input profiles typically represent the colors as seen when creating the design in a graphic design application.

In order to produce the highest quality color reproduction, it is recommended that the input color profiles (in iColor® ProRIP) match the computer display that was used when creating the design. This can be done by using an industry standard input profile, or by using specialized equipment to profile the computer display.

Note that there can be different input profiles according to the type of graphic objects (i.e., line art, bitmaps). Also, input profiles can vary according to the color space that was used to represent object colors (i.e., RGB, LAB, CMYK).

- The output profile represents the colors that the printer is capable of reproducing, and this profile data is stored in the print mode.

In order to produce the highest quality color reproduction, the output profile is ideally created for your specific printer, such that the various operating conditions are taken into account (e.g., media, inks, operating environment of the printer, etc.).

Profile Sets

On the ICC Profile tab, there are three line-art tags (RGB, LAB, CMYK), and three bitmap tags (RGB, LAB, CMYK).
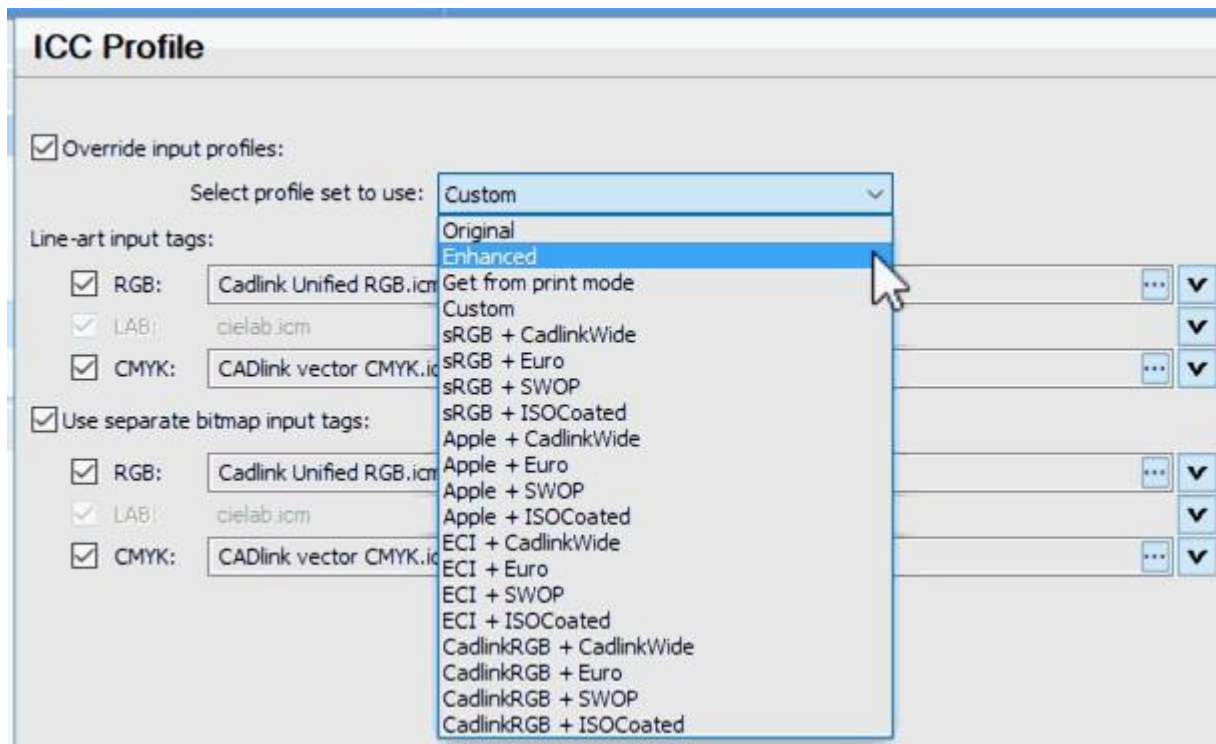
All six of these tags form a profile set, which is simply a convenient grouping of the input tags that you want to use. From the Select profile set to use drop-list, there is a selection of preconfigured profile sets, which are as follows:

- **Original** : Reset any changes to the input profiles.
- **Enhanced** : Use the enhanced input profiles provided by CADlink. These are the recommended choice of input profiles.
- **Get from print mode** : Use the input profiles as indicated in the print mode.

- **Custom** : Choose the individual input profiles.

Any additional profile sets are commonly-used industry standards that are beyond the scope of this documentation to describe.

Overriding Output Profiles (Devicelinks Color Edits)

You may override or add to the preset profiles, which would adjust CMYK settings such as contrast, lighten / darken your graphic, reduce / increase toner density and saturation. Devicelinks can be added to a queue, or an individual job. In cases where you wish to alter individual jobs:

1) Right click on a job you have already imported

2) Select 'Properties'

3) Expand the 'Color Layer' tab and click 'ICC Profile'

