

# Sublimation Printing Custom Color Profiling

# Windows & Mac OS



### Table of Contents

Introduction	2
Printer Maintenance	3
Verify the Printer Driver Version	3
Check the Ink Levels, Head Alignment & Nozzle	5
Download and Install the Printing Utility	9
Printing Setup	10
Print a Test Target Image	20
Purchase the Appropriate Custom Profile Package	21
Print the Target Image	22
Using Your New Custom ICC Profiles	24
Comparing the Before and After Color Printer Test Page	27
Appendix – Epson Print Driver Menus	29
Windows - Type 1	29
Windows - Type 2	30
Windows - Type 3	31
Mac - Type 4	32

### Introduction

Congratulations! You've taken the next step in perfecting your sublimation printing process! Creating a custom ICC profile is the best way to ensure that your printer is creating a print with a quality image. To complete this process, you'll need to carefully follow the steps outlined in this document to print out our "Target Image" and create your "Target Print". This Target Print is used to create a custom ICC profile which will capture the baseline of your printer's characteristics along with the ink, paper and substrate, giving you a custom profile.

You **MUST** follow the steps in this document to avoid problems with the profiling. If you have any questions, please contact us at <u>Support@thePeridotPig.com</u>. We recommend that you print out this document and/or the checklist to ensure you've completed all of the steps for proper profiling.

The most difficult part of this process will be to print the Target Image(s) without any color management from your software or printer driver. These distort the results of the printer profiling process. You will also want to have your printer in good working state with the proper drivers before printing.

Before we get started:

- **DO NOT** open the Target Images in Photoshop, Elements, Lightroom, Aperture, Preview, Gimp, etc. You run the risk of changing the color profiles.
- Each of the following sections will have a checklist for you to complete. We recommend that you print this document and use it to ensure you complete all the necessary steps.
- A custom profile works for a single combination of printer, ink, sublimation paper and substrate. You might get lucky and find that one profile works with multiple substrates. We recommend at a minimum that you have one for soft (fabric, canvas, plush, neoprene, etc.) and one for hard (ceramic, hardboard, aluminum, glass, etc.) substrates.
- Turn off automatic software updates on your computer. We also advise that you wait a couple months after major OS updates to ensure all your applications will work with the new OS.
- **DO NOT** allow automatic updates to your Epson print drivers! Do not rely on the version that came with your printer. Make sure you've downloaded the latest driver from the Epson site and have it properly installed. If your drivers or RIP (raster image processor software) change, your previous printer profiles, including custom ICC profiles, may no longer work. Changes to the software can affect the different color curves and mapping. If you find that you're having issues after a software update, try reverting to the previous version to see if the problem is solved.

### **Printer Maintenance**

Before you print the Target Image, we'll want to make sure your printer is in an optimal state. Use the checklist below to make sure each item is covered. Instructions are provided for each step.

- Verify the printer driver version
- Check ink supply levels
- □ If needed, upgrade to the latest print driver and fill your ink cartridges
- Check the Print Head Alignment
- Perform a Nozzle Check
- □ If needed, perform a Head Cleaning
- Load the paper you intend to use for the custom profile

#### Verify the Printer Driver Version

If you already notice that you have problems with the basic CMYK colors, the first thing to check is your printer driver. Check your printer's manufacturer website and download the latest version of your printer driver. Don't rely on the version that came with the printer. If you are having color problems, you should first try to uninstall the driver and reinstall the latest version.

**Mac Users:** Apple and Epson don't always play well. You'll need to ensure that you don't have the Apple AirPrint driver installed instead of the Epson OEM driver. The AirPrint driver **CANNOT** be used to print the Target Images and will not work properly with any selected ICC profiles.

We also recommend that you do not use your printer wirelessly. Even though you have installed and selected Epson drivers, you may not get the full functionality and may not fully switch off "Printer Color Management". Invest in a USB cable and connect to your printer for creating your sublimation prints and the Target Image in this process.

#### Windows Users - Instructions to verify your printer driver:

- 1. From the "Start Menu", type in "control panel" and click on the "Control Panel" app
- 2. On the top right under "View By", click the triangle and select "Category"
- 3. Then under "Hardware and Sound", click "View devices and printers"



4. Select your sublimation printer from the list, right click to select "Printer properties"

🕫 Devices and Pri	nters								- 0	×
$\leftarrow \rightarrow \ \cdot \ \uparrow$	Control Panel	> Hardware and S	iound > Devices and Printers >		~	ē	Search Devices and	Printers		P
Add a device	Add a printer Sta	art scan See v	vhat's printing Print server prop	perties Remove device					-	?
> Devices (8)										
> Multimedia D	evices (1)									
∨ Printers (9) –										
	-	*** T 10	Open							
	200		Open in new window							
Adobe PDF	Canon MG2500 series Printer	EPSON ET-2 Series	See what's printing	Microsoft Print to PDF	Microso Documer		OneNote (Desktop)	OneNote for Windows 10		
> Unspecified (	1)		Set as default printer							
			Printing preferences							
			Printer properties	-						
			Start scan Scan profiles							
			Scan properties							
			Create shortcut	-						
			Remove device	-						
			Troubleshoot							
		· · · · · · · · · · · · · · · · · · ·	Properties	-						
EP	SON ET-2720 Series		еко Epson Corp Category: н	Function Printer						
			T-2720 Series Status: ( pson Device Metadat	) document(s) in queue						

5. On the pop-up menu, select the "Version Information" tab

			Properties				>
General	Sharing	Ports	Advanced	Color Management	Security	Optional Settings	Version Information
			Epson P	rinting System (A)			
			Versi	on 2.60.01.00			
		Copy		to Epson Corporation ghts Reserved.	2018.		
			All Ng	ins Reserved.			
						OK Cano	el Apply

6. Note the version shown and verify that it is the latest driver from the printer manufacturer's website.

7. If needed, follow the manufacturer's instructions to upgrade your driver to the latest version.

#### Mac Users - Instructions to verify your printer driver:

- 1. Go to "System Preferences" and open "Printers & Scanners"
- 2. Select your sublimation printer from the list of printers shown
- 3. Click the "Options & Supplies..." button
- 4. Under the "General" tab, you should see your Device Name and the Driver Version
- 5. If you see "AirPrint" on this page, you'll need to switch to the latest OEM driver for your model. Visit the <u>Trouble Shooting guide</u> to resolve this issue. We cannot make a working custom profile if you are using AirPrint.

