1. New Features

1.1 What's New in GMG ProfileEditor?

This chapter summarizes all major changes that have been applied to the program since the latest release. It is recommended to take the time to read the information provided in this chapter carefully, so that you can take full advantage of all new features. Please follow the links for more information.

Tip More detailed and hands-on information can be found in our printer-specific starter kits and MX4/MX5 tutorials.

What's New in GMG ProfileEditor Included in GMG ColorProof Version 5.7?

New Feature	Where to Find	See Also
GamutViewer improvements • Import of GMG ProofControl measurements. The measurement values of control strips can now be visualized in GamutViewer. To enable the graphical view of the ProofControl verification, the GamutViewer connection needs to be defined in GMG ProofControl (**Options** > **Connections**). • Support of new input formats: GamutViewer now supports MX4, MX5, Gamut files, XML, OpenColor and ICC profiles, CGATS, text files or single Lab values. • Multiselect: A selection of multiple files can be loaded in one go. • Save and load configuration: GamutViewer contains some options in the menu to save the list of gamuts, profiles, ICC or PCI files and further configurations as .gml (gamut list) file. Gamut lists can be loaded manually or at start up. • Overview of all Delta E differences: Arrows in the 3D and 2D graphic view illustrate the Delta E difference between the color spaces. • Show colors: You can display a selective view of only Primaries / Secondaries / CMY Values / CMYK Values. • Transparency: The solid view of a color space can be made transparent so that a second smaller color space becomes more visible. • 2D Projections: GamutViewer now allows several 2D projections: L/a, L/b, L/a. • Dot Gain: On the new DotGain tab, the tone value and dot gain curves can be displayed. • Remote Desktop: GamutViewer can now be used in remote desktop and server PCs. In case the graphic card does not support 3D acceleration, GamutViewer will switch to CPU rendering.	**Options** menu> **GamutViewer**	

What's New in GMG ProfileEditor Included in GMG ColorProof Version 5.6?

New Feature	Where to Find	See Also
Enhanced corrugate simulation To improve the simulation of **corrugated substrates** often used in flexo printing, a new option has been added to make sure the selected corrugate pattern is equally distributed and visible across the whole image.	MX5: **More Parameters** > **Corrugated Paper**	
New 3D GamutViewer Support of new input formats such as ICC, CGATS, IT8, MXN multicolor profiles, db3 spot color data or just LAB values. Multiple gamuts and colors can be viewed in parallel without performance loss.	**Options** menu> **GamutViewer**	
New measuring conditionsM0/M1/M2 Full support of the measuring device **X-Rite i1Pro2** in combination with the **iO** measuring table and the filter settings **M0/M1/M2**.	MX3/MX4/MX5: **Common** tab > **Measurement Settings**	

What's New in GMG ProfileEditor Included in GMG ColorProof Version 5.5.1?

New Feature	Where to Find	See Also
Simplified DotProof New **MX5 profiling** with less iteration steps and **automatic DotGain** calculation in the background. The time to create a DotProof profile is reduced dramatically without any limitations in color accuracy or proof quality. Thanks to the simplified user interface, creating an MX5 proof profile for DotProof has become as easy as creating an MX4 profile.	MX5	*GMG-FlexoProof-5_Tutorial_CreateMX5_en.pdf*

What's New in GMG ProfileEditor Included in GMG ColorProof Version 5.5?

New Feature	Where to Find	See Also
Optimized white printing In packaging, white usually does not cover the entire image, but transparent areas are used to let consumers see the content of the packaging. With our **new white handling**, only the white ink areas are printed with a **paper tint** and transparent areas remain transparent. Also the channel mapping has been simplified, the white ink simulation now being defined by an MX channel to enable a convenient assigning to **mx white** in the **Manual Job Manager** (> **Channels** tab). (In former versions, you needed to create db3 spot colors for white printing.)	MX4/MX5: **Common** tab > **White Processing**	"White Ink Profiling: Interplay of White Ink and Paper Tint" on page 4 *GMG-ColorProof-5_Tutorial_CreateMX4_White Ink_en.pdf*
Sharper Dots New DotProof mode **Sharper Dots** for **Epson Stylus Pro x900** printers: The halftone dots come out sharper and still color accurate. Especially areas using lot of light ink and orange will show sharper dots. **Note:** The **Sharper Dots** option is per default activated for MX5 profiles for Epson Stylus Pro x900 printers. Old profiles can be updated with this option, but need to be reiterated.	MX5: **Common** tab > **Printer Specific Settings**: **Sharper Dots**	

What's New in GMG ProfileEditor Included in GMG ColorProof Version 5.3.1?

