Kodak Proofing Software v5.0

Custom Media Configurations

June 2010

Kodak It's time for you **AND** Kodak

Configuring Custom Media

The ability to configure custom media is a licensable feature for Matchprint Inkjet.

> ➢ Commercial and Packaging Editions include the license for custom media configurations. The feature is optionally available for Basic Edition.

> ➢ Creating a media configuration for a custom media can take most of a day, depending on the need for printer preparation and some choices (media type, resolution, dry time).

When is a Custom Media Configuration Needed?

A media configuration must be available for the combination of printer, ink, resolution, and media you are using.

➢Most commonly a custom media configuration is needed when you want to use 3rd party media.

➢A custom media configuration is also needed if you want to use Kodak media at a custom resolution

➢A custom proofer profile, sometimes called a paper profile, must also be created after you have created a custom media configuration.

➢If you want to use Kodak media and apply substrate emulation effects such as Paper Grain and Mottle or cardboard emulation you can edit a Kodak media configuration and save it as a custom media configuration. For optimum color results you should also create a custom proofer profile.

How Long does it take?

➢ To create a media configuration a number of targets will be printed for visual evaluation:
  - ➢ Paper feed adjustment
  - ➢ Total Ink Limit
➢ Additional charts are printed to characterize the device:
  - ➢ Single Ink Limit
  - ➢ Gray Balance Charts (2)
  - ➢ Characterization Chart
➢ And finally, a printer Calibration Chart is printed
➢ Measurements can be made using the Inline Spectrophotometer to automate most of the process. An off-line spectrophotometer can also be used.
➢ Your active participation is limited to printer setup and the visual evaluations if you are using a printer with an inline spectrophotometer. This requires 1-2 hours. Additional active participation is required to measure charts if you are using an offline spectrophotometer.
➢ The total time required is about 4-6 hours.

Preparation

- ➢ You should carefully prepare prior to beginning the process of creating a custom media configuration:
  - ▪ Load the proper media in printer. Make sure you have enough media to complete the process including calibration and creating a paper profile.
  - ▪ Make sure you have an adequate supply of ink.
  - ▪ Run a test print if the printer has been idle for a long time
  - ▪ Run a nozzle check test and clean if needed
  - ▪ Run the spectrophotometer alignment procedure (Epson x900 printers only).

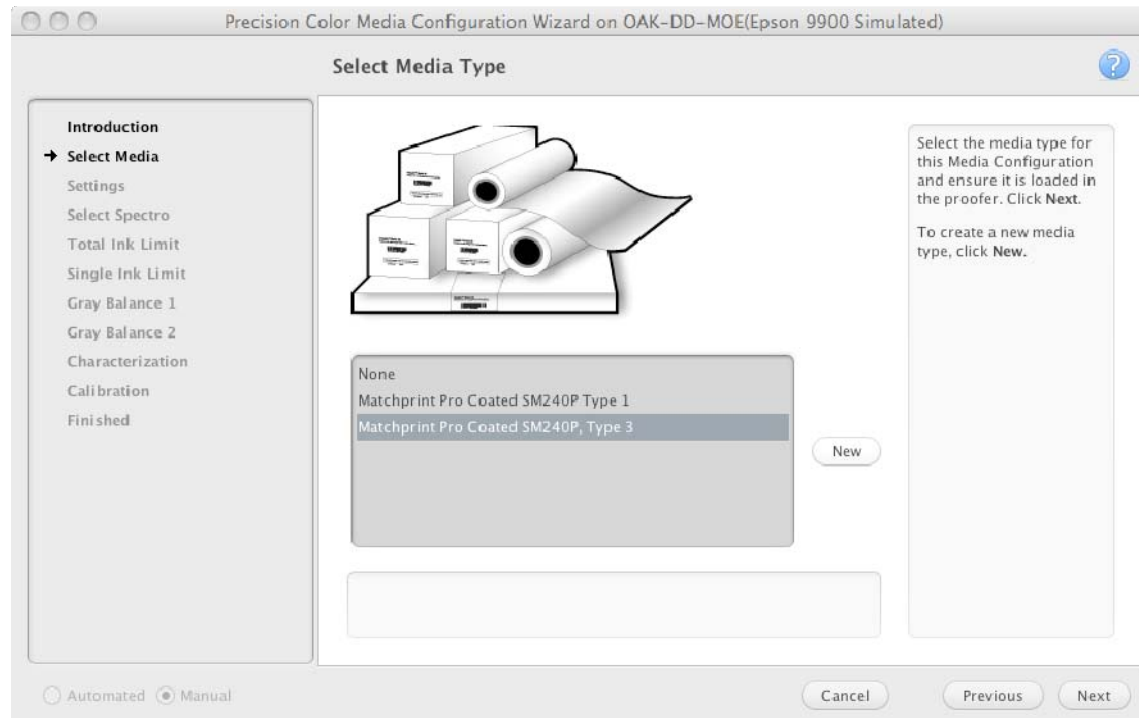# Step 1: Intro to configuration process
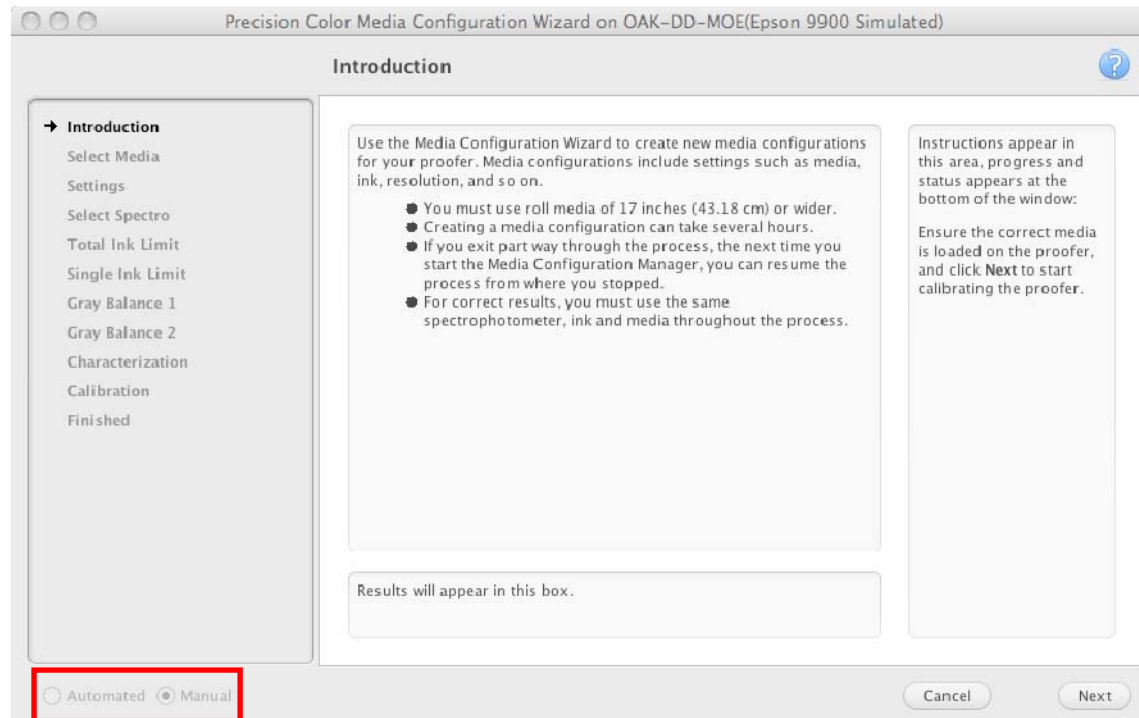
Process can be partially automated when using Epson x900 printers with the SpectroProofer option.