#### Mac Users - Instructions to install the latest printer drivers:

- 1. Download the latest driver software from the Epson support site. DO NOT download from Apple. Save a backup copy of your download.
- 2. Return to the "System Preferences" -> "Printers & Scanners..." menu and delete all the existing versions of your sublimation printers. Select each and use the "-" (Minus sign) to remove them.
- 3. Remove all Epson printing applications and utilities from the "Applications" folder on your Mac.
- 4. Install the new Epson driver package that you downloaded
- 5. Connect your printer using the USB cable and turn it on
- 6. Return to the "System Preferences" -> "Printers & Scanners..." menu and add a new printer using the "+" (Plus sign). You may have to wait a few minutes for the software to detect the printer and for all the drivers to appear. Some of these may be the Apple or AirPrint drivers. Wait for the correct driver to appear and select it.

### Check the Ink Levels, Head Alignment & Nozzle

#### Windows Users - Instructions to verify your ink levels:

- 1. From the "Start Menu", type in "control panel" and click on the "Control Panel" app
- 2. On the top right under "View By", click the triangle and select "Category"
- 3. Then under "Hardware and Sound", click "View devices and printers"



4. Select your sublimation printer from the list, right click to select "Printing preferences"

n Devices and Pr	inters								-		×
← → * ↑		Hardware and Sou	ind > Devices and Printe		v ē	Search Devices and I	Printers			٩	
Add a device	Add a printer Star	rt scan See wha	at's printing Print ser	ver properties	Remove device					-	?
Devices (8)											
> Multimedia I	Devices (1)										
Printers (9)											
				$\sim$							
		AN FILL	ALC: NOT	20							
Adobe PDF	Canon MG2500 series Printer	EPSON ET-2720 Series	EPSONE1C0ED	Fax	Microsoft Print to PDF	Microsoft XPS Document Writer	OneNote (Desktop)	OneNote for Windows 10			
Unspecified	(1)		Open Open in new window	v							
			See what's printing								
			Set as default printer								
			Printing preferences		1						
			Printer properties	ß							
			Start scan								
			Scan profiles								
			Scan properties								
			Create shortcut								
E	SON ET-2720 Series	Manufacturer: Se	Remove device		nction Printer						
100 T 10 T		Model: El	Troubleshoot		ent(s) in queue						
		Description: Ep	Properties								

5. When the menu opens, click on "Ink Levels"

P EPSON ET-2	720 Series Printing Prefere	nces		
Main More Op	otions Maintenance			
Printing Prese	ets			
Add/R	emove Presets	Document Size	Letter (8.5 x 11 in)	~
	- Fast - Standard Quality - High Quality	Orientation	Portrait     OLandscape	
Document	- 2-Up - Fast Grayscale	Paper Type	Plain Paper / Bright White Paper	~
Document		Quality	Standard	~
-	Template - Landscape Template - Portrait	Color	Color     OBlack/Graysca	ale
V neatpress	remplate - Portrait	2-Sided Printing	Off Settings	~
		Multi-Page	Off   Page Ord	ler
	A.	Copies 1	Collate	
			Reverse O	rder
	36- 36-	Quiet Mode	Off	~
Show Setting Reset Defau		Print Preview Job Arranger L	ite	
		ОК	Cancel Apply	Help

6. Verify that all ink levels are high enough to print numerous color charts © 2021 The Peridot Pig, LLC



#### Mac Users - Instructions to verify your ink levels:

- 1. Go to "System Preferences" and open "Printers & Scanners"
- 2. Select your sublimation printer from the list of printers shown
- 3. Click the "Options & Supplies..." button
- 4. Select the "Supply Levels" tab
- 5. Verify that you have sufficient ink levels to print out the Target Images. If you're getting low, fill up your inks before starting.

#### Instructions to perform a Print Head Alignment:

We've included the instructions for our Epson WF-7720 and it should be similar to other models. Consult your printer manual if you have a different printer model.

- 1. Load a few sheets of regular copy paper and make sure there are no errors or notices on the main display
- 2. Go to the "Maintenance" menu and select "Print Head Alignment"
- 3. Select "Vertical Alignment" to start
- 4. Follow the on-screen instructions to print the alignment sheet. **DO NOT** cancel printing while you are printing the head alignment patterns.
- 5. Complete the vertical validation and then repeat the steps and perform the same check for "Horizontal Alignment".

#### Instructions to perform a Print Head Nozzle Check:

- 1. Load a few sheets of regular copy paper and make sure there are no errors or notices on the main display
- 2. From the "Maintenance" menu, select "Print Head Nozzle Check"
- 3. Select "Start" and allow the pattern to print.
- 4. Check the pattern:

#### Print head is clean

#### Print head needs cleaning

- 5. If there are no gaps and the image looks like the one on the top, select "O"
- 6. If there are ANY gaps or the pattern is faint, select "X" to continue
- 7. Follow the instructions to clean the print head. **DO NOT** attempt to print the Target Image if there are print nozzle issues. Those issues must be resolved before profiling.