New Feature	Where to Find	See Also
Optimized dot gain The dot gain calculation has been greatly improved, achieving a more linear behavior and noticeably better results, especially in the highlights, so that gradations are much less susceptible to breaks. When creating a new MX5 profile, this option is per default activated. **Note:** Due to the change in colors, old profiles need to be reiterated for successfully using this function.	MX5: **Dot Gain** tab > **Optimized Dot Gain Calculation**	
Less breaks in the highlights On the **Dot Gain** tab of MX5 profiles, fulcrums at 3% and 7% have been added to improve the printing behavior in the highlights.	MX5: **Dot Gain** tab	

New Feature	Where to Find	See Also
New test chart Flexo V2 When creating an MX5 profile for flexo proofing, you can now select a test chart which has been designed and tested to ensure your proofs accurately reflect what will be produced on the press. The **Flexo V2** contains additional fulcrums at 5% (instead of 30% fulcrums) and gradients of all primary colors to ensure a homogeneous output and stability in the highlights.	MX5: New Profile dialog > **Measurement Chart**	

What's New in GMG ProfileEditor Included in GMG ColorProof Version 5.3?

New Feature	Where to Find	See Also
Easy creation of ProofControl standards For every profile you are creating, you can conveniently generate a ProofControl print standard **calculated on-the-fly** using the target values of the selected color profile and an existing GMG ProofControl standard as a template (default path: *<installation path>\ProofControl\Standards*). The selected template provides the required color patches and verification tolerances. Click on the **Create** button to generate the matching ProofControl standard for your custom profile.	MX4/MX5: **Options** menu > **Create ProofControl Standard**	"Creating Custom GMG ProofControl Standards" on page 5

What's New in GMG ProfileEditor Included in GMG ColorProof Version 5.2.4?

New Feature	Where to Find	See Also
New measuring device Support of the measuring device **Barbieri Spectro Swing** version **RT** for reflective and transparent media and version **R** for reflective media only.	MX3/MX4/MX5: **Common** tab > **Measurement Settings**	

What's New in GMG ProfileEditor Included in GMG ColorProof Version 5.2.3?
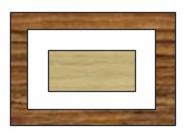
New Feature	Where to Find	See Also
Achieve a linear output for CMYK and Special Inks such as White, Silver, Silver Blended and Clear: Linearizing all ink channels ensures that your printer prints the required tone values in predetermined increments from paper white to its maximum density. Each single ink channel can thus be controlled in a linear fashion to prevent abrupt shifts in density.	MX3: **Common** tab > **Measure** menu > **Measure and Create Linearization**	"Linearizing White Ink" on page 6 "Linearizing CMYK Inks" on page 6
Overinking control GMG ProfileEditor provides you with a **four-dimensional overinking control** that allows for changes in all 16 corners of the color space. By defining accurate ink amount values, you can make sure that the printer only prints up to a certain amount of ink for the respective ink key zones on the print medium.	MX3: **Common** tab > **Advanced Ink Amount Control**	"Checking the Ink Amount" on page 6
Optical Brightener Compensation New option to compensate color shifts caused by OBAs: Many print media come with varying amounts of optical brightening agents (OBAs) in their coating that may cause color shifts. If you are using media with optical brighteners, this option will help you to produce profiles that compensate the negative impact of OBAs while maintaining the whiteness levels und image contrast.	MX4**: Common** tab > **Optical Brightener Compensation**	"Optical Brightener Compensation (OBC)" on page 6

1.2 White Ink Profiling: Interplay of White Ink and Paper Tint

From GMG ColorProof version 5.5 onwards, the white ink simulation of the target printing condition can be defined by an MX channel and does not need to be defined as a db3 spot color anymore.

