ditherPrint

(App for IEI ePaper Devices)

User Manual

Rev. 1.00 - June 21, 2023

Revision

Date	Version	Changes
June 21, 2023	1.00	Initial release

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Overview

1.1 Overview

The ditherPrint is a PC application software designed to manage the content of IEI ePaper devices. With the ditherPrint, users can transfer images to IEI ePaper devices by using PC or laptop. It is recommended to read the datasheet of your ePaper device and this user manual before start using the ditherPrint.

1.2 System Requirements

The computer requirements for installing the ditherPrint are as followings:

- OS: Windows 10 or latter
- Processor: Intel® Core™ i3 64-bit or latter
- DDR: 8GB or larger
- HDD/SSD: 256GB or larger
- I/O: USB 2.0 or latter
- PC monitor: 11.0" or larger

## 1.3 Installing ditherPrint and .NET

Step 1: Double click "setup.exe" to start installing the ditherPrint app. Follow the instructions to install the software. You may need to choose a destination folder, and customize some settings.
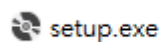
Step 2: Install .NET Windows Desktop Runtime if required. Make sure your PC connects to the internet for downloading and installing the .NET desktop runtime.

Step 3: Install EPD device driver if required.
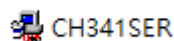
Chapter

2

Using ditherPrint

2.1 Connect ePaper Device

Step 1: Double click the icon of the ditherPrint application.

Step 2: Connect the IEI ePaper device to the PC by using a USB Type-C cable.

Step 3: Press the power button of the ePaper device for 1 second to wake up the ePaper device.

Step 4: Click ⟳ to refresh connection device (one by one connection).

Step 5: Select the connected ePaper device.

**Step 6:** Enter password (default: 0000), and click the Connect button.

2.2 Upload and Manage Images

You can upload up to 16 images to the ditherPrint. To do this, follow the steps below:

Step 1: After entering the ditherPrint, the following screen appears. Start by uploading images. You can either drag and drop images or browse to select images. Note: The ditherPrint only supports BMP image format.
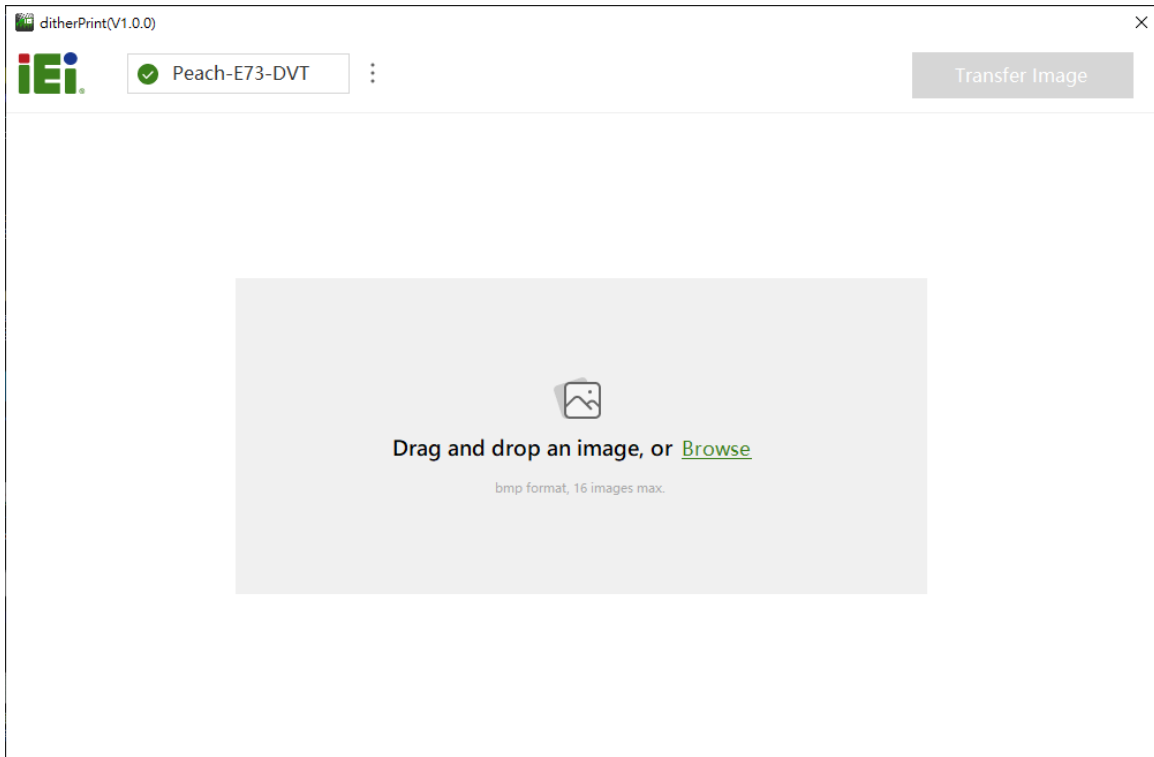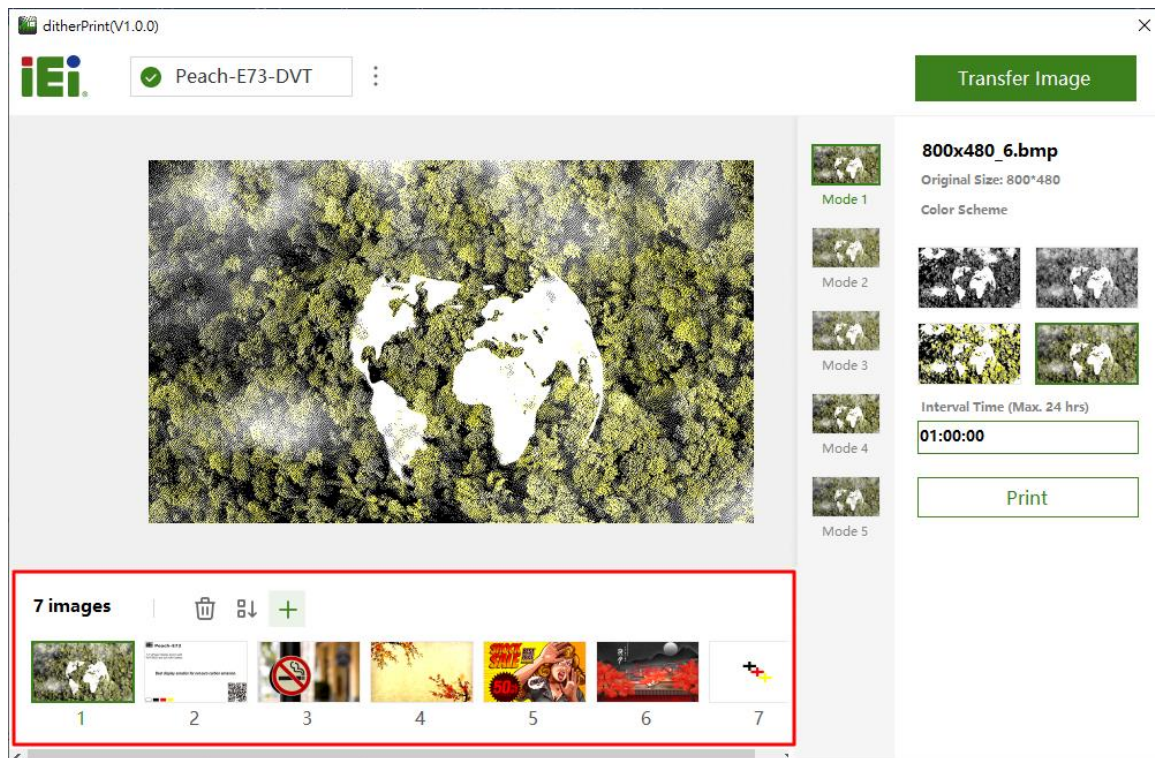