#### Instructions to perform a Print Head Cleaning (only if needed):

- 1. Load a few sheets of regular copy paper and make sure there are no errors or notices on the main display
- 2. From the "Maintenance" menu, select "Print Head Cleaning" or continue from the failed Print Head Nozzle Check
- 3. Select the appropriate option based on how your Nozzle Check looked. In the example above, you would select "All Colors"
- 4. Select "Start". **DO NOT** cancel printing, open the front cover or turn off the machine while you are cleaning. You might not be able to print.
- 5. When the cycle completes, you'll be prompted to perform another Nozzle Check. Select "Yes".
- 6. Select "Start" to print the Nozzle Check pattern. If it looks good, you're all done. If there are still gaps, check your manual on how many times you can execute the cleaning cycle before having to let it rest. For some models, you can only clean the head 3 or 4 times before needing to let the printer rest for 6 12 hours.

Finished with the checklist above?? Great! You're now ready to set up your system to print the Target Image.

# Download and Install the Printing Utility

The hardest part of creating a good baseline Target Image, is getting the Color Management software disabled. This is especially hard on a Mac computer. You **CANNOT** use any software like Photoshop, Gimp or even the Mac Image Viewer to do this reliably.

The easiest solution is to use the free Adobe Color Printer Utility (APCU) from <u>Adobe's</u> <u>website</u> or our <u>download page</u>. It does not require that you use Photoshop or any other Adobe products.

**Mac Users -** Note the Adobe site says that ACPU is no longer supported on MacOS Catalina 10.15 or later but it DOES still work.

You can also use one of the following applications, which are the ONLY other applications that will work:

- <u>QTR Print-tool</u> (Mac only)
- <u>Qimage One</u>

#### Windows Users - Instructions to download and install ACPU:

- 1. To install ACPU, download the <u>ACPU.zip</u> file
- 2. Double click on the .zip file
- 3. Choose to extract all the files.
- 4. After the extraction is complete, drag the Adobe Color Printer Utility to the "Programs" folder or your preferred folder.

#### Mac Users - Instructions to download and install ACPU:

- 1. To install ACPU, download the appropriate ACPU installation file
- 2. Double click on the file to unzip it.
- 3. Double click the resulting .dmg file.
- 4. If you get a security warning since the file was not downloaded from the App Store, go to your "System Preferences" and select "Security & Privacy". Under the "General" tab, you should be able to allow the ACPU file to be opened.
- 5. Drag the "Adobe Color Printer Utility.app" file to your "Applications" folder

# **Printing Setup**

Before you purchase an ICC profiling package, please download the Target Images, and ensure that you're able to print them correctly. The Target Images are available for free on our <u>downloads page</u>. Note that the Target Images will vary based on the substrate you are profiling. "Soft" substrates like t-shirt material or fabric will use the Basic Target Images. Gloss and hard substrates like aluminum, ceramic, textured canvas will need the Advanced Target Images. Please contact us if you have questions on which images to use.

We've also included our recommended settings for sublimation printing. Ensure these options are reviewed. Even without a new ICC profile, they will improve your sublimation print quality. You may have to experiment to find the right combination of settings for each substrate. Save and label each of these print setting combinations as a Preset so that you can match it to your custom ICC profile.

#### **Sublimation Printing Recommendations:**

- Use the correct weight of paper. You should have a profile for different paper weights, manufacturer and substrate combinations:
  - o 125g paper for heavily saturated prints
  - 120g paper for medium/slightly heavy prints
  - 105g for fine print and light/medium saturation.
- Don't use the "plain paper" setting in your Print Settings. It can introduce additional color management and should only be used when you're printing on regular copy paper. For sublimation, use "High quality plain paper", "Epson Matte" or "Premium presentation matte".
- Under "Print Settings" -> "Print Quality", select "Fine" or "Quality". Using "Quality" might give you too much ink saturation depending on your paper type and how well it absorbs the ink.
- Turn off high-speed printing

#### Windows Users - Instructions for setting up a test print:

- 1. <u>Download</u> the Target Images and unzip the file
- 2. <u>Download</u> the Color Printer Test Page (color-printer-test-page.jpg) file and print it using your normal software and settings. **Remember to mirror the image**
- 3. Press the test page onto a piece of white substrate. This will be your "before" image.
- 4. Download the Adobe Color Printer Utility (ACPU) and unzip the file
- 5. Read the readme file and when ready, double click the .exe file
- 6. Select "File" -> "Open..." and choose one of the Target Image .tif files

Please select a TIFF file t	o print							:
← → • ↑ <mark> </mark>	> This P	C > Downloads >	TPP-DyeSub_918_P	atches_8.5x11_1_7_v1	.1 >	ٽ ~		-DyeSub_918_Pat
Organize 🔻 New	folder						E	- 🔳 👔
<ul> <li>Quick access</li> <li>Desktop</li> <li>Downloads</li> <li>SSD-A (A:)</li> <li>muev</li> <li>Movies</li> <li>d</li> <li>Heat Press</li> <li>MugRecording</li> <li>OneDrive - Perso</li> <li>This PC</li> <li>Network</li> </ul>		_MACOSX	TPP-DyeSub 918 Patches_1_7.tif	TPP-DyeSub 918 Patches,2,7.iff	TPP-DyeSub 918 Patches_3_7.tif	TPP-DyeSub 918 Patches_4_7.tif	TPP-DyeSub 918 Patches_5_7.tif	TPP-DyeSub 911 Patches_6_7.tif
	File name	e: TPP-DyeSub 918	Patches_1_7.tif			~	TIFF files (*.tif)	~
							Open	Cancel

### 7. Click "Open"



8. The image preview will appear. Select "Print Setup..."

9. Select the correct orientation (should be "Landscape"). Make sure to select "Letter 8.5" x 11" 22x28cm". You may need to adjust the margins if the page does not fit.