This way, only the white ink areas are printed with a paper tint and transparent areas remain transparent, so that you can produce areas **without** paper tint, for example, to create a package proof with "windows", showing the content of the packaging.
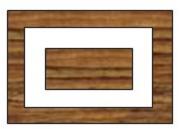

Fig. 1 A packaging with a white frame and a transparent "window" on a wooden surface. Left: previous behavior with the paper tint printed on transparent area. Right: only the white frame is printed with the paper tint, the transparent area is clear.

As the image white channel name is usually different to the MX channel, you need to manually select the "mx white" from the MX profile (**Color Management**: **Channels** tab > **Color** list). You can **automate** the white channel mapping by using the channel mapping function to replace the image channel name with the mx color name "mx white" (**Tools** menu > **Edit Channel Mapping Rule Sets**).

Comparison of previous and current white handling

Previous white handling	*New white handling (from version 5.5 onwards)*
White is defined by a spot color and must be manually selected for the matching profile.	White is defined by the MX channel "mx white".
The white paper tint is taken from the CMYK part of the profile and added to the white spot color.	The white paper tint is taken from the CMYK part of the profile and added to the MX white channel.
The paper tint is printed beneath the entire image, including transparent areas.	Only the white ink areas are printed with a paper tint, transparent areas remain transparent.

Can I update old profiles to apply the new white handling?

Changing profiles to the new white ink handling is simple. You open the profile in GMG ProfileEditor, activate the option **White Processing** and save the profile. When using the profile in GMG ColorProof, the new white ink handling will be used, that is, the channel list will provide a new color named **mx white** (just like mx cyan) which you simply map to the white channel.

1.3 Creating Custom GMG ProofControl Standards

To verify proofs that have been printed with a **custom** proof standard, you need to create a corresponding GMG ProofControl print standard. You can create custom GMG ProofControl standards in three different ways:

- In GMG ProofControl, you can manually create a print standard from the measurement data of a control strip and optionally define custom tolerances (see GMG ProofControl documentation for further details)

- In GMG ColorProof, with a GMG ProofControl Inline license, you can automatically generate custom ProofControl standards from the target values of the color profile (MX4/MX5 or Output Intent ICC) linked within a proof standard (see GMG ColorProof documentation for further details)

- In GMG ProfileEditor, you can likewise generate a ProofControl Standard calculated on-the-fly using the target values of the selected color profile, as described in the following

How to create a custom ProofControl standard in GMG ProfileEditor

1. Open a profile (MX4/MX5) you want to create a GMG ProofControl standard for.
    The profile has to contain **target values**. If you are using a profile with visual optimizations (smoothed target values, color corrections), please update the target values before creating a GMG ProofControl standard (**Measure** menu > **Estimate Target Values from CMYK**).

2. On the **Options** menu, click on **Create ProofControl Standard**.
    The Create ProofControl Standard is displayed.

3. Select an already existing GMG ProofControl standard from the database (default path: *<installation path>\ProofControlAddOnData\Standards*).
    The selected standard contains the required color patches and verification tolerances. Please note that for a **custom** control strip, you first need to create the corresponding standard in GMG ProofControl to be able to use it as a template.

4. Click the **Create** button to generate the ProofControl standard from the target values of the profile.
    The generated GMG ProofControl standard is saved as an XML file to the following default path: *<installation path>\ProofControlAddOnData\Standards*. The name of the standard is automatically derived from the color profile used for the calculation and the template you selected.

Note If you want to use the generated standard with GMG ProofControl, please copy the XML file into the subfolder **Standards** of the main GMG ProofControl program folder. For use with GMG ProofControl Inline, you can link the generated standard on the **ProofControl Inline** tab of each proof standard.

1.4 Linearizing the Printer

The linearization serves to control the printer in a way that the printed colors behave linearly to the input colors (of the original image file). During the printer linearization, a lookup table will be generated describing which color values need to be sent to the printer to achieve a **linear relationship** between input and output colors and to avoid overinking.

A **default** linearization and ink restriction take place in the GMG **printer driver**. As any ink control, however, depends on the respective material of the print media, it is recommended to create a **more specific** linearization. At least the **CMYK** inks should be linearized more precisely.