These slides assume an Epson x900 printer with the Spectroproofer option is being used. The steps are similar for other printers.

Step 2: Select Media Type

Step 3: Setup basic properties

The Online Help provides description of the basic properties. Settings will vary depending on the printer model.

Step 3: Basic Properties - Considerations

Setting	Description	Considerations
Ink Type	Specifies the name of the ink type	Matte ink normally works best on matte-coated or uncoated papers. Photo ink works best on semi-matte and glossy coated media. Some printer models require a user to remove one type of ink in order to install the other. This process can use significant amounts of ink. It is suggested that a user should choose the type of ink that is most appropriate and compatible with the primary media they plan on using in order to remove the need to swap inks, thereby increasing productivity and reducing waste.
Resolution	Specifies the resolution	Resolution is usually a trade-off between smoothness of vector artwork and print speed. Raster artwork is affected less when using lower resolutions. Consider the type of work to be produced when choosing a resolution. Most imposition work should be run on low resolutions (3x3, 7x3). Most contract proofing is run at middle-range resolutions (7x7, 14x7). Halftone emulation proofing runs best at high resolutions (14x7, 14x14).

Step 3: Basic Properties - Considerations

Setting	Description	Considerations
Print Direction		For Epson Stylus Pro printers, select Uni-directional (unidirectional) to print in only one direction, improve print quality, but reduce printing speed. This option is recommended for media configurations that you want to use with the Certified Process for Color Confirmation.
		For Epson Stylus Pro printers, select Bi-directional (bidirectional) to print in two directions, lessen print quality, but increase printing speed. With some printers and media configuration resolutions, you cannot use the Certified Process for Color Confirmation with media configurations that use this option because color shifts can occur.
		Note: You cannot edit this option once the media configuration has been created for media configuration files created for Epson Stylus Pro x900 printers at 720 × 720 resolution and higher, and for Epson Stylus Pro x700 printers at 1440 × 720 resolution and higher.
		Note: On some printer models image artifacts are more obvious with uni-directional printing than they are with bi-directional printing.
		For HP Designjet and Epson x880 printers, you cannot change the Print Direction setting.

Step 3: Basic Properties - Considerations

Setting	Description	Considerations
Microweaving		A higher microweave improves print quality but reduces printing speed. Select "Default" or "Appropriate" depending on the choices given. In general, there is little improvement to selecting something other than default or appropriate.
Platen Gap		Change this setting when using unusually thick or thin paper. Platen Gap works in conjunction with the Platen Gap setting on the printer hardware. For quality proofing medias, the most common choice for this setting is "minimum". Also, in most situations, the printer panel should be set to a middle-range or "standard" setting. Selecting something else may limit the printer's capability to handle the platen gap setting that comes from the KPS media configuration. Refer to the printer documentation and/or media manufacturer's documentation to help you choose the best setting.
Vacuum Intensity		Enables you to increase the vacuum intensity for thicker paper and decrease it for thinner paper. The typical setting is 100%. For thinner medias, it may be desirable to lower the vacuum intensity to improve image quality and avoid artifacts. Note that this setting is the vacuum intensity during printing and does not affect the load vacuum. When loading paper, it is possible to change the vacuum intensity from the printer panel. For thinner medias, especially in sheet form, it will be easier to load if the load vacuum intensity is turned lower.

Step 3: Basic Properties - Considerations

Setting	Description	Considerations
Cutting	Specifies whether to cut the paper automatically	Making a specific selection here overrides the printer panel settings. Kodak recommends choosing "front panel setting" so the user will be able to control cutting preference at the printer panel.
Cutting Pressure		Enables you to decrease the cutting blade pressure for thinner paper to make a cleaner cut. This setting is not available on all printer models.
Check DeltaE94 Tolerance		This setting is no longer used but may appear for some printers. Leave at the default setting.
Drying Time per pass		Specifies the time, in milliseconds, between each pass of the print head to allow the ink to dry on the page. For non-paper substrates (vinyls, films, etc.) it may be desirable to allow some dry time between each pass to improve image quality.
Drying Time per page		Specifies the time, in seconds, between each page to allow the ink to dry. This setting can be changed later by editing the media configuration. In some situations it may be desirable to allow some dry time between proofs/pages. If a proof with wet ink is cut and drops into the catch-bin, there is a chance that the wet ink will smear. If you are proofing on a non-paper substrate (vinyls, films, etc.) OR with a high ink volume OR in a high-humidity environment, it may be necessary to allow some dry time per page to prevent damage to the finished proof.

Step 3: Basic Properties - Considerations

Setting	Description	Considerations
Paper Thickness	Specifies the paper thickness for the media type.	An incorrect paper thickness setting may cause vertical banding or other image artifacts on the page. If you have the ability to measure the paper thickness, do so and choose the closest value that is larger from the menu. If you cannot measure the thickness, a good rule of thumb is to divide the media weight in grams per square meter by 1000. For instance, a good starting paper thickness selection for a 200 gsm media might be 0.2 mm. If you see artifacts on the initial media config proofs, you will want to start over and make a change to this setting. If possible, try to get the proper thickness from your media vendor's technical documentation.