Page Setup	×
Banar	The model must be an interval of the model o
Paper	
Size: L	etter 8.5"x11" 22x28cm ~
Source: F	Rear Tray 🗸 🗸
Orientation	Margins (inches)
Portrait	Left: 1 Right: 1
◯ Landscape	Top: 1 Bottom: 1
	OK Cancel

- 10. Select OK to return to the image preview menu
- 11. Then select the "Print..." button and select "Properties..."

int	>
Printer Name: EPSON ET-2720 Series	✓ Properties
Status: Ready Type: EPSON ET-2720 Series Where: USB002	
Comment:	Print to file
Print range	Copies
All	Number of copies: 1
Pages from: to:  Selection	123 123 Collate
	OK Cancel

© 2021 The Peridot Pig, LLC

- 12. Click the "More Options" tab
- 13. Under "Color Correction", select the "Custom" radio button to enable the Advanced options



14. Select "Advanced..."

### 15. On the "Color Correction" menu, select "No Color Adjustment"

	Color Correction	×
Ma	Color Management	
P	O Fix Photo	Letter (8.5 x 11 in) V
		Same as Document Size 🛛 🗸
П	No Color Adjustment	Document
		O Zoom to 👘 %
		Custom Advanced      Image Options
_		itures
	OK Cancel Help	OK Cancel Help

16. Select "OK"

17. Back on the "More Options" tab, turn off "High Speed" and turn on "Mirror Image"

EPSON ET-2720 Series Properties			×
Main More Options Maintenance			
Printing Presets	Document Size	Letter (8.5 x 11 in)	~
Add/Remove Presets	Output Paper	Same as Document S	ize ~
<ul> <li>Document - Fast</li> <li>Document - Standard Quality</li> <li>Document - High Quality</li> <li>Document - 2-Up</li> </ul>	Reduce/Enlarge Fit to Page Center	Document	<b>▲</b> %
<ul> <li>Document - Fast Grayscale</li> <li>Document - Grayscale</li> <li>Heatpress Template - Landscape</li> <li>Heatpress Template - Portrait</li> </ul>	Color Correction	() Custom	Advanced Image Options
	Watermark Fea	atures	
	Additional Settings		
Show Settings Reset Defaults		Ş	
	[	OK Ca	ancel Help

18. Save this configuration as a preset, select "Add/Remove Presets..."

19. Give the preset a name (we used "CustomICCProfile") and click "Save"

ain More Options Maintenance		Custom Settings				
rinting Presets	Do	Printing Presets			Name	
Add/Remove Presets	OL	🗐 Document - Fast			CustomICCProfile	
Document - Fast	1 1	Document - Standard Question Document - High Quality			Icon	
Document - Standard Quality	14	Document - High Quality			<b>.</b>	00000
Document - High Quality		Document - Fast Grayso	ale	V	<	>
Document - 2-Up Document - Fast Gravscale		Document - Grayscale			Comments (optional)	
Document - Fast Grayscale	Cc	<ul> <li>Heatpress Template - Lands</li> <li>Heatpress Template - Portra</li> </ul>				~
Heatpress Template - Landscape		<ul> <li>Heatpress Template - Portra</li> </ul>	IC			
Heatpress Template - Portrait						~
	-				Date and Time	
					2	
		Show Hide	Delete Reset			Save
	Ac					
		Items	Current Settings		Registered Settings	^
		Paper Source	Rear Paper Feed		-	
— का का		Document Size	Letter (8.5 x 11 in)		-	
		Borderless	Off		-	
chan Cattions		Orientation Paper Type	Portrait Plain Paper / Bright White Pa	Der		
Show Settings		Ouality	Standard	ipei	-	
Reset Defaults		Quality Detail				~

20.Close the preset menu

21. You're now ready to create a test print. Select "OK"

EPSON ET-2720 Series Properties			×
Main More Options Maintenance			
Printing Presets	Document Size	Letter (8.5 x 11 in)	~
Add/Remove Presets	Output Paper	Same as Document S	ize 🗸 🗸
<ul> <li>Document - Fast</li> <li>Document - Standard Quality</li> <li>Document - High Quality</li> <li>Document - 2-Up</li> <li>Document - Fast Grayscale</li> <li>Document - Grayscale</li> <li>Heatpress Template - Landscape</li> <li>Heatpress Template - Portrait</li> </ul>	Color Correction	e Document O Zoom to	Advanced Image Options
🐓 Custom ICC Profiler	Watermark Fe	aturac	
Show Settings Reset Defaults	Additional Settings		
	[	ок 🔓 Са	ancel Help

#### Mac Users - Instructions for setting up a test print:

- 1. <u>Download</u> the Target Images and unzip the file
- 2. <u>Download</u> the Color Printer Test Page (color-printer-test-page.jpg) file and print it using your normal software and settings. **Remember to mirror the image**
- 3. Press the test page onto a piece of white substrate. This will be your "before" image.
- 4. Open the Adobe Color Printer Utility (ACPU)
- 5. Select "File" -> "Open..." and the first Target Image .tif file

6. Select "File" -> "Page Setup..." and select the correct orientation (Landscape or Portrait). It should say "Scale" is at 100%. Click "OK"

			olor Printing	Utility	
Nan	vw.ThePeridotPig.com we: er Number:		Chart 918 Patches st Chart Page: 1 of 7; Size: 26.5	Test C	olors - Verify First
	Format For:	EPSON WF-	7720 Series		<b>()</b>
	5				
	Paper Size:		50 by 11.00 inc		
	Orientation:	🔿 🖈 Portrai	t 🔾 🕩 Land	scape	
	Scale:	100%			
	?			Cancel	ОК
and the					

