ONYX 11 – ONYX Media Profile and ICC Profile Creation Guidelines

How to Work with Media Manager to Create ONYX Media Profiles from Setup to ICC

Scope...........................................................................................................................................2
Pre-requisites .................................................................................................................................2
Creating Media...............................................................................................................................2
Basic Media Settings......................................................................................................................3
Basic Mode Settings......................................................................................................................6
Setting Ink Restrictions..................................................................................................................7
Calibration........................................................................................................................................9
Setting Ink Limits ..........................................................................................................................10
Creating An ICC Profile................................................................................................................11
Test the New media .......................................................................................................................13

ONYX 11 - ONYX Media Profile Compatibility

ONYX 11 has several new options to get better results when profiling media.

The ONYX Media Profiles (formerly called media models) are compatible between Thrive 11 and ProductionHouse/Postershop version 11.

The ONYX Media Profiles created in 11 cannot be used in older versions. Those created in older version can be imported into 11, but with limited capabilities. Rebuilding older version ICC profiles in ONYX 11 will take advantage of some ONYX 11 new features but for best results it is recommended to make new profiles.

The exact printer settings depend on the printer capabilities and driver.
For this bulletin, the Arizona 480 is used as an example.
Scope

The purpose of this document is to describe how to create ONYX Media Profiles with ICC profiles for Océ Arizona printers using the "Print-Read-Next" methodology offered in ONYX 11.

Pre-requisites

- ONYX 11 or higher
- Spectrophotometer (Eye-One recommended)
- Enable the “Printing Gutter” option in RIP-Queue during the profiling process:

![Image of Printing Gutter option](image)

Note: Enabling gutters improves the accuracy of the printed calibration and ICC patches by ensuring that the print nozzles are all firing properly at the start of the first print swath.
Creating a Media

The ONYX Media Profiles creation is handled by the Media Manager.

The Media Manager starts after selecting the Media Manager icon in RIP-Queue.

In Media Manager, select the Media Library and the printer.

The New button show a drop down list:

- **Media Group**: To create a new group. Typically the media group is used to differentiate between ink types.
- **Media Profile**: To create a new ONYX Media Profile.
- **Print Mode**: To create a new print mode for an existing media.

Note: In general, avoid non standard characters, such as é, &, % when naming your media.

Select New, New Profile to start the profiling procedure:

  - **Group**: Either an existing group or a new group can be used.
  - **Name**: The name of the media.
Basic Media Settings

In Basic Media Settings you have a choice of Ink Configurations.

To set up the necessary Ink Configurations for a new ONYX Media Profile use the following steps:

1. Click on the gear symbol to right of Ink Configuration field when profiling for the first time on a new ONYX installation.

2. Ensure that the required ink configurations are enabled as these allow for automated ink restriction calculations.

Notes: Do not use the 8 level (VarDot) ink configurations since ONYX only allows one default VarDot curve and the different print modes require different VarDot curves. Also, Do not use the 8 level MD (multi-dot) ink configurations since they cannot be used for automated ink restrictions.

3. Click the OK button to return to the Basic Profile Settings Window.

4. Select the Ink Configuration:
• **CMYK vs. CMYKSS:**

  o It is recommended that if your printer supports White ink and/or Varnish then use an ink configuration that contains spot channel(s).

  Note: Printers with white and/or varnish can also print CMYK only jobs.

• **Print Mode:**

  o Select a print mode specific Ink Configuration (e.g. CMYK Express/Production/Quality/etc.).

The rest of the procedure will use the CMYKSS Quality Ink Configuration.

5. **Media Options:** This setting defines the default Layout Preview. Leave it to the default value.
6. Configure **Spot Color Setup** when creating a Quality-Layered mode.
   - Color: Use the same highly visible color in all profiles. This way, the operator can easily preview if files and software are working as expected.
   - Opacity: Use a Spot Color transparency level below 100%, typically 50% is a good option. This way, all data is visible in Job Editor. The Job Editor will show mistakes in the design (e.g. incorrect overprint settings of the PDF file).

   These settings are purely for viewing purposes so set it to what you find works best for you. The color and opacity settings have no impact on final print.

   ![Image of Spot Color Setup window]

   Click on the OK buttons to save the settings and close the windows.
Basic Mode Settings

1. The next step is to create a print mode. Press the Add button.

2. Enter a valid print mode name: e.g. Express, Production, Quality or Fine Art.

3. The setup depends on the Ink Configuration:
   - The resolution will automatically be shown for the specified ink configuration.