Step 3: Basic Properties - Considerations

Setting	Description	Considerations
Minimum wait time before measurement	Specifies the minimum time you must wait before you can measure the media configuration	In any type of printing process, there is a period of time immediately after imaging in which the printed image will change color. This is commonly referred to as "dry-back", "curing", or "stabilization". For some printing processes, especially processes like inkjet proofing which use water-based inks, this stabilization time can be quite long (between 15 and 20 minutes). Humidity can also affect stabilization time. High humidity environments will make stabilization time longer. In order to capture the most repeatable and consistent measurement data from day-to-day, it is important to take this stabilization period into account. This setting is a way to enforce a specific wait-time before measuring to make sure the user has allowed the proof to stabilize.
Maximum wait time before measurement	Specifies how long you have to measure the media configuration	As proofs age over time and in different lighting conditions, the colors on the proof can change. It is important to not measure proofs which are too old, have been exposed to too much direct light, or have been exposed to adverse environmental conditions. It is generally best to measure a proof within a very short time period after it is printed. This setting allows the user to enforce a maximum proof age for any measurement proofs. Too small of a number here will require that an operator be ready to measure proofs very soon after printing. Too large of a number could allow a proof to shift color depending on the lighting and environmental conditions. A good suggested setting here is 120 minutes.

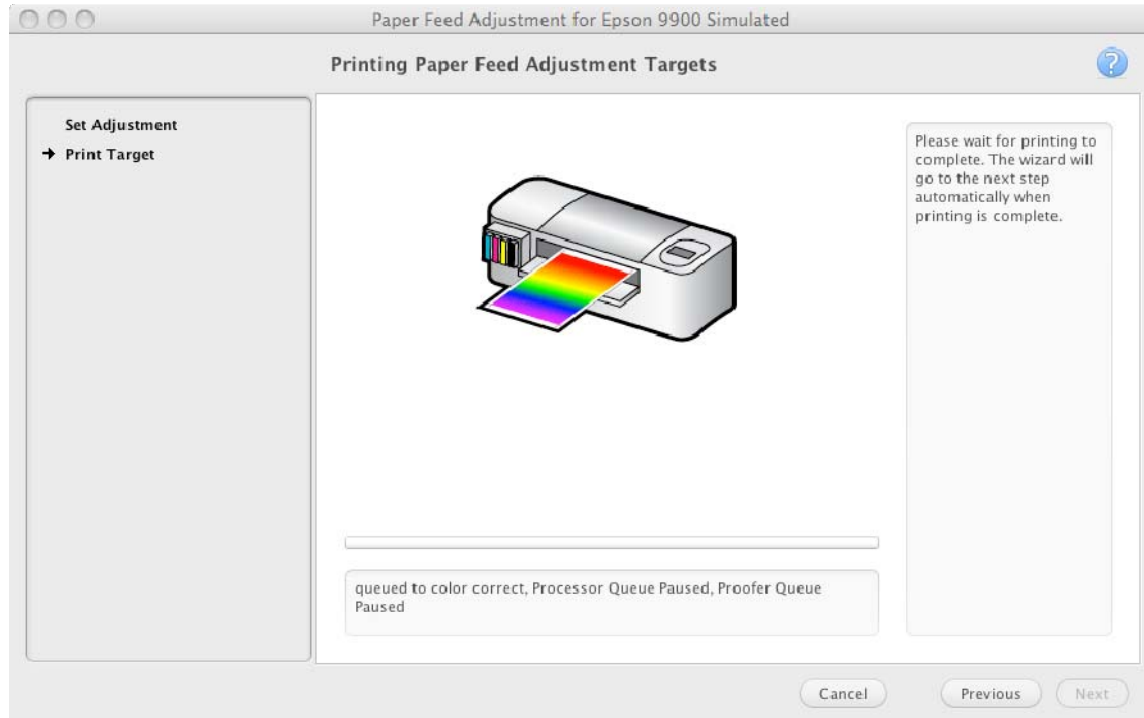# Step 4: Select Spectrophotometer
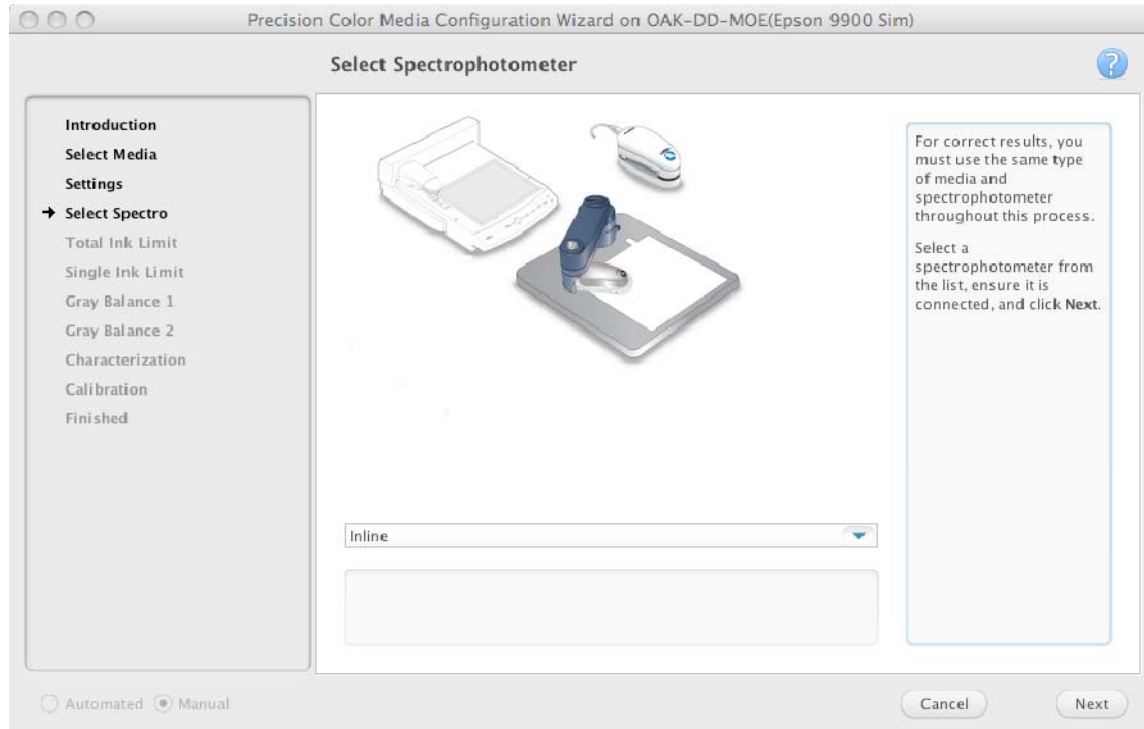
Step 4: Check Paper Feed settings before printing targets
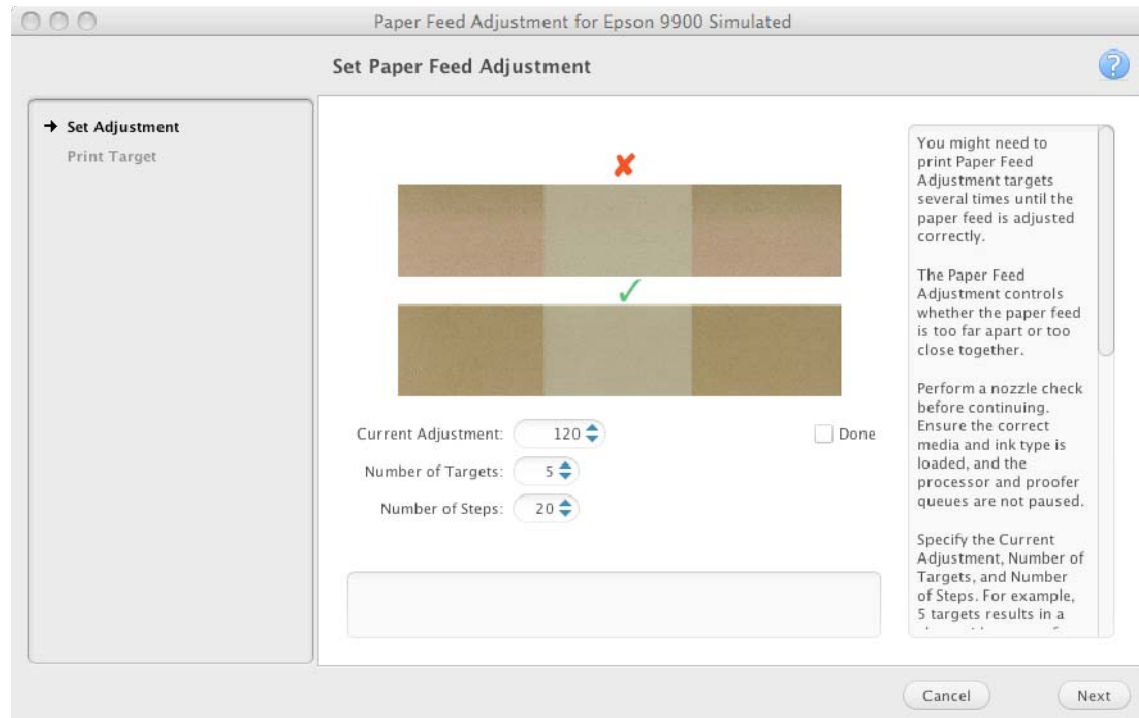
Step 4: Printing targets