7. Select "File" -> "Print..." but don't press "Print" yet!

Ś	Adobe Color Printer Utility File Help
	Adobe Color Printing Utility
-	
	Printer: EPSON WF-7720 Series
	Presets: Default Settings
	Copies: 1
	Pages: 🔾 All
	From: 1 to: 1
	Layout
	Pages per Sheet: 1
	Layout Direction: Z S N N
	Border: None
	Two-Sided: Off
	<ul> <li>Reverse page orientation</li> <li>Flip horizontally</li> </ul>
	? PDF V Hide Details Cancel Print

- 8. Open the "Advance Setting" by clicking the "Show Details" button.
- 9. Confirm that you have the correct Printer model selected.

- 10. Select each of the center dropdown menus and check the following settings. The names will vary by model, but you should see menus similar to "Layout", "Print Settings", "Quality & Media", "Color Matching", "Paper Handling", etc.
  - a. **SCALE:** make sure that the image is printed at 100%. **DO NOT** select "Expand to Fit" nor "Scale to fit paper size".
  - b. **Paper or Media Type:** Select the items that you'll be using with this profile and matches your chosen paper. You must select the appropriate "Media Type" and "Print Quality"
  - c. **Color Matching:** All the options should be grayed out. If your printer model has "Advanced Color Settings", the "Color Settings" should be grayed out and say "Off (No Color Management)".

Printer: Presets:			©
Copies:	1		
Pages:	All From: 1 to:	1	
	Color Matching		0
	ColorSync	C EPSON Color Cont	rols
? PDF 💟	Hide Details		Cancel Print

d. Print Settings: Select "Mirror Image"

Printer: EPSON	WF-7720 Series	
Presets: Default	Settings	6
Copies: 1	•	
Pages: 🗿 All		
From:	1 to: 1	
Print Se	ettings	0
Paper Source:	Auto Select	٢
Media Type:	High quality plain paper	0
Print Quality:	Fine	0
	Borderless	
	Expansion: Max	٥
	Grayscale	
	Mirror Image	

11. Save these settings as a preset and/or write them down. You'll want to use the same configuration with your new custom ICC profile. These same settings should be used with each of the Target Images.

 $\ensuremath{\mathbb{C}}$  2021 The Peridot Pig, LLC

# Print a Test Target Image

You're now ready to print your first Target Image file. We recommend doing this step before making the purchase. If you have problems with the verification, please <u>contact us</u> before you buy a profiling package.

- 1. Print one of the Target Image .tiff files. Make sure the image is mirrored!
- 2. Inspect the Pre-Profile Colors using the criteria below:
  - a. At the top of each Target Image file, you'll find the following graphic with color swatches. Inspect each Target Print and Target Image to make sure they are clear and crisp.



- b. The colors should be solid and clean with no bars or "pizza wheel" marks
- c. Patch 1 Blue should be a solid dark blue
- d. Patch 2 Cyan should be solid cyan with no magenta or yellow dots
- e. Patch 3 Green should be somewhat dark and not a light green
- f. Patch 4 Yellow should be solid yellow with no cyan or magenta dots
- g. Patch 5 Orange should have no cyan dots
- h. Patch 6 Red should have no cyan dots
- i. Patch 7 Magenta should be solid magenta with no cyan or yellow dots
- j. Patch 8 Dark Gray will be slightly lighter than the black
- k. Patch 9 Black should be solid black



- 3. If the colors look correct, then move onto the next section
- 4. If the colors do not look correct:
  - a. **Windows Users** The problem is usually due to Color Management (ICM) being left ON somewhere in the printer driver settings. ACPU (or any other application) cannot turn off Color Management in the print driver, so you must always verify the driver settings to confirm it is **OFF**
  - b. **Mac Users –** The problem is normally because the AirPrint driver is still being used. If you have an older printer, it might be that color management is still turned on in the print driver. It could also be that the Target Images were opened in Photoshop, Gimp, etc and were converted to a color profile.

## Purchase the Appropriate Custom Profile Package

We recommend that you start with a basic sublimation ICC profile package. The basic package will require you to print your Target Images onto pieces of white, 100% polyester fabric. You can provide your own fabric, but it must be 100% polyester without any coating or treatment. You will need to print the pages on 8.5" by 11" white blanks. If you'd like to purchase the substrate material, you can include that with your purchase, and we'll send you the material in the appropriate size.

**NOTE:** Make sure you test print a Target Image *before* making your purchase! **NOTE:** Make sure you include your email address in your order so that we can send you final instructions and your Custom ICC Profile!

Visit <u>our website</u> to review the different <u>Custom ICC Profile Packages</u> we offer. Not finding the combination you need? Contact us at <u>support@ThePeridotPig.com</u>.

# Print the Target Image

After you have purchased your Custom ICC Profile package, you'll receive an email with instructions regarding the number of images that will be required to create your ICC profile. At minimum, seven Target Images are required to create the Target Prints for sublimation print profiling.

You'll want to use the same printer settings that were saved out of the "Setup and Test Print the Target Image" exercise. You'll also need a heat press and substrate large enough to press the Target Print. You should use the exact paper, ink, and substrate that you'll be using in your regular sublimation production process. If you have different sized material or a specialty substrate, please contact us <u>support@ThePeridotPig.com</u>.