Step 2: If the image have more colors than the ePaper device can handle, the following message will appear. Confirm it by clicking the **Upload** button.
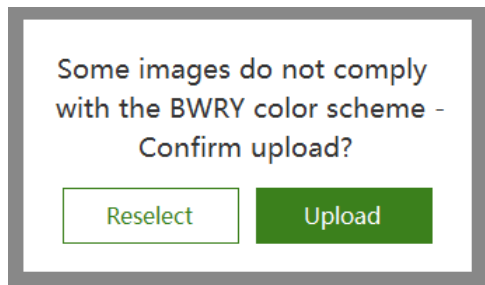
Step 3: All of the uploaded images will be shown in the image pane. You can manage them by using the following icons.

|	
🗑	Remove the selected image
⬇	Re-order images
➕	Add images

2.3 Select Color Scheme

Step 1: Select an image from the image pane to set its color scheme.

Step 2: Select a color scheme or a mode for the selected image to display. A preview will be shown in the preview section. The last selected color scheme will be saved as the final display mode of the image.

Step 3: You can also click the **Print** button to print the image onto the ePaper device to check the real display result. It will take some time to print the image.

Step 4: Click another image to set the color scheme if there is any.
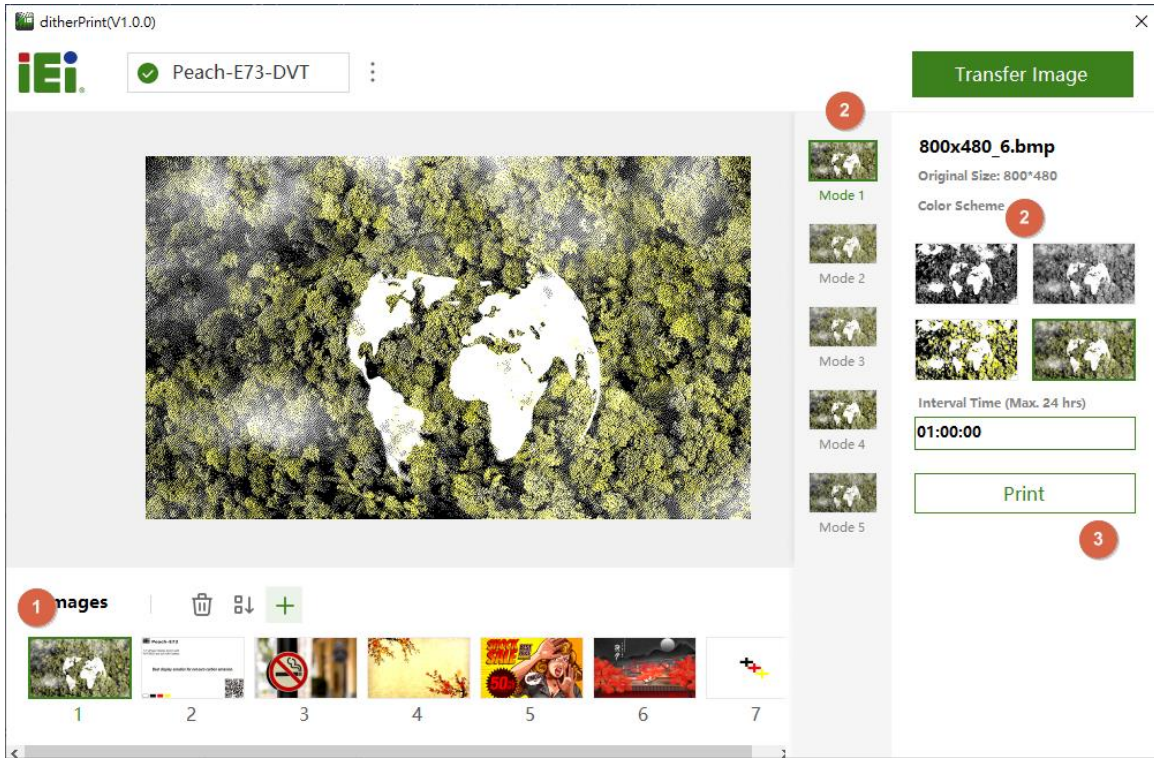
 NOTE:

If the image is compliant with the BWRY (black, white, red, yellow) color scheme, the color mode options will not be provided for you to select. Example:
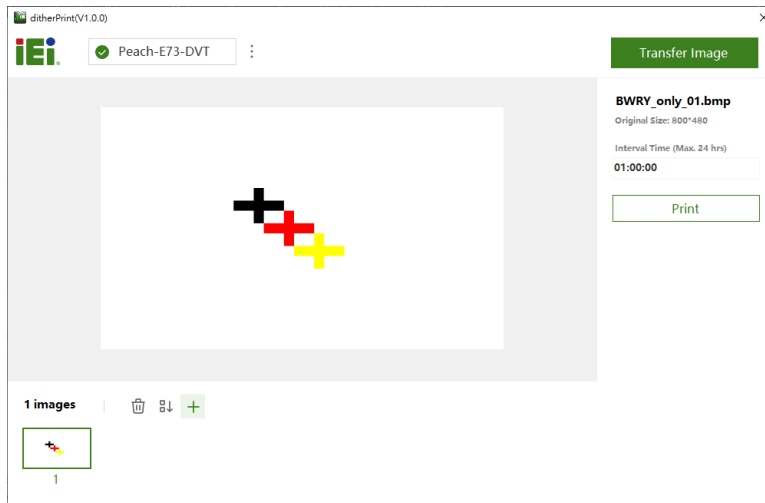
2.4 Print Single Image

To print a single image onto the ePaper device, select an image and adjust its color scheme as described in the previous sections. Then, click the Print button. The image will be printed onto the ePaper device even after the device is disconnected from the PC.

![Warning icon] **WARNING:**

Do not disconnect the device or remove batteries until the image is fully printed on the ePaper device. Otherwise, the device screen may be damaged.

2.5 Display Slideshow

You can transfer multiple (max. 16) images to the ePaper device for slideshow. To do this, follow the steps below:

Step 1: Refer to **Section 2.1** and **2.3** to upload images, and set the color scheme for each image.

Step 2: Set the slideshow interval time (hh:mm:ss, maximum 24 hours) between each image.

Step 3: Click the **Transfer Image** button to transfer images to the ePaper device.
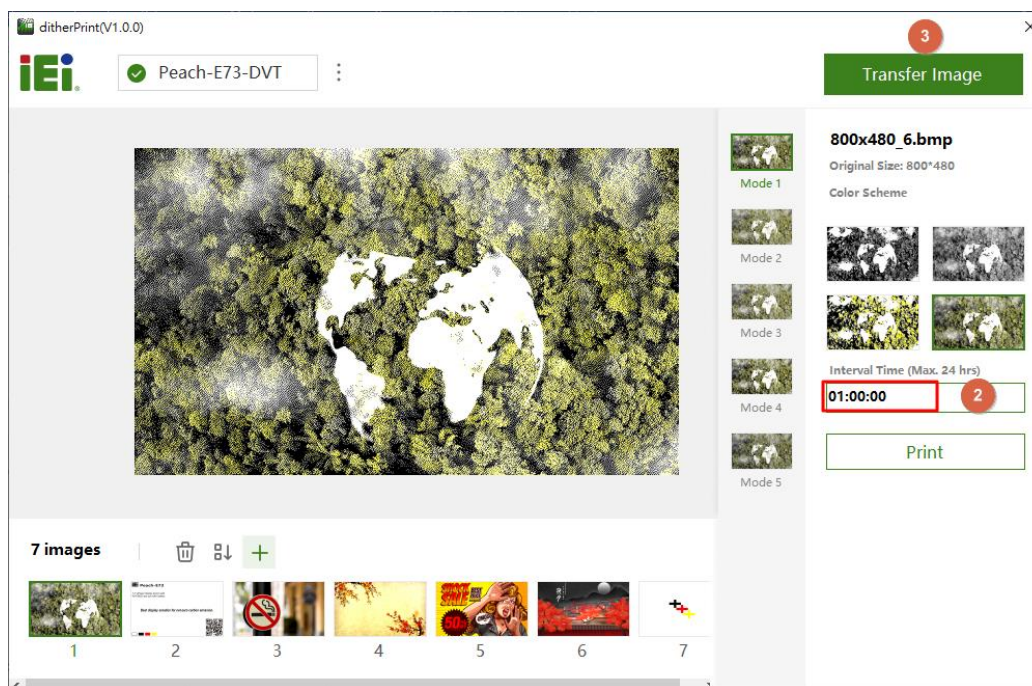
Step 4: When prompted with the following message, confirm it by clicking **Transfer**. It may take some time for the ditherPrint to transfer the images. Please be patient.