4) Check the 'Override Output Profile' box and then click the down arrow to the right of the current profile.
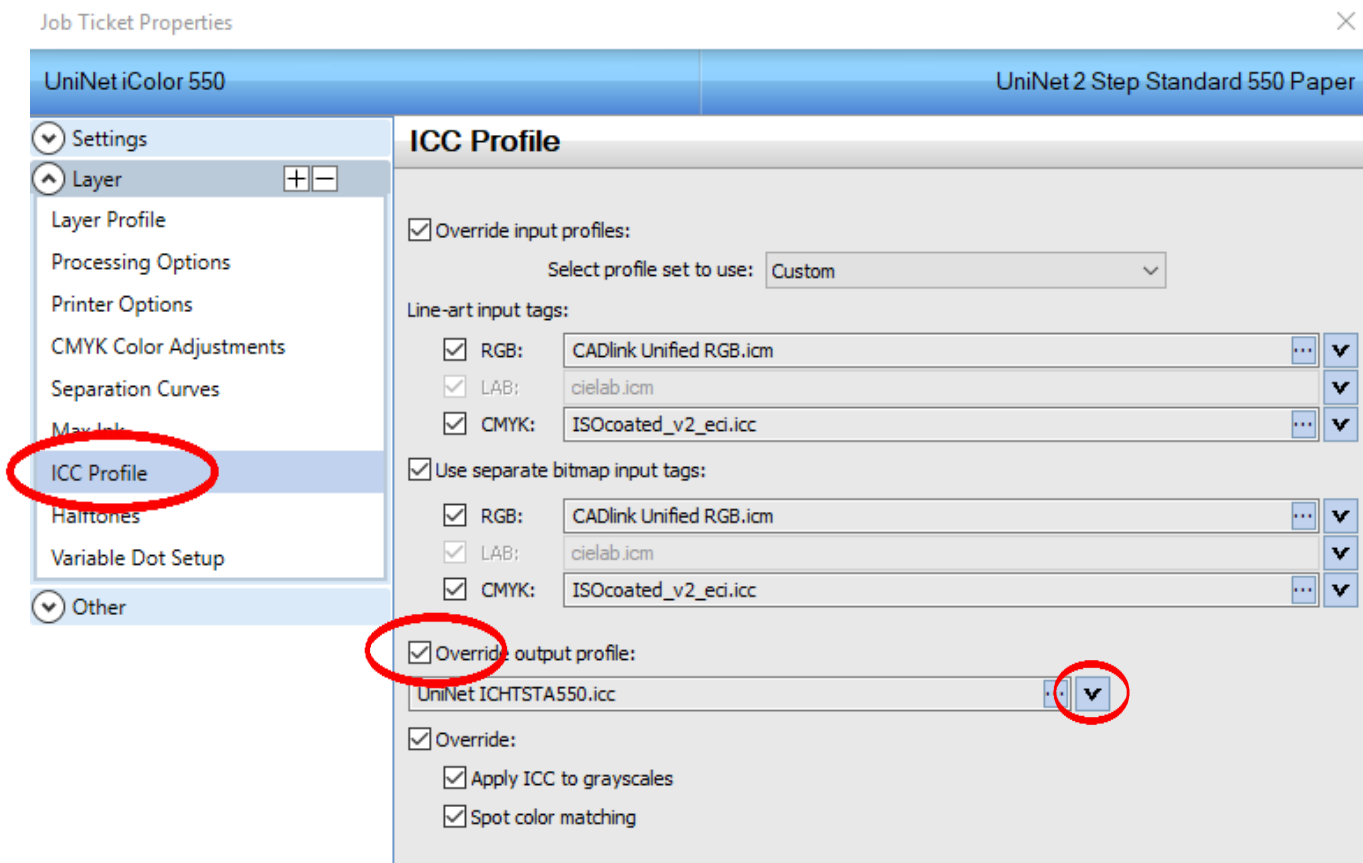
5) You can add up to four Devicelinks. Devicelink 1 will usually be predetermined based on the media and queue currently set. You can either override that, or add to it. In this example, we will add a second Devicelink. Click the three dots and then 'Select from Printer Profiles'.
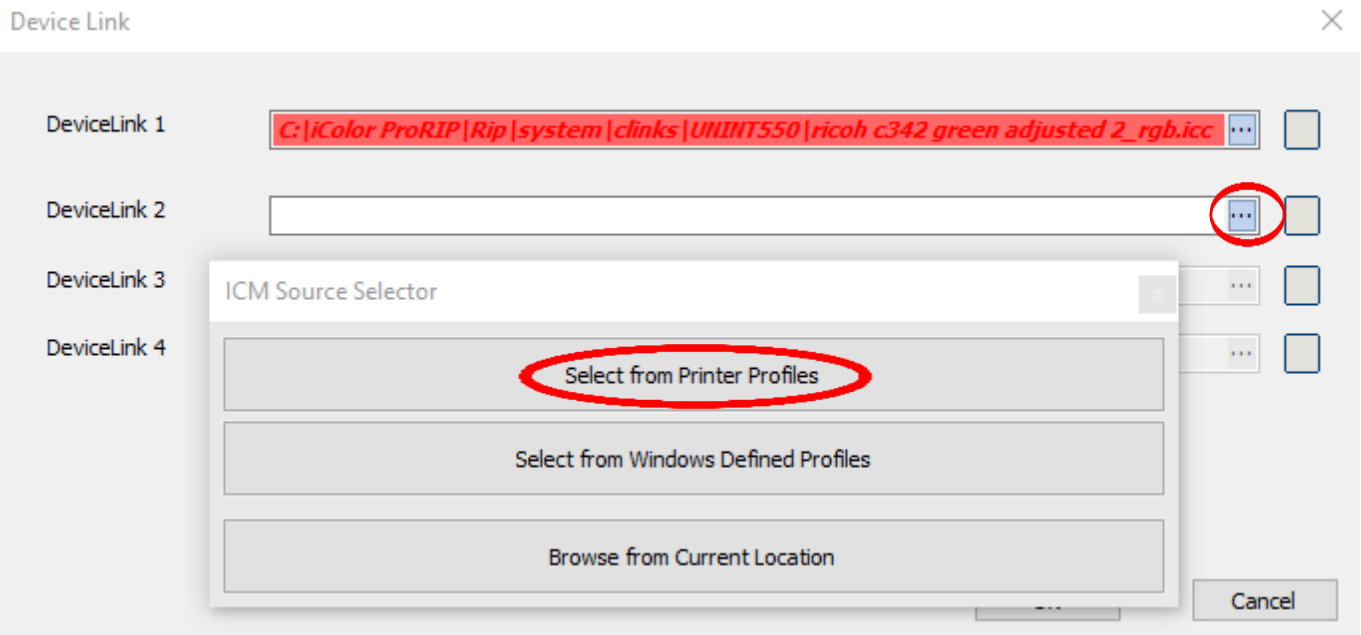
6) Navigate to the 'Devicelinks' folder and make your selection. Files names makes it easy to determine what each does. For example, 'Contrast 40pc' will increase your contrast by 40%. Click 'OK' once selected to set the profile.
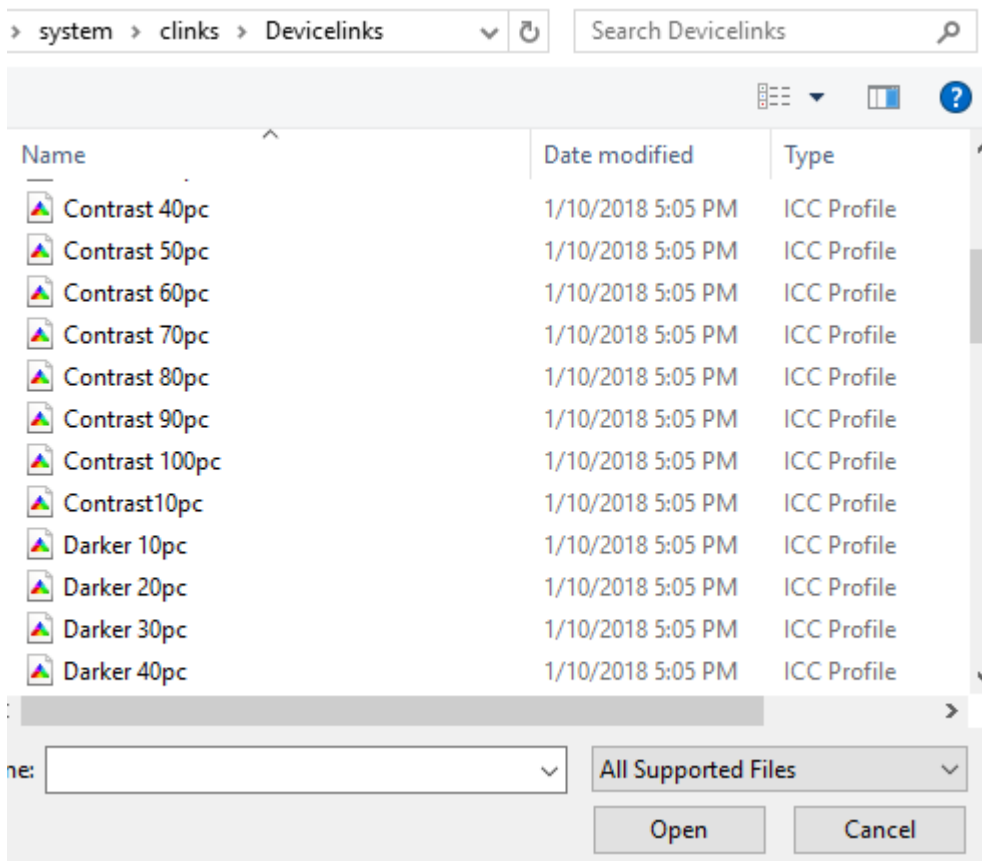
Rendering Intent