#### Instructions to print the Target Image:

- 1. Download the .zip file specified in your Custom ICC Profile purchase email
- 2. Unzip the file and save the image .tif files to a folder that you can locate
- 3. Open the Adobe Color Printing Utility (ACPU)
- 4. Click "File" -> "Open..." and select the first downloaded file
- 5. Verify that the page setup and print setting are still as specified in "Setup and Test Print the Target Image" section
- 6. Print the first image
- 7. Inspect the pre-profile colors at the top of the page. If they look good, continue with the remaining files in the Target Image package. If the colors do not look correct, revisit the "Setup and Test Print the Target Image" section and confirm all your settings are correct. If all your settings are correct and you are still having issues, read through our <u>Trouble Shooting guide</u>.
- 8. Inspect the print to ensure all the color patches are on the page and the image has not been resized
- 9. Allow all the Target Images to dry overnight
- 10. After the Target Images are completely dry, press each of the Target Images to the specified substrate using your ink and paper manufacturers recommendations. If you don't have that information, these are the suggested time, temperature, and pressure settings:

Substrate	Time	Temperature	Pressure
100% Poly Fabric	400° F (204° C)	50 – 70 sec	Light
Poly Duck Canvas	400° F (204° C)	50 – 70 sec	Light
Hardboard	400° F (204° C)	90 sec	Medium
Aluminum	400° F (204° C)	55 – 70 sec	Light
Scuba Foam	400° F (204° C)	50 - 90 sec	Medium
Tile	400° F (204° C)	6 min	Medium

- 11. Inspect each print to ensure there are no flaws
- 12. Add your name and order number to the Target Prints using a permanent marker making sure not to write on any of the color images.

- 13. Complete the order form that was included in the download package. Make sure to include your name, email address and order number on the form.
- 14. Package your Target Prints along with your order form and send to The Peridot Pig at the following address:

The Peridot Pig Attn: ICC Profiling Department 11395 Normandy Lane Chagrin Falls, OH USA 44023

- 15. Make sure you do not write on the Target Print images or put any stickers or labels on the back.
- 16. Label the envelope/package with "DO NOT BEND" on the front.
- 17. If you are including hardboard, aluminum, or tile panels, make sure they are carefully wrapped and secured from damage. Place plain paper between the prints so that they do not get scratched or damaged during shipment.

# **Using Your New Custom ICC Profiles**

After we receive your Target Prints, we'll scan the images and create a custom ICC Profile(s) per your order. The profile will be emailed to you from <u>Support@ThePeridotPig.com</u>. Your file will be named using the following format:

<Initials>\_<Ink>\_<Paper>\_<Substrate>\_<Printer>.icc

#### Windows Users - Instructions for Installing Your New Profile(s):

- 1. Download the profile from your email
- 2. Once downloaded, move the file to the system folder on your computer where all your profiles are stored. You should be able to right-click the .icc profile and then select "Install Profile".

Otherwise, the location will depend on what version of Windows that is running:

- a. Windows 98/ME C:\Windows\System\Color\
- b. Windows XP/Vista/7/8/10/11
   C:\Windows\System32\Spool\Drivers\Color\

#### Mac Users - Instructions for Installing Your New Profile(s):

- 1. Download the profile from your email
- Copy the file to the profile directory: HD/Library/ColorSync/Profiles/ To find your Macintosh HD navigate to "Go" on the menu bar while the desktop is selected in a Finder window. Click on "Computer". From there click "Macintosh HD" (or similar if you renamed your hard drive)
- 3. Make sure to keep a backup copy of your file

#### Photoshop Users - Printing with Typical Epson Printers:

 You must use software that allows you to override the printer color management software by selecting your new custom ICC profile. Typical programs like Photoshop, Illustrator, Gimp, etc. allow you to select the color profile. We're providing the instructions for printing from Adobe Photoshop and your settings should be similar. 2. We recommend that your working color space is ProPhoto RGB to give you the maximum color depth in your prints. In Photoshop, set your color preferences by going to "Edit" -> "Color Settings..."

Color Settings				×
Settings: Custon Working Spaces RGB: CMYK: Gray: Spot:	ProPhoto RGB U.S. Web Coated (SWOP) v2 Dot Gain 20%		Conversion Options Engine: Adobe (ACE) ~ Intent: Relative Colorimetric ~ Vuse Black Point Compensation Use Dither (8-bit/channel images)	OK Cancel Load Save
Color Management RGB: CMYK: Gray: Profile Mismatches: Missing Profiles:	Policies Preserve Embedded Profiles ~ Preserve Embedded Profiles ~ Preserve Embedded Profiles ~ Preserve Embedded Profiles ~ ② Ask When Opening ③ Ask When Opening		Compensate for Scene-referred Profiles Advanced Controls Desaturate Monitor Colors By: 20 % Blend RGB Colors Using Gamma: 1.00 Blend Text Colors Using Gamma: 1.45 For more information on color settings, search for "setting up color management" in Help. This term is searchable from any Creative Cloud application.	Preview
Description Conversion Options: S	specifies details on how you want color space co	nversio	sions performed.	