4. **Dot Pattern**: Leave it to default (Stochastic).
5. **Set the Mode Options:**

   a. Printer print mode: The print mode as available for the selected resolution. The available options are printer type specific.

   b. Directionality and overprint fields: Leave them at defaults.

   c. Define Layers (quality layered mode): Define the layer order and contents here. In order to print swatches with a white layer for reading with device, you select 1 or 2 "white flood fill" layers. For black media: Use 2 layers of white flood fill. For grey media or a light colored media: Use a single layer of white flood fill.

   d. Define Customer Layers (non layered print modes): Leave them at defaults.

   e. Image Preview: Select “Nested Preview” if available, otherwise leave it as automatic. When using the “Nested Preview”, the preview on the printer UI will show the image including the “print reflection” option.

   f. Hold For Printer Operator: This option refers to Roll Media printing only. If selected, a roll media designated job will wait for the start button (on the printer) when a job is sent to the printer.

   g. Layout Preview: This option refers to flatbed printing only. If selected, a pop up window with the layout preview will appear when sending a job to the printer.
6. During the profiling process, keep the “Scale Adjust setting” at the default.
7. The Drop Size Control window will be skipped since it is not required.
8. The next step is the **Ink Restrictions** window.

9. In the **Print Swatch** window:
   a. Initial Gamut Size: Select Maximum.  
      Note: This is only a preset, the gamut can also be changed in the next step.
   b. Device: For the IO 2 Table:
      i. select the Standard Eye-One Swatch
      ii. M0 (Tungsten: Single Scan).
   c. Variable Dot Setup: Keep the default.
   d. Bleed Contro: Keep the defaults.
10. Read in Ink Restrictions Swatch following prompted instructions. Note that this swatch looks very similar to the Calibration strips.

11. The black diamond area is only required when using White or Varnish. For (only!) those channels select the options:
   a. Max S1 : Absolute Ink Volume
   b. Use Linear Process Values : Enable
Calibration

1. Proceed to **Calibration** step. Click on Print Swatch button:
   a. Verify the device and output settings if necessary.
   b. Leave the patches per ink field at default (31).
   c. Use Spectral Density Readings.

2. Read in Calibration swatch following prompted instructions.

3. Optional, for verification only: Click on Advanced and view your readings in order to ensure smooth curve. Excessive peaks and valleys may be an indication of reading errors or print contamination. Minor peaks and valleys can be smoothed by increasing the smoothing value (Options window).
4. Proceed to **Ink Limits** window. For the Océ Arizona printers, typically there is no ink limiting required. Leave the settings at the defaults (the maximum value).

Create an ICC Profile

1. Proceed to the **ICC Profile** creation window and click on Print Swatch.
   a. Set the Swatch format to Standard (944 Patches)
   b. Select Scrambled Swatches

For print modes using white ink and/or varnish (CMYKSS ink configurations), there are options:

a. Spot 1 and Spot 2: Disable these channels. For profiling with white ink and/or varnish, use “flood fill” layer(s) as defined in the mode options at the start of the profiling process.
2. Read in ICC swatch following prompted instructions.

3. Open the black diamond area to view the modify ICC build settings. By default, No Light Inks setting is selected, but the options for this setting are not optimal for the Arizona so they must be edited.

4. Click on the Edit button to open the Build Options window and make the changes as indicated in the screen shot (below):
   a. Start Black: Between 40 and 50, typically 45 is a good choice.
   b. Black Generation: Moderate
   c. GCR type: GCR or GCR Plus (50) gives the smoothest results. UCR will use less ink, but prints will look more grainy in the shadow areas.
   d. Gamut mapping: Vivid Color + ChromaBoost gives the most colorful prints.
      i. Quality, Fine Art and HD mode: Enhanced. Enabling ChromaBoost will give more saturated colors for some spot (Pantone) colors (but with a larger delta E).
      ii. Express mode: Vivid Color + ChromaBoost will increase the saturation for most prints. E.g. red colors in RGB images will become much brighter.
   e. Viewing Light Source: D50
   f. Use Large Input Profile Size: Enable
   g. Balance CMY: Enable. This prevents problems in case the Black Point is not a neutral gray.
   h. Improve Profile Interpolation: Disable. This option might improve the delta E for special spot colors. The disadvantage is that it can have a negative effect on gradients. The ChromaBoost Option (with a setting of 0) in general gives a better result.
5. Click OK to close this window.
6. TIP: Create a new preset for the preferred settings.
7. Click on Build ICC Profile to conclude creation of your ONYX Media Profile.
Test the New Media

Print a suite of various images to verify acceptability of the created ONYX Media Profile with ICC profile. Make sure you include some RGB files as well as those for which a proof is available for comparative evaluation. Pay particular attention to shadow density, grayscale neutrality and “speckling”.

A good test is to print the file `\Onyx\samples\ONYX Quality Evaluation.pdf`.

The `\Onyx\samples\ONYX Quality Evaluation_FAQ.pdf` document explains in detail where to look for.

Some guidelines for rebuilding the ICC profile in case there are issues:

- **Poor shadow density:** If shadow density is poor try increasing start black values;
- **Grayscale neutrality is insufficient:** Select UCR instead of GCR, but keep in mind that this may increase speckling as well as change the appearance of shadow areas.
- **Low saturation, “flat” image:** Use Vivid Color in combination with ChromaBoost.