Step 4: Paper Feed Targets

The paper feed adjustment controls whether the paper feed is too far apart or too close together. The target printed depends on the printer model. The following charts describe the targets and what to look for.

Printer and Resolution	Paper Feed Adjustment Target	What to Look for
Epson Stylus Pro 7900 and 9900 printers using media configurations with a resolution of 720 x 360 dpi	The target contains gray patches of varying color	Light stripes indicate the paper feed adjustment is too large, while dark stripes indicate that the paper feed adjustment is too small. When examining the paper feed adjustment target, look for light or dark stripes along the gray patches. The gray patches should be smooth from left to right and top to bottom, with no equally-spaced horizontal lines (stripes) from top to bottom. When examining the patches, also look for color differences between the top and bottom of the patches. The image in the wizard below the x shows patches with color that changes from top to bottom. This is an example of an undesirable. target. Patch color should be uniform.

Step 4: Paper Feed Targets

Printer and Resolution	Paper Feed Adjustment Target	What to Look for
Epson Stylus Pro 7900 and 9900 printers using media configurations with resolutions of: •2880 x 1440 •1440 x 1440 •720 x 1440 •720 x 720	The target contains gray patches of varying color	Graininess and color changes across a patch indicate too much or too little paper feed adjustment. When examining the paper feed adjustment target, look for uniform gray patches and smooth grain across the row.

Step 4: Paper Feed Targets

Printer and Resolution	Paper Feed Adjustment Target	What to Look for
All other Epson Stylus Pro printers, media configurations, and resolutions	The target contains a blue gradation	Light stripes indicate the paper feed adjustment is too large, while dark stripes indicate that the paper feed adjustment is too small. The vertical spacing differs for different resolutions. When examining the paper feed adjustment target, look for light or dark stripes along the gradation. The gradation should be smooth from left to right, with no equally-spaced horizontal lines (stripes) from top to bottom.

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Step 4: Paper Feed Targets

After the paper feed targets are printed and you have chosen the best value enter it into the Current Adjustment field, enable the Done checkbox, and click on the Next button to continue.