For the colors that are in the job, the rendering intent determines how those colors will be mapped from the input profile (i.e., from the graphic design application), to the output profile (i.e., per the print mode for your printer).

The rendering intent is actually a complex mathematical conversion, but you can choose the most appropriate rendering intent according to your job needs, including exceptions that you can define.
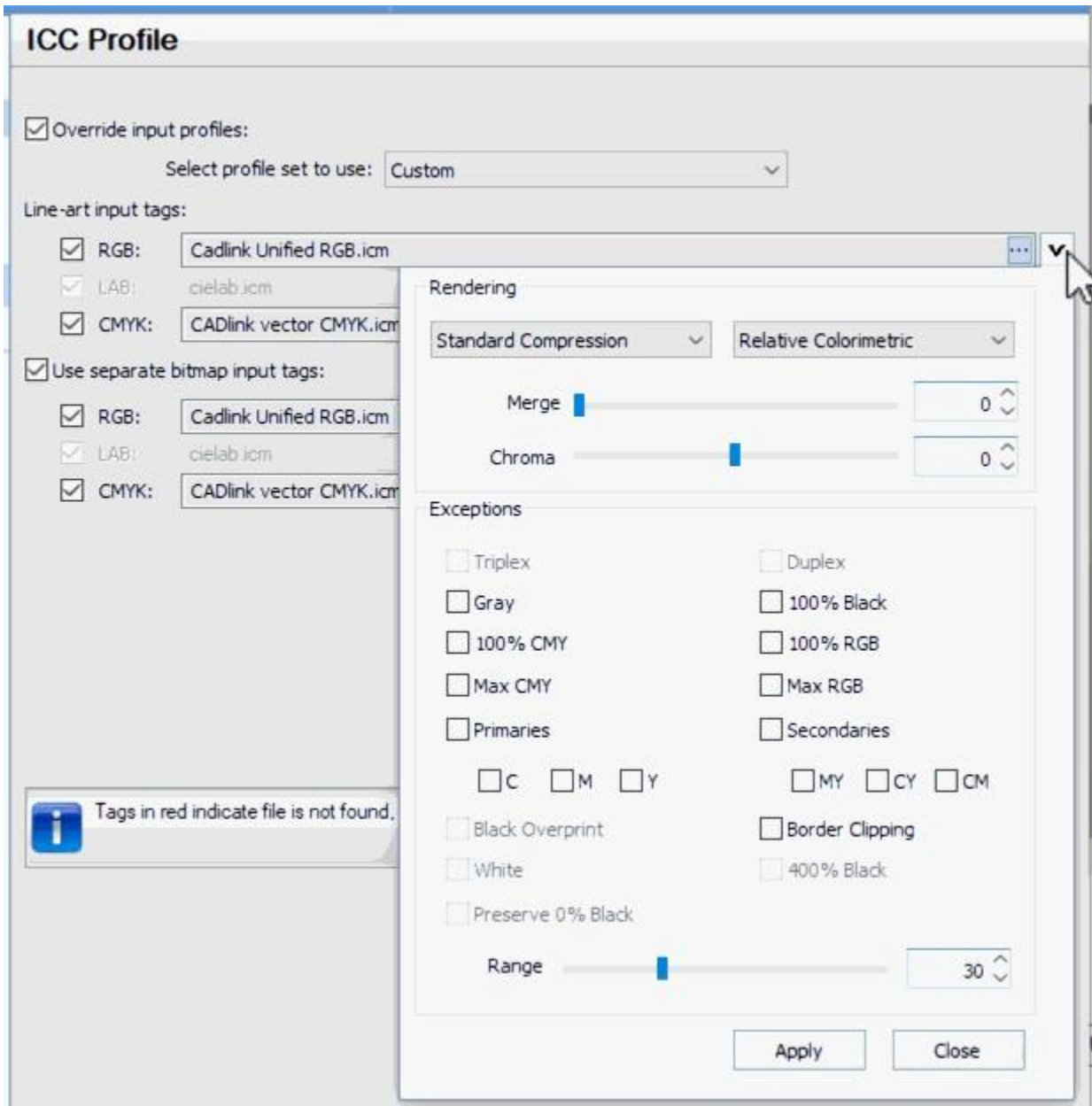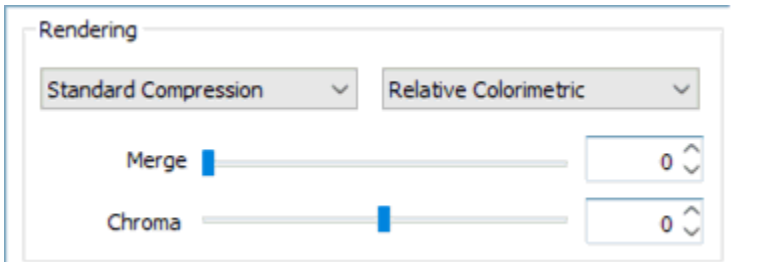