- 3. When you're ready to print, select "File" -> "Print..." to bring up the print dialog box.
- 4. Check that the "Printer:" setting is set the correct printer
- 5. We'll cover "Print Settings..." in the next step

Photoshop Print	Settings
Image: Degree in x 8.486 in         Image: Degree in x 8.486 in <th>Printer Setup         Printer:       EPSON WF-7720 Series         Copies:       Print Settings         Layout:       Image: Print Settings         Layout:       Image: Print Settings         Color Management       Print Settings Galog box.         Document Profile:       ProPhoto RGB         Color Handling:       Photoshop Manages Colors         Printer Profile:       TPP-InkOWI-aSub125g-WF-7720-Chart 918         Send 16-bit Data       Normal Printing         Rendering Intent:       Perceptual         Black Point Compensation       Poscription</th>	Printer Setup         Printer:       EPSON WF-7720 Series         Copies:       Print Settings         Layout:       Image: Print Settings         Layout:       Image: Print Settings         Color Management       Print Settings Galog box.         Document Profile:       ProPhoto RGB         Color Handling:       Photoshop Manages Colors         Printer Profile:       TPP-InkOWI-aSub125g-WF-7720-Chart 918         Send 16-bit Data       Normal Printing         Rendering Intent:       Perceptual         Black Point Compensation       Poscription
Match Print Colors     Gamut Warning     Show Paper White	Cancel Done Print

- 6. Under Color Management, change the "Color Handling:" selection to "Photoshop Manages Colors"
- 7. Under "Printer Profile:", select the new ICC profile that you installed in the prior section.
- 8. Under "Rendering Intent:", select the one that best suits your design. We normally use "Perceptual" or "Relative Colorimetric". Use the one that gives you the best results.

- 9. Depending on your ink brand, you may need to deselect "Black Point Compensation". If your ink doesn't have this information, keep it checked.
- 10. Now select the "Print Settings..." button under the "Printer Setup". The "Print Settings" vary by print driver and model. See the appendix on typical Epson printer menus.
- 11. Check that the correct "Printer:" is set
- 12. Select the preset that you made before, if applicable
- 13. Once you've verified the settings, select "Save" and you're ready to print the "after" test file.
- 14. Under "Rendering Intent:", select the one that best suits your design. We normally use "Perceptual"
- 15. Depending on your ink brand, you may need to deselect "Black Point Compensation". If your ink doesn't have this information, keep it checked.
- 16. Once you've verified the settings, select "Save" and you're ready to print the "after" test file.

# **Comparing the Before and After Color Printer Test Page**

We suggest that you print a "before" image and an "after" image to see how your new ICC profile performs. If you don't see a noticeable difference, review our <u>Trouble Shooting</u> <u>guide</u> or <u>contact us</u>.

- 1. Print the color-printer-test-page.jpg file using your new profile.
- 2. Press it onto the same substrate like you did for the "before" image.
- 3. Align the images side-by-side and use the following criteria to assess your new profile:





- a. A smooth transition from black to gray to white. The "before" image has slight greens and purple tones.
- b. The gray squares allow you to see any tonal shifts away from pure gray

- c. The gamut gradients show up any banding as well as any issues with color accuracy – you should check that the red, green, and blue are pure. Most printers may show some banding, so this isn't a problem unless severe, or there is an inversion, where brightness shows variable levels as the color gets more saturated. The "before" image had banding in the blue ramp.
- d. The RGB squares should show good separation between colors with no bleeding into adjacent squares.
- e. Use these four images to check skin tones. Watch out for the image being too yellow, green, or blue. The "before" image is very blue toned making the people look "washed out" and gray.
- f. The rock arch has a slightly cyan sky, deep shadows, and the bright orange rocks.
- g. The yellow trees show a lot of fine detail and have bursts of bright yellow and orange color.
- h. The electronics image is useful for shadow detail.
- i. The strawberries help to see if red is printing properly. It's always easier to look at a real object to see if it looks accurate. The light reflection really pops in the "after" image.
- j. The sunset image has a high saturation and will let you know if you have banding issues.
- k. The lava rock has a lot of shadow detail and a bronze highlight. It shouldn't look too green or yellow.
- I. Finally, the center black and white image displays a full range of gradient tones from black to white. It shows you how well your grays are printing a real image.

# **Appendix – Epson Print Driver Menus**

Applying the print settings will vary depending on the printer model. Below are some common Epson Driver layouts:

### Windows - Type 1

EPSONF23163 (WF-7710 Series) Printin	g Preferences		×	Color Correction	
Main More Options Maintenance Printing Presets 6 Add/Remove Presets	Document Size	Letter (8.5 x 11 in) Same as Document Si	~ 7P ~	Color Management Color Controls Fix Photo ICM	
	Output Paper Color Correction Automatic		4 Advanced	No Color Adjustment	] 5
Document - 11 x 17 in	Watermark Fe Confidential Jo Additional Setting Rotate 180 High Speed	s	Settings		
	ОК	Cancel	pply Help	ОК	Cancel Help

1. On the "Main" tab, select the appropriate media type and quality setting for your print.

(For sublimation, avoid using *Plain Paper* and select *High Quality Plain Paper* or *Matte* paper instead. Set the "Quality" to one of the two highest settings).

- 2. Select the tab labeled "More Options"
- 3. Set "Color Correction" to "Custom" to enable the "Advanced..." button
- 4. Click on "Advanced..." to open the "Color Correction" menu
- 5. Select "No Color Adjustment" and press "OK"
- 6. To avoid having to do all this each time you print, we recommend saving a Preset. Press

the "Add/Remove Presets..." button, give the preset a name, choose an icon and then click Save.

- 7. You will also usually want to print your images mirrored, so you should check the "Mirror Image" box on the next tab.
- 8. Turn off "High Speed" if you're having issues with ink not drying quickly enough and causing "pizza wheel marks".