Step 5: Print Total Ink Limit Charts
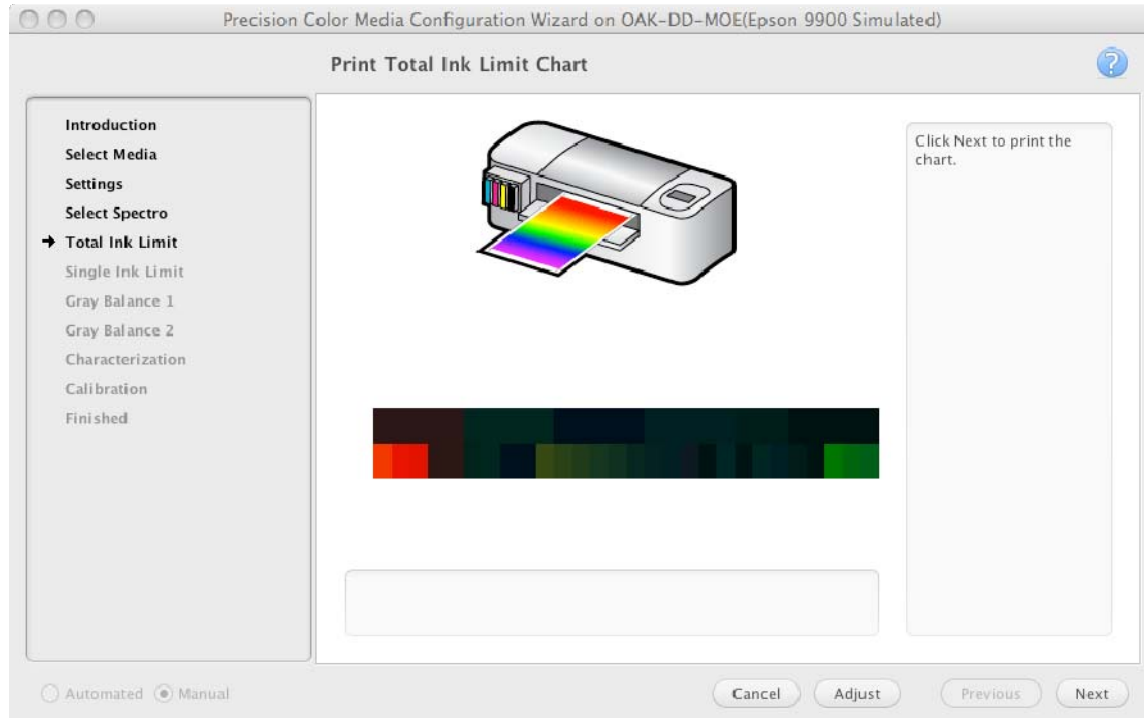
Total Ink Limits - What to check

After printing the Total Ink Limit charts inspect the charts for artifacts. Tilt the media to better see artifacts. Select the highest total ink limit with the fewest artifacts.

The types of artifacts you will see depend on the media. The following tables list common artifacts for different types of media.

Media may exhibit more than one type of artifact.

A high total ink limit provides the largest gamut and the most artifacts. In contrast, a very low total ink limit provides the smallest gamut, and artifacts can appear when too little ink is used. The goal is to select the largest total ink limit number with the fewest artifacts.

Note: These descriptions are provided in the Online Help.

Total Ink Limits - Common Artifacts

Media Type: Matte media printed at low resolution

Common Artifact	Description
Banding	Patches appear to have stripes in them. The patches should look uniform.
Media puckers / Cockle	Media that is saturated with ink can pucker. When the media puckers too much, the media can touch the imaging head, and the contact leaves a mark on the proof. The media should have enough ink for a wide gamut, but not too much ink. Media puckers are easily seen on the back of the media.
Mottling	Patches appear grainy or spotty. The patches should look uniform.

Total Ink Limits - Common Artifacts

Media Type: Clear Media

Common Artifact	Description
Puddling	Patches have puddles of ink in them. An ink puddle forms when two or more drops of ink merge into a puddle or a pool.
Tackiness	Patches are sticky to the touch. On clear media, patches will stay a little tacky, but they should be almost dry to the touch.

Total Ink Limits - Common Artifacts

Media Type: Higher Quality Media

Common Artifact	Description
Center green patches appear to have foggy or frosted streaks	The green patches in the center of the chart appear to have streaks in them. The patches should look uniform.
Heavily inked patches appear foggy or frosted	Heavily inked patches have a dull appearance or may show a differential gloss effect. The patches should look shiny.
Mottling	Patches appear grainy or spotty. The patches should look uniform.
Tackiness	Patches are sticky to the touch. Patches should be dry to the touch.

Step 5: Set Total Ink Limit

Step 6: Single Channel Ink Limit Chart
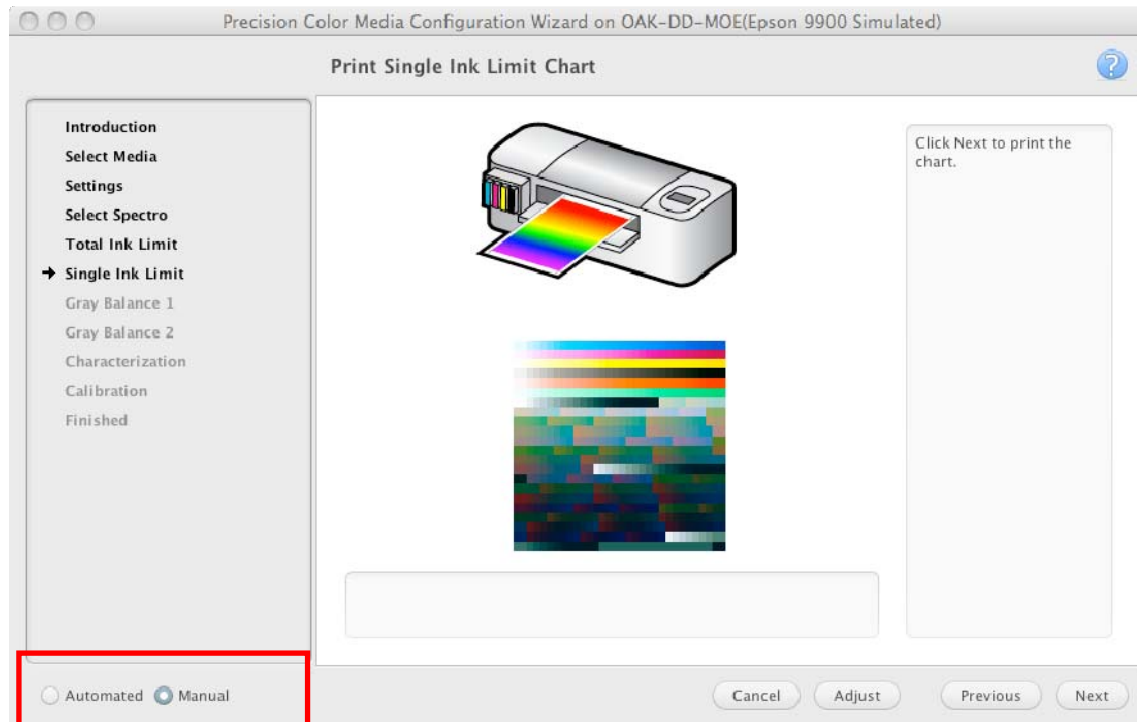
Processing from this point forward can be fully automated with the Epson x900 printers with the Epson SpectroProofer option. The remainder of the process will take about 2 hours.