Changing the Rendering Intent

The rendering intent can be set for each of the six input tags (three line-art, three bitmap).

At the far-right of the given input tag, click the inverted chevron button to view the rendering intents, and

exceptions that can be applied.

The Merge Slider

For the two drop-lists, the first rendering intent is chosen via the left-hand list, and the second rendering intent is chosen via the right-hand list.

The **Merge** slider controls the amount of blending that will be performed between the first and second rendering intents. For example:

- Merge = 50 : This will cause a 50:50 blend between the two rendering intents.

- Merge = 0 : Only use the first rendering intent. Increasing the slider value will blend in more of the second rendering intent.

- Merge = 100 : Only use the second rendering intent. Decreasing the slider value will blend in more of the first rendering intent.

The Chroma Slider

Chroma is similar to saturation in the HSB color model. Chroma does not affect grayscales, and it has a more visible effect when colors become stronger (i.e., more saturated).

The **Chroma** slider can be used to increase or decrease the chroma in highly saturated colors by +20 to -20.

Increasing the chroma will make colors look stronger (i.e., more vivid), and decreasing the chroma will make colors look weaker (i.e., closer to gray).

Explanation of Rendering Intents

Both lists are identical, except that the first list starts with Perceptual, Relative, Saturation, and Absolute. All four of these are of a fixed definition per the ICC Consortium.

For Relative, Saturation, and Absolute, these three are completely fixed in how mapping is to be performed, so they cannot be blended with a second rendering intent.

Perceptual can be blended, and please note that Perceptual is equivalent to Standard Compression.
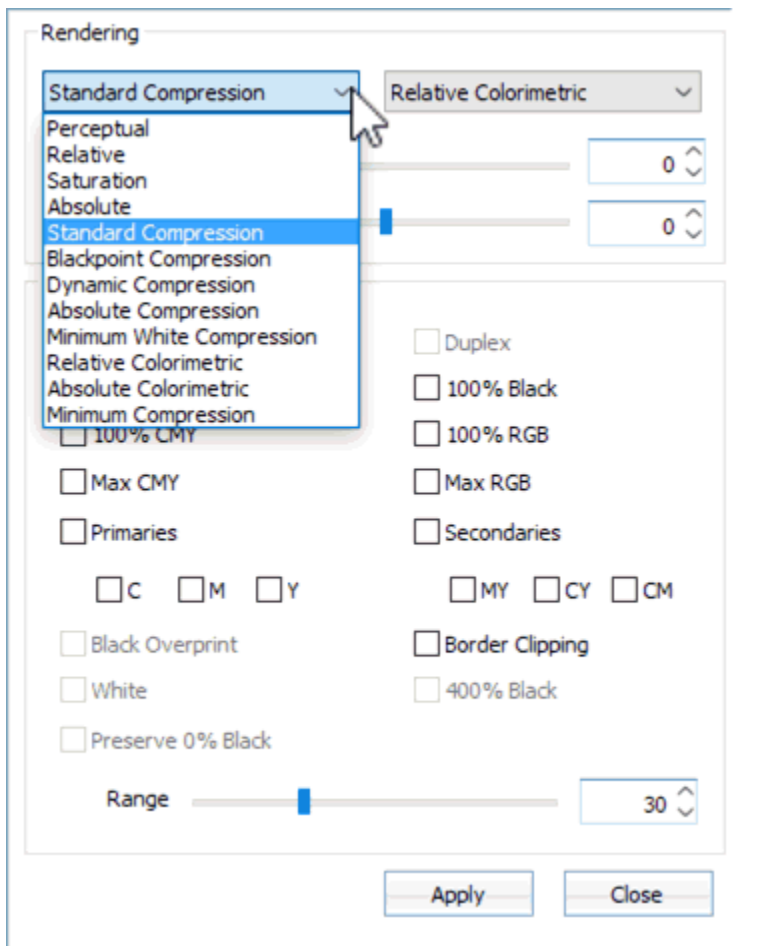
Perceptual

This intent is considered to produce more realistic images and photos than Absolute, Relative or Saturation mappings.

Almost the entire gamut is mapped to the target gamut, such that the relationships between colors are maintained. Since the human eye is more sensitive to changes in color, rather than to specific color wavelengths, the resulting image will appear quite similar to the original.

Though this reduces the dynamic range of the input gamut, smooth color transitions in the original image are maintained.

Relative

Colors that are not reproducible in the target gamut are replaced by an in-gamut equivalent, which attempts to preserve the lightness and hue of the original colors.

Saturation

The entire gamut of colors are scaled to the brightest possible saturation. The chroma is kept constant, though lightness values may be adjusted.

Absolute

Colors that are not reproducible in the target gamut are simply replaced by their nearest in-gamut equivalents. Unfortunately, this technique can produce noticeable hue shifts. And potentially, several discrete colors may all be replaced by a single color, such that abrupt edges are produced in previously smooth regions of the image.

Standard Compression

This is equivalent to Perceptual, except that neutral tones are converted using Relative.

Blackpoint Compression

This is intended for input/output gamuts that are of a similar size, though it is not suitable for small gamuts. Blackpoint Compression is similar to Relative Colorimetric conversion with black point compensation, but with both better definition in highly saturated colors, and hue-accurate color rendering.