To linearize a printer, you need to measure a GMG **linearization test chart**. When measuring the linearization test chart, the measured values are analyzed and adjusted to achieve a linear output with an appropriate maximum density.

1.4.1 Linearizing White Ink

A linearization is recommended only for printing **white** ink as a **tint** or **gradation**. To create this linearization, you need to measure a linearization test chart. In a second step, you visually evaluate the printed gradations and enter an **Ink Limit**. This way, the printer calibration file will already limit the white ink application in the color management workflow. In GMG ColorProof, you can select any coating **Intensity** you want (up to 100%), without the risk of overinking.

Note If you print white ink as a full flood **undercoat**, it is **not** required to linearize the ink, but sufficient to enter an ink limit on the **White** tab at **Index** 100%. **Delete** all fulcrums except at 0% and 100% (**Edit** menu > **Delete Fulcrum**).

1.4.2 Linearizing CMYK Inks

To linearize CMYK inks, you need to print a linearization test chart in GMG ColorProof and measure it in GMG ProfileEditor. You visually evaluate the printed gradations and enter the **Ink Limit**. In the MX3, the CMYK linearization values can be found on the **More Parameters** tabbed page (> **Printer Gradation**).

1.4.3 Checking the Ink Amount

When several inks are printed on top of each other, there is a limit to the amount of ink that can be put on the media before overinking occurs. After the linearization and restriction of the **single** inks, it is recommended to check the ink limits of the **combined** solids, for example C+M+Y printed upon each other, or C+M+White.

To do so, GMG ProfileEditor provides you with a four-dimensional overinking control that allows for corrections in all key zones of the color space. After printing the ink amount control chart from the Starter Kit, you visually check the chart for overinking effects and adjust the ink limits.

Note The shape of the linearization curves will not be changed in this step, the curves will only be cut off at the defined ink limits.

1.5 Optical Brightener Compensation (OBC)

Note Activate this option only when using a light box with an outdated lamp type, compliant with ISO 3664:2000.

Note Please select **no** filter (**Filter** = **None**) in the **Measurement Settings** if you want to create a profile with OBC. Selecting a filter will gray out the **Optical Brightener Compensation** option so that it cannot be accidentally used with filtered measurement data.

Many print media contain fluorescent whitening agents to enhance the whiteness effect. Such additives absorb light in the UV range and re-emit light in the blue range. While our eyes perceive the increased amount of reflected blue light as simply brighter or bluish-white, a spectrophotometer tells a different tale, measuring shades of blue which do not match our visual impression. For example, a measured *b value of -5 (which suggests a definite blue appearance) is usually perceived as a bright white. A profile based on such measurement values usually produces prints with an overall bluish cast.

Some measuring devices feature a **UV cut filter** which blocks the UV amount of the light source of the measuring device. Visually, however, profiles calculated with UV cut measurements tend to produce prints that have a rather yellowish cast to them. The discrepancy between measured and perceived color often leaves the user end up with prints that are either too blue or too yellow.

To strike a balance between those two effects, we have integrated an **Optical Brightener Compensation** (**MX4**: **Common** tab). Selecting this option after measuring the target values makes GMG ProfileEditor generate counter-balancing **Lab Target Values**. These counter-balancing values are based on averaged values of a visually correct and media-neutral paper white tint. For control and flexibility, we added a slider for further corrections towards Blue or Yellow. Generally, we recommend to use the default setting with the handle of the slider set to the middle. If your paper, however, is strongly colored, for example, your prints come out too yellow, you can compensate this by moving the slider towards **More Blue**.

Where can I view the changed target values?

Click on the **4d Color Space** tab and activate the option **Show Compensated Values (Optical Brightener Compensation)**. The compensated a* and b* values are displayed in the **Target Values** columns. These compensated values cannot be exported.

Tip Display the compensated values to know the actual Delta E values when iterating the profile. Not displaying the compensated values does not mean they are not used, they are just not shown.

Can I use OBC when creating an MX4 as a building block for an MX5 profile?

No, at the moment the OBC functionality is limited to MX4 profiles. If you create an MX4 profile with OBC and want to use it as a basis for an MX5, you need to **deselect** the option before converting the MX4 into an MX5 profile and recalculate the profile.