If you are using an offline spectrophotometer you will need to measure charts and the process will take longer to complete.

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Step 7: Gray Balance Chart 1
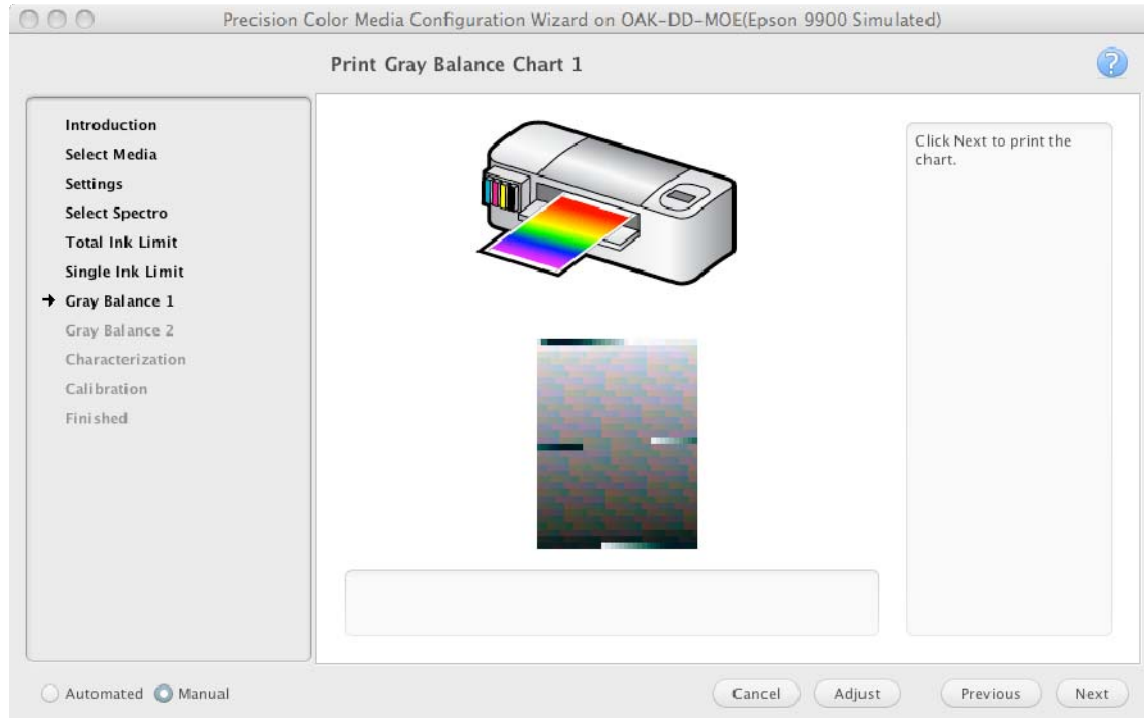
Step 8: Gray Balance Chart 2