Dynamic Compression

This rendering intent is used where the input and output profiles have a significantly large dynamic and contrast range. For example, RGB-to-CMYK conversions.

Absolute Compression

This is equivalent to Absolute, except that the contrast range in the highlights and shadows are adapted in order to avoid loss of image definition.

Minimum Compression

This is Perceptual Rendering that applies additional compression to the black point, so that the maximum dynamic range is utilized without loss of details in the shadow regions.

Minimum White Compression

This is like Minimum Compression, except that the additional compression is applied to the white point, which achieves a close match between the input and output gamuts.

This can be beneficial for cross media color appearance, color matching or printing on slightly different media. Also, this rendering intent can be regarded as close to absolute colorimetric rendering.

Relative Colorimetric

This is equivalent to Relative.

Absolute Colorimetric

This is equivalent to Absolute.

Influencing Rendering Intents with Exceptions

When an exception is enabled, the activity of the rendering intent will be blocked for that aspect of the printed job. A typical usage would be to preserve certain qualities in the design when printed.

There is no absolute rule as to when a given exception should be applied, since such applications are quite situational. Exceptions are akin to an artistic choice that constrains that rendering intents within specific regions of the printed job.

- **Duplex** – This provides a quick method of enabling all of the primaries to print as their pure color values. This includes Gray, 100% Black, and the CMY Primaries.

- **Triplex** – This is the same as Duplex, with the inclusion of the RGB Secondaries.

- **100% Black** – Print black ink with no CMY. This will affect only 100% black areas (not 99% or less). Printing 100% black is useful for small text because this will reduce bleed, thereby producing crisp text.

- **Gray** – This will print pure gray using black ink only, including gradients.

- **100% CMY and 100% RGB** – Force 100% Black to print as pure CMY / RGB.

- **Max CMY / RGB** – Increase saturation by printing the maximum CMY / RGB possible whilst retaining the expected hue.

- **Primaries and Secondaries** – Force colors to print as pure color inks, including gradients, without black ink.

- **Black Overprint** – Same as 100% Black, except minimize any CMY adjustments at the same time (CMYK designs only).

- **Border Clipping** – (CMYK input designs only) Clip any channel that will be firing close to 0% or 100%.

- **White** – Used with Absolute rendering intent. Ensure that white is always printed with no ink, otherwise there will normally be some ink that matches the white on input).

- **400% Black** – (CMYK input designs only) Print 100% Black as 400% Black.

- **Preserve 0% black** – (CMYK input designs only) Where K = 0 in the design, ensure that K remains zero when printed (i.e., do not perform substitutions of K for equal portions of CMY).

- **Range** – This is the tolerance within which an input color value will qualify for a given exception. Increasing this tolerance will cause more colors to be affected by exceptions, and vice versa.

Advanced Queue Properties

For iColor® ProRIP , these tabs are considered to be less frequently needed, and are hidden to reduce the complexity of the user interface. However, these tabs can be revealed via **Tools** menu >> **Options** >> **General** tab >> **Show advanced settings and options.**

CMYK Color Adjustments Tab

> **Queue** menu >> **Properties** >> **CMYK Color Adjustments**
>
> **Note:** The **Processing Options Tab** also has some CMYK Color Adjustment controls.
>
> **Note:** These are advanced tab controls that are hidden by default. To reveal these controls, tick the **Tools** menu >>
>
> **Options** >> **Show advanced settings** checkbox.
>
> **Note**: There will be a **CMYK Color Adjustments** tab for each layer that has been defined (e.g., Color layer, Underbase layer, Finish layer, etc.).

The **Color Adjustments** tab adjusts the color levels of the print job. These adjustments are not typically required because the ICC profile is created for use with a specific calibration. As such, performing color adjustments will actually distort the color accuracy of the ICC profile.

One reason for color adjustments would be to create an artistic effect. However, the main reason for color adjustments is to compensate for non-standard media and inks, where the cost of producing a new ICC profile is prohibitive. Making color adjustments by eye is neither quick nor easy, especially when adjusting the curve of individual color planes. Unless very experienced in color theory, the wisest advice is to keep any changes simple. For example, if adjustments were made to Shadows for Cyan, Highlights for Magenta, and Midtones for Yellow, all without checking the results of each   step, then there would be confusion over which adjustment caused a given effect.
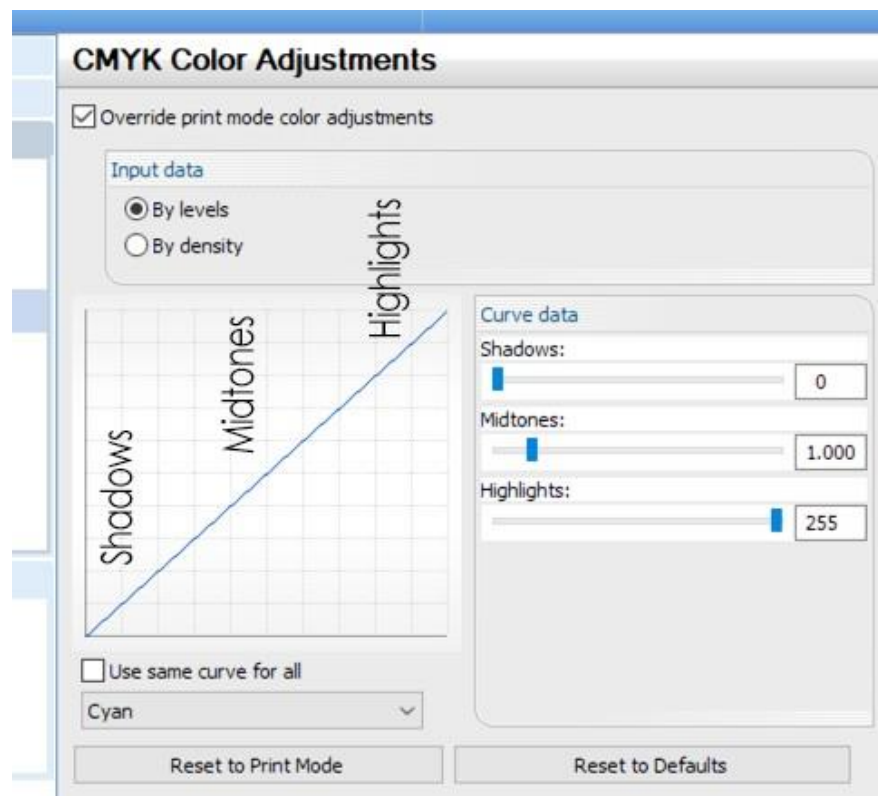
Tonal Correction

Apply tonal correction first by adjusting all the colors together (using the same curve for all CMYK color planes).