#### Windows - Type 2

Paper & Quality Options	Color Management
Sheet	2 Color Controls
Plain Paper / Bright White Paper	Fix Photo
Fine	
Letter (8 1/2 x 11 in)	Giff (No Color Adjustment)
Borders     O     Borderless	ICM Mode
Orientation	Input Profile
	Intent
Print Options	
High Speed	Printer Profile
Edge Smoothing	Printer Profile Description
Black/Grayscale	0
	Show all profiles.
Custom Settings 🛛 🗸 Save Setting	s 5 Show this screen first

- 1. Select the "Advanced" tab.
- Select the appropriate media type.
   (For sublimation, avoid using *Plain Paper* and select *High Quality Plain Paper* or *Matte* paper instead. Set the "Quality" to one of the two highest settings).
- 3. Under "Color Management", select "ICM".
- 4. Once ICM is selected you will have the option to check the box labeled "Off (No Color Adjustment)". Check the box.
- 5. To avoid having to do all this on each print, we recommend saving a Preset. Press "Save Settings..." to configure a new preset.
- 6. Turn off "High Speed" if you're having issues with ink not drying quickly enough and causing "pizza wheel marks".

#### Windows - Type 3

Current Settings	EPSONFD0454	(SC-P800 Series) Printing Preferences X
Main Media Type:	🔿 Main 🗊 Pa	age Layout 🥢 Utility
Plain Paper / Bright White Paper Print Quality Level: LEVEL 2 (Quality) Print Quality: Normal - 720x360dpi	Select Setting:	Current Settings
High Speed: On Color: Color	Media Settings	Plain Paper / Bright White Paper V Custom Settings
Source: Sheet	Ink:	Last Used  V Paper Config
Page Layout Orientation: Portrait	Color:	Color
Rotate 180°:         Off         Mirror Image:         Off           Copies:         1         1         1           Size:         Letter (8 1/2 x 11 in)         1	Print Quality:	Quality 2
	Mode:	Off (No Color Adjustment)
Job Settings: Off	Paper Settings Source:	Sheet ~
	Size:	Letter (8 1/2 x 11 in) VUser Defined
		Borderless
Color Correction Color Adjustment: Off (No Color Adjustment)	Print Preview	er
		MK PK LK LLK C VM LC VLM Y
Always show Current Settings.	Reset Defaul	ts Version 6.74
Close		OK Cancel Apply Help

- Select the appropriate media type. (For sublimation, avoid using Plain Paper and select High Quality Plain Paper or Matte paper instead).
- 2. Set "Print Quality" to "Fine" or "Quality".
- 3. "Mode" should be set to "Off (No Color Adjustment)".
- 4. We recommend saving a Preset. Press the "Save/Del..." button to configure a new preset.

### Mac - Type 4

- 1. Select "File"-> "Print..." from your graphics application. In this example, we're using PhotoShop.
- 2. Select the "Print Settings..." button under the "Printer Setup"

Photoshop Print Settings	
10.996 h x 8.496 h	Printer Setup         Printer:       EPSON WF-7720 Series         Copies:       Print Settings         Layout:       Print Settings         Layout:       Print Settings         Color Management       Management in the print settings dialog box.         Document Profile:       Prohoto ROB         Color Handling:       Photoshop Manages Colors         Printer Profile:       TPP-InkOwI-aSub125g-WF-7720-Chart 918         Send 16-bit Data       Normal Printing          Rendering Intent:       Relative Colorimetric         Black Point Compensation       )         Description
Match Print Colors     Gamut Warning     Show Paper White	Cancel Done Print

3. The Print menu will appear and click the "Show Details" button if it has not been selected.

	Print	
Printer:	EPSON WF-7720 Series	$\bigcirc$
Presets:	Sublimation- 8.5 x 11	$\bigcirc$
Copies:	1	
? PDF 💌	Show Details Cancel	Save

- 4. You will see a dialog like below, but it may vary depending on your specific printer model.
  - a. Check that the correct "Printer:" is set
  - b. Select the preset that you made before, if applicable

c. The first menu normally shows "Layout". Click the side arrows to get to the following menus and settings (may vary by printer model):

	Print	
Printer: Presets:	EPSON WF-7720 Series Default Settings	<b>e</b>
Copies:	1 0	
Paper Size:	US Letter 8.50 by 11.00 inche	es 📀
	Layout	0
1	Pages per Sheet: Layout Direction: Border: Two-Sided:	1 C
? PDF 💟 Hic	de Details	Cancel Save

d. **Color Matching:** Should be grayed out if you've told Photoshop to manage the color

	P	rint	
Printer:	EPSON WF-7720 Seri	es	<b></b>
Presets:	Sublimation- 8.5 x 11		0
Copies:	1		
Paper Size:	US Letter 8.50 by 11.0	10 inches 😒	
	Color Matching		
	ColorSync	EPSON Color Contr	ols
? PDF 🕑 Hid	le Details		Cancel Save

e. Print Settings: Select the preferred paper type for your brand of paper and ink. It should be either "Epson Matte", "Premium Presentation Matte" or "High quality plain paper". Avoid using the "Plain paper" setting.

Print	
Printer: EPSC	ON WF-7720 Series
Presets: Subli	limation- 8.5 x 11 📀
Copies: 1	÷
Paper Size: US L	etter 8.50 by 11.00 inches 📀
Print	t Settings
Paper Source:	Cassette 1
Media Type:	High quality plain paper 📀
Print Quality:	Fine 😌
	Borderless
	Expansion: Max
	Grayscale
	✓ Mirror Image
? PDF 🔽 Hide Deta	cancel Save

f. Color Options: Should show that the printer color management has been disabled.

Print	
Printer:	EPSON WF-7720 Series
Presets:	Sublimation- 8.5 x 11
Copies:	1 0
Paper Size:	US Letter 8.50 by 11.00 inches
	Color Options
A Printer Color Management features have been disabled as color is managed by either your application or the operating system.	
To enable printer color management, please select printer-managed colors from your application or select 'EPSON Color Controls' from the 'Color Matching' dialog.	
? PDF 💟 Hid	de Details Cancel Save