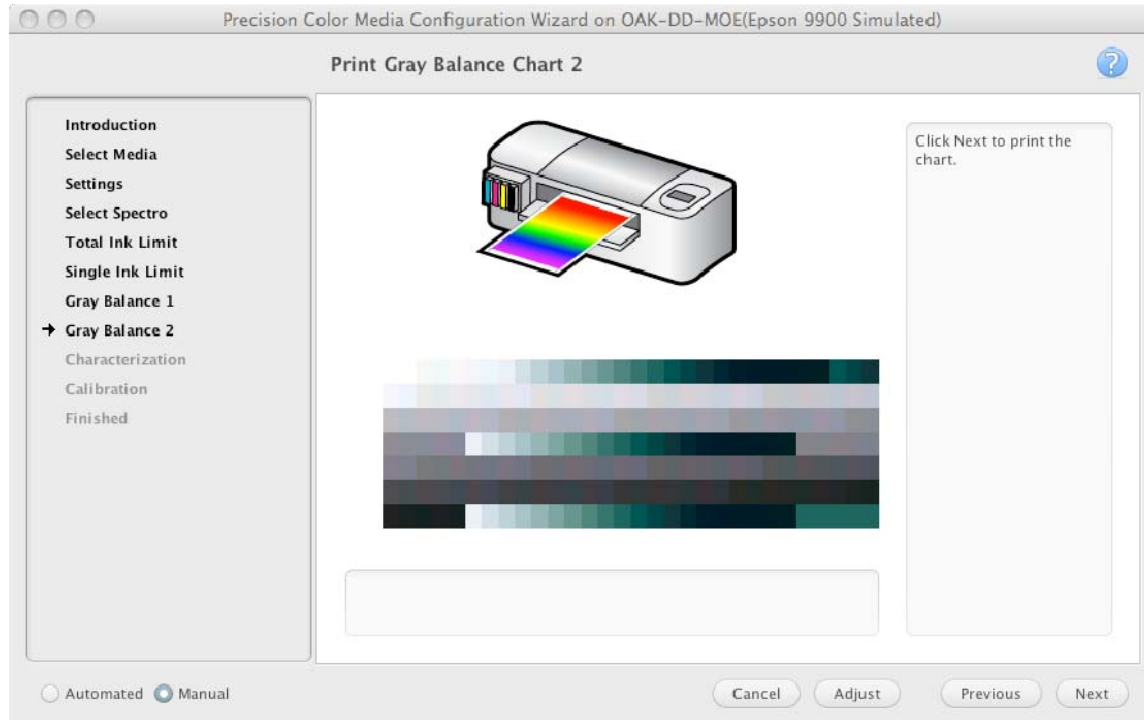
Step 9: Characterization Chart
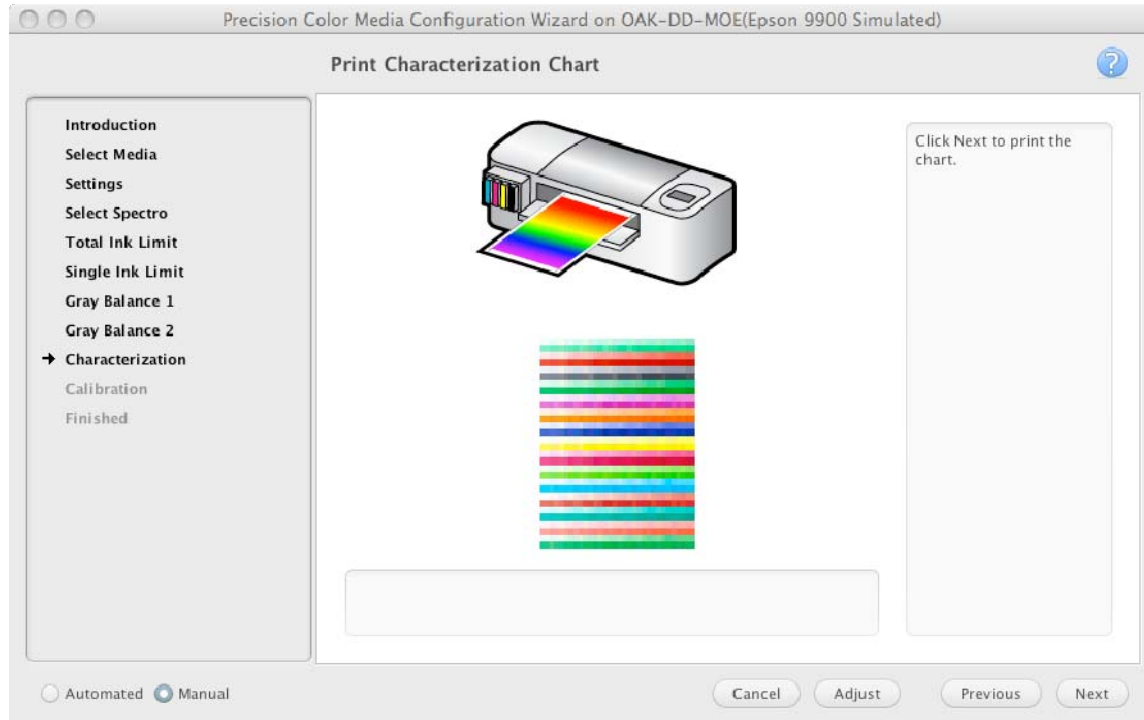
Step 10: Calibration Target
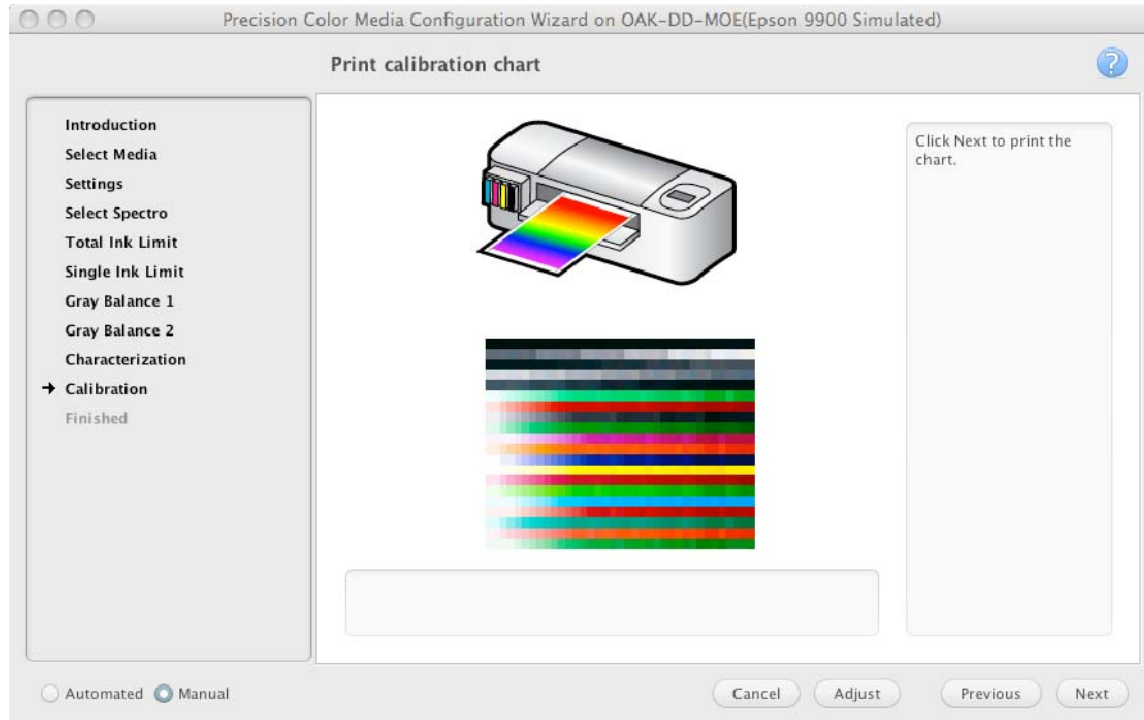
Step 10: Congratulations!
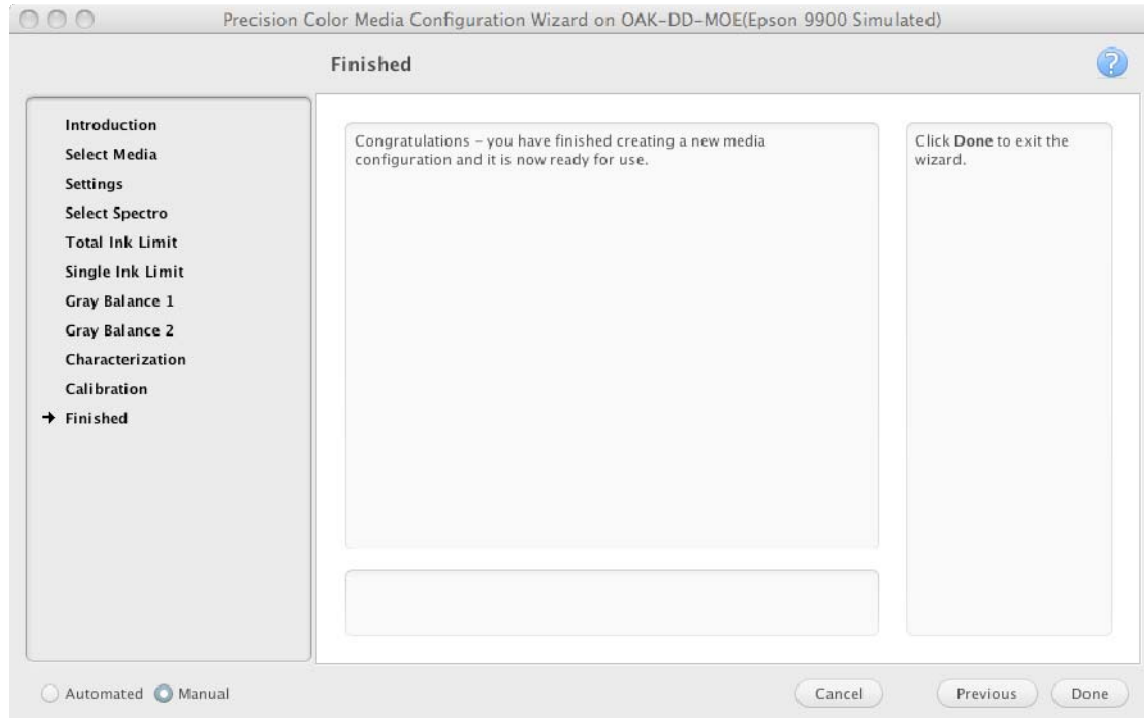
Enable Media Configuration