- Use the **Shadows, Midtones**, and **Highlights** sliders to lighten or darken the image (higher values to lighten, and lower values to darken).

- The easiest way to adjust the tonal range is to adjust the highlights first, then the shadows, and lastly
- the midtones. Once the midtones are correct, the highlights and shadows can be further tuned.

Printing a Test Page

Devices menu >> **Print test page**

All adjustments should be checked by using the **CADlink test page**, which is specifically designed to help recognize changes due to tonal adjustments. For example, the individual tints can be checked by referring to the tint percentage boxes, whereas the overall balance is checked by looking at the color graduation.

Note: When the test page looks correct, perform an additional test using a photographic image.

- If the 5% tint box appears to be empty and the 10% tint box appears too light, then reduce the white point (**Highlights** slider) by ten. If after another test these tint boxes appear too dark, then incrementally raise the white point and continue printing test pages.
- Similarly, if the 90% to 100% tints are too dark, then increase the dark point (**Shadows** slider) by ten. If after another test these tint boxes appear too light, then incrementally reduce the black point.

The Shadows Slider

The **Shadows** slider adjusts the black point, which is the lower end of the curve. Increasing the **Shadows** value causes the darkest parts of the print to be recognized as pure black, which also causes the darkest details to be lost in the shadows.

Generally, the purity of printed black depends on many factors, such as how many colors are being used. Use the mouse to adjust the **Shadows** slider.
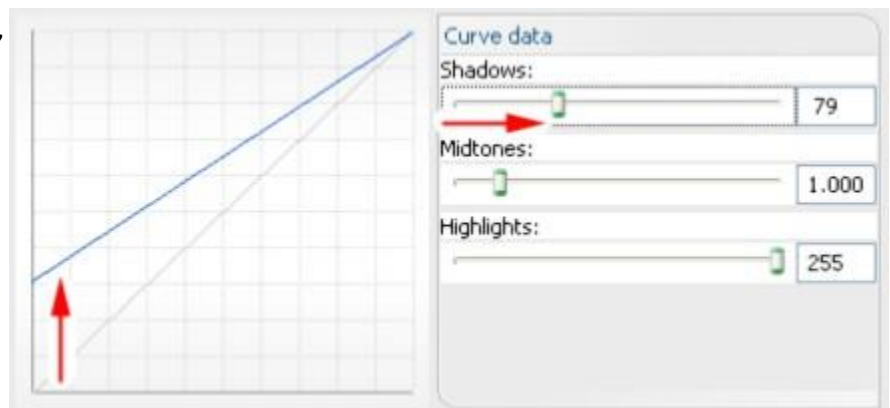
The Midtones Slider

The **Midtones** slider adjusts the gamma curve, which affects the midtones without changing the black and white points (the lower and upper ends of the curve, respectively). Raising the midtone of a color plane results in laying down less ink on the media for that color. Use the mouse to adjust the **Midtones** slider.
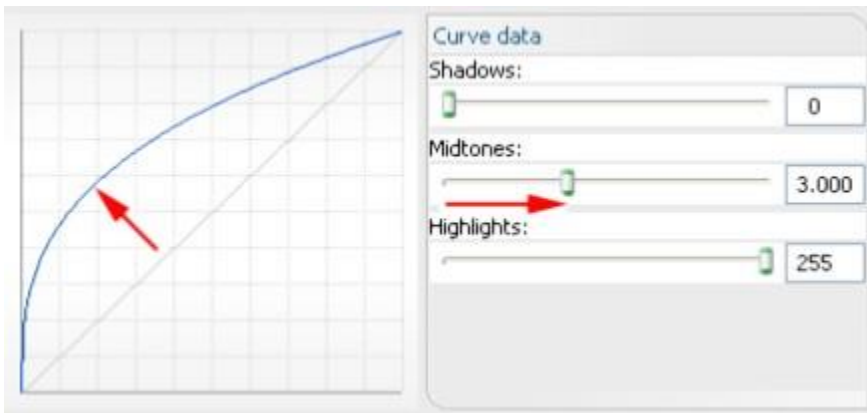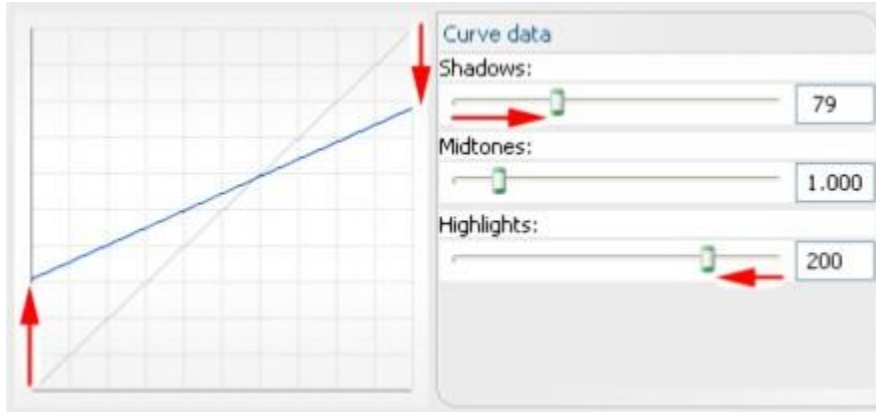

The Highlights Slider

The **Highlights** slider adjusts the white point, which is the upper end of the curve. Lowering the **Highlights** value causes the lightest parts of the print to be recognized as pure white, which causes the lightest details to be lost in the highlights.