> ➢ Media Configurations are automatically enabled and calibrated.

Media Configuration General Parameters

> Edit media configuration as desired
>> Drying Time
>> Fine Line Precision
>> Corrugated Simulation

> If you change any of these parameters you should recalibrate the proofer before creating an ICC profile.

> Render resolution can be changed to reduce processing time by selecting a lower values or to allow for auto-rotate by selecting a symmetrical resolution.

> Note that if you edit a Kodak media configuration you will need to save it with a new name. You will need to re-sign profiles to use them with Certified Process for Color Confirmation.

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Media Configuration General Parameters

> Edit calibration parameters as desired
> - Automatic Calibration
> - Calibration Tolerances
> - Calibration Effort
> - Ink Drying Time

Create a Paper Profile

Once you've created the media configuration, create a paper profile. Follow these steps:

- ➢ Create a hot folder or virtual printer with all ICC color management turned off.

- ➢ Print a target from ColorFlow Software or your profiling application (such as the IT8 or ECI).

- ➢ Measure the target with the same device you used to create the media configuration unless you are using an Inline spectrophotometer. For best color results the filter used to create the paper profile should match the one used to create the Simulation profile. Keep in mind that all industry standards are based on unfiltered measurement data.

- ➢ Import the profiles using the Proofer Administrator application. Sign the profile if desired to set the profile category.

- ➢ If you are using ColorFlow for Kodak Proofing Software see the Implementation Guide for Matchprint Inkjet for details on creating a paper profile.

Backup Data

Once you've created the custom media configuration and paper profile you should backup your data.

> ➤ Backup the system using the Proofer Administrator or export the custom media configuration and paper profile and manually backup on a different server.
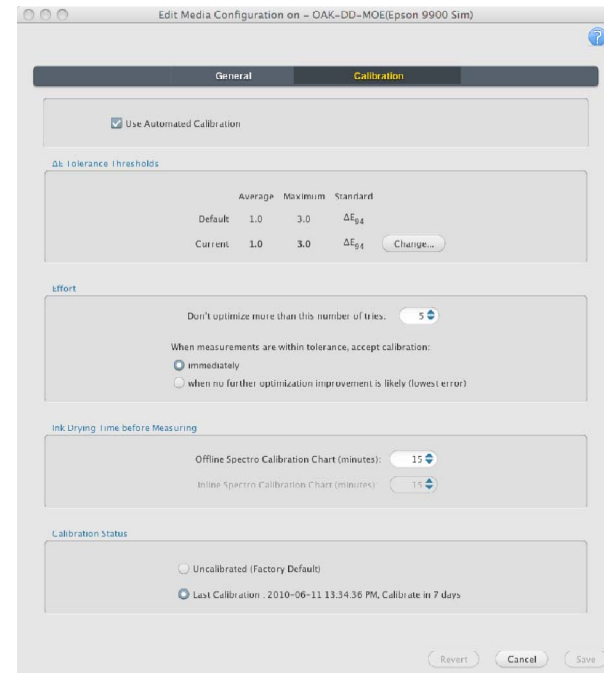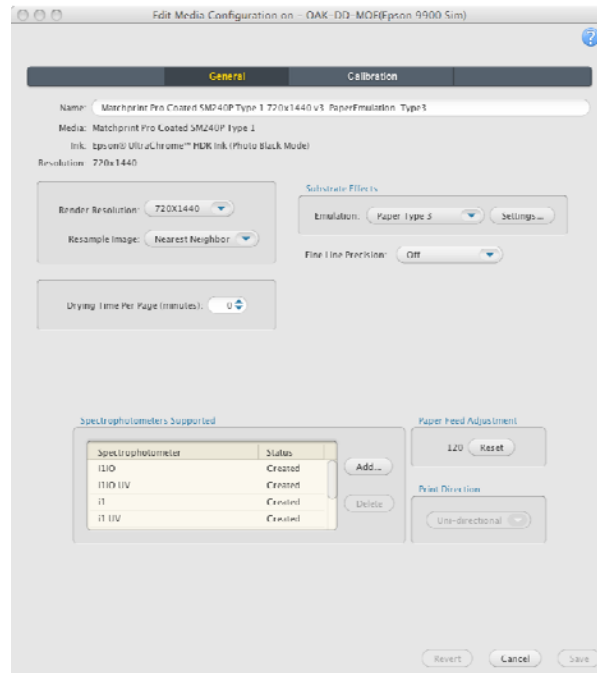
Sheet Media with Epson x900 printer

➢ Tip: When you use an Epson Stylus Pro 7700 or 7900 printer, an offline spectrophotometer, and sheet media with the Precision Color Media Configuration wizard, set the front panel of the printer to roll media while you create the media configuration. The roll media setting stops the printer from ejecting the sheet after each chart prints, and you can print multiple charts on one sheet. After you complete the media configuration, use the front panel of the printer to select sheet media again.

Customize the Media Configuration

➢ Once you have created the media configuration you may with to further customize it to:

    ➢ Enable simulation of substrate effects such as fine-line precision, paper grain, press mottle, or cardboard emulation.

    ➢ Customize calibration settings.

    ➢ See the Online Help for details.