Use the mouse to adjust the **Highlights** slider.
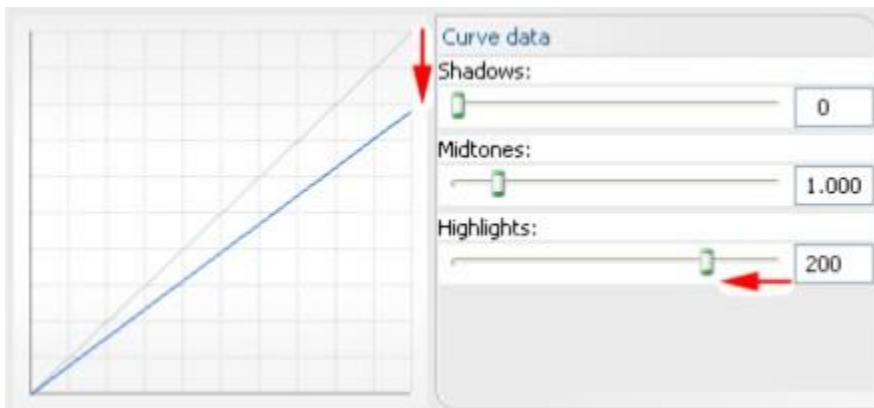
When both **Highlights** and **Shadows** are adjusted, the contrast between light and dark areas will be more pronounced. However, light and dark details will be lost as those tones were forced to either 0% or 100%.

The **Highlights** and **Shadows** controls are useful for preserving details on printers that are incapable of differentiating the darkest and lightest pixels accurately. By adjusting the white and black point values, more of the image details will fall   within the range that the printer is capable of rendering.

Density Curve

The **Density Curve** is used to set densitometer values for each color plane. This curve is similar to using the X-Rite colorimeter, though lower-cost hand held devices may instead be used, and the data must be entered manually.
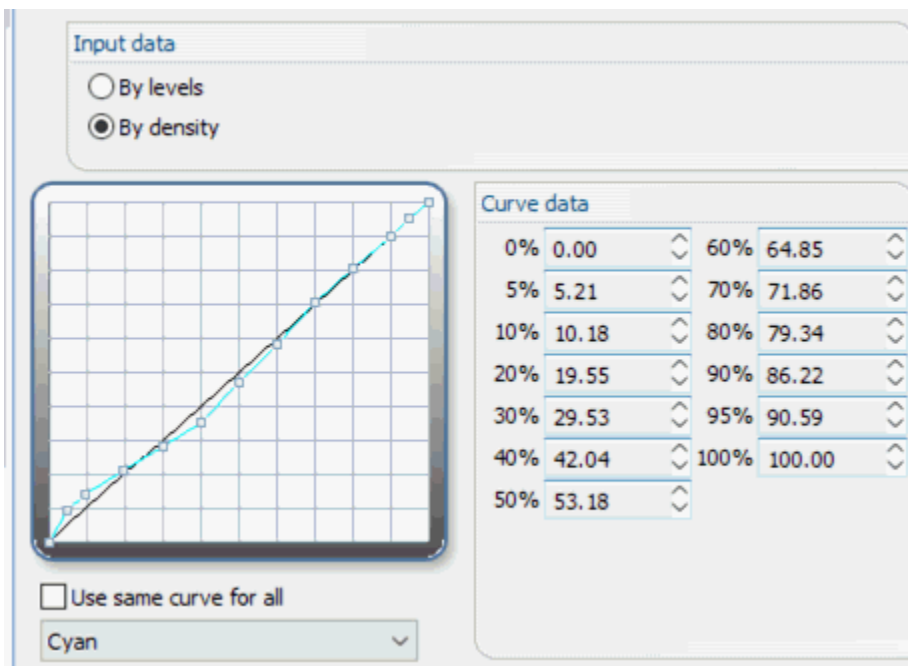
Separation Curves Tab

Removing a Color Cast

A color cast is a visual imperfection that is usually caused by a dominant ink (or set of inks). Depending on the complexity of the imperfection, the solution will be either simple or complex.

Simple Solution

In the simple case, removing a color cast is possible by adjusting the tonal settings of the individual colors that are causing the cast. Begin by adjusting the overall tonal balance. The color balance may then be adjusted using the **Midtones** slider for each offending color individually.

> **Note:** As previously mentioned, use Print test page (**Devices** menu) after each adjustment. When all adjustments appear complete, perform a final test by printing a photographic image.

Complex Solution

Where a complex color cast must be removed, the primary consideration is that each adjustment will affect the overall color balance of the image. Decreasing one color (say Magenta) will increase its opposite color on the color wheel (Green).
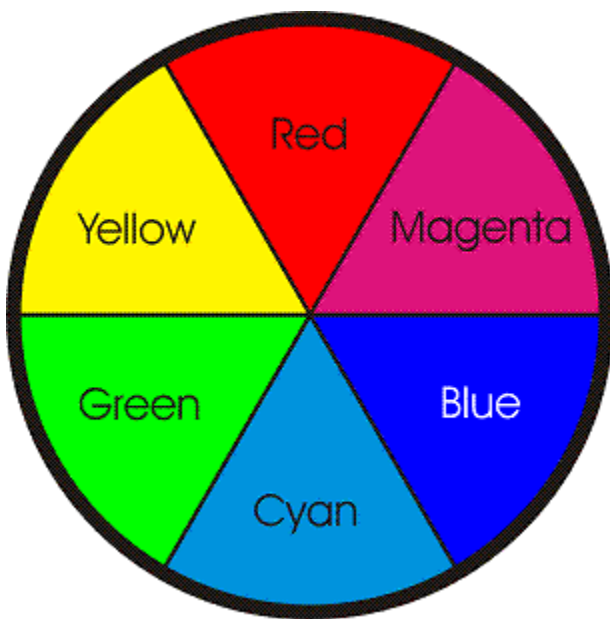
The effect occurs because Green is composed of both Yellow and Cyan. Reducing Magenta effectively increases the proportions of Yellow and Cyan (relative to the previous CMY proportions). Effectively, the image will appear greener.

Before solving this problem, note that the choice of color model is not significant. However, the recommendation is to choose the same color model used by the output device.

The first step is to identify the color(s) that are causing the problems. This is a personal talent that develops

with experience, so continue to practice. The **Print test page** (**Devices** menu) is a useful starting tool when identifying problems with color. All the necessary ingredients for judging color reproduction are contained in this file. Analyzing the hue wheel (printed as a 1" border), will reveal any bias towards a particular color.

The CMY (composite black) graduation will give the best indication of how well the CMY inks are balanced. Film Recorders usually produce a pure grayscale, whereas standard color reference systems (SWOP, PANTONE, EuroScale, etc.) produce a gray that has an acute Magenta tinge.

> **Note:** If the desired output will ultimately be rendered on an Offset Press, then it may be preferable to <u>reproduce the Magenta tinge.</u>

Once the problem colors are identified, the alternatives are:

1. Raise the midtone value of the problem color, which will result in a less saturated print.
2. Lower the midtone values of the non-problem colors, which will result in a more saturated print.
3. Combine alternatives (1) and (2) by raising the midtone value of the offending color, while also lowering the midtone values of the other colors.

Further Solutions

When working with color models, though the chosen model may be CMYK, Green may still be adjusted by modifying Magenta (which is the complement of Green in the color wheel). For example, increasing the amount of Magenta will reduce the green in the final print.

Where one color is dominant, such as an overall Yellow tinge to the whole page, the solution may be to reduce the **Shadows** slider for Yellow. This will reduce all areas of the page that have a large percentage of Yellow (90% - 100%), which will therefore have an immediate effect.

> **Note:** A color swatch from one of the standard reference systems (SWOP, PANTONE®, EuroScale, etc.) is an invaluable aid in the process of color correction, and well worth the investment. Using a color swatch will show exactly what the end result should be, allowing a direct comparison with the tints and graduations using **Devices** menu >> **Print test page**.

Variable Dot Setup Tab

> **Queue** menu >> **Properties** >> **Variable Dot SetupNote:** These are advanced tab controls that are hidden by default. To reveal these controls, tick the **Tools** menu >>
>
> **Options** >> **Show advanced settings**
> checkbox.
>
> **Note**: There will be a **Layer Profile** tab for each layer that has been defined (e.g., Color layer, Underbase layer, Finish layer, etc.).

The Variable Dot Setup provides exacting control over small, medium and large dot usage on variable dot printers. This provides the ability to set the thresholds for how dot sizes transition throughout the print.

However, adjusting these thresholds will typically require that the ICC profile be recreated for the given printer model.

Performance Tab

> **Queue** menu >> **Properties** >> **Performance**
>
> **Note:** These are advanced tab controls that are hidden by default. To reveal these controls, tick the **Tools** menu >>
>
> **Options** >> **Show advanced settings** checkbox.

Sending a print job involves processing the job into a spool file, and then the spool file is sent to the printer. The choice of print mode determines the RIP resolution at which the job is processed. High resolution print modes tend to produce higher quality prints, though this requires more time to process and spool jobs. So to reduce printing time, it is common practice to simply choose a lower resolution print mode.

As an alternative to manually using a low resolution print mode with certain jobs, the **Performance** tab can be used to automatically reduce the RIP resolution according to the job complexity. For example, with simple line art or text that has been scaled up to fill a large banner, iColor® ProRIP can determine that the maximum RIP resolution is not necessary in order to retain print quality.

Resolution Reduction
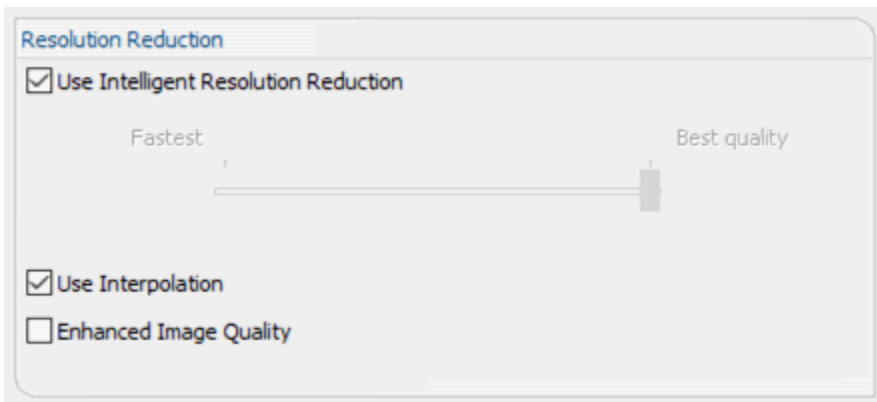
Use Intelligent Resolution Reduction

- If this checkbox is ticked (**ON**), then iColor® ProRIP will perform calculations for each job to determine whether a lower RIP resolution can be used.

- For jobs that would suffer at lower resolution, they will be processed at the resolution that is set within the print mode.

Resolution Reduction Slider

- If the checkbox is clear (**OFF**), then the **Resolution Reduction** slider will become active.

- This slider provides a manual means of adjusting the relative amount of resolution reduction that will be applied.

- If the slider is set to the far-right (i.e., **Best Quality**), then jobs will <u>always</u> be processed at the maximum RIP resolution (per the print mode). In other words, with the slider set to Best Quality, no resolution reduction will occur.

- If the slider is set to the far-left (i.e., **Fastest**), then jobs will be processed at the bare minimum RIP resolution of 72 dpi. This can be suitable for jobs that are composed of simple line art or text, though detailed jobs can potentially appear blotchy.

- Generally, manual adjustment of the slider (between **Fastest** and **Best Quality**) requires finding a happy medium. This will rely upon evaluating small printed samples at varying slider positions. For example, if batches of jobs are expected to have a certain level of detail, then perform small tests (at varying slider positions) to determine the most efficient setting for those jobs.

Use Interpolation

This option applies to imported bitmap formats, such as BMP, JPEG, TIFF, PSD, etc. Before a job is rasterized, the image data will be resampled to add anti-aliasing pixels, which will improve the perceived output quality. **Note:** This feature would not be desirable when printing separations.

Enhanced Image Quality

Enable this option to extend the **Use Interpolation** option to include PDF and EPS files.

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iColor® 2-Step *Standard* Transfer Media for light and dark colored garments

iColor® 2-Step *Select* Transfer Media for light and dark colored garments

iColor® 2-Step GLITTER Adhesive Transfer Media (for use with iColor® 2-Step *Standard* Transfer Media)

iColor® 1-Step LIGHT and SPEED TRANS LIGHT Transfer Media for light colored garments

iColor® 2-Step Presto! Transfer Media for textiles and hard surfaces

iColor® 1-Step CLASSIC, *Premium,* WOOD AND LEATHER and CERAMIC Hard Surface Transfer Media

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