Are you sure you want to transfer and cover all the images in the device?

Cancel | Transfer
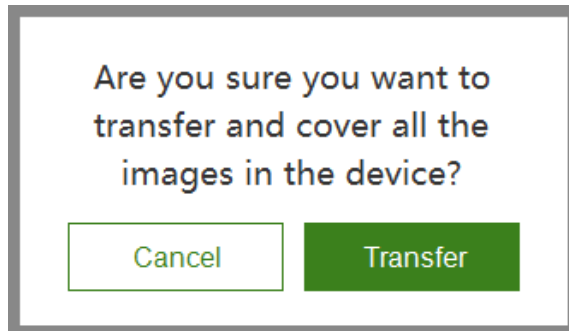
Step 5: When the transfer is completed, remove the USB connection to start the slideshow. The slideshow starts after 5 seconds of disconnection or rebooting the ePaper device.
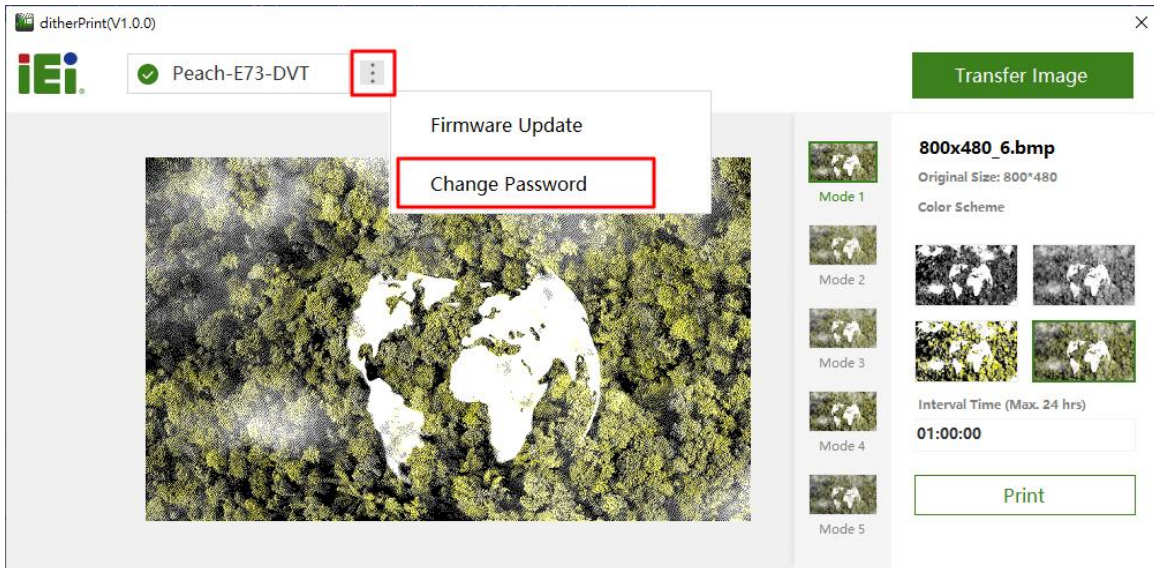
Step 6: After disconnecting the device, the ditherPrint will show that no device is connected. You can click 'No Device' to return to the initial screen to connect another ePaper device.

ditherPrint(V1.0.0)

No Device

2.6 Change Password

Step 1: Click ⋮ to show the setting menu.

Step 2: Select "**Change Password**".

Step 3: Enter your old password and your new password (4 letters).

Step 4: Click the **Save** button to save your new password.

2.7 Update Firmware

Step 1: Click ⋮ to show the setting menu.

Step 2: Select "**Firmware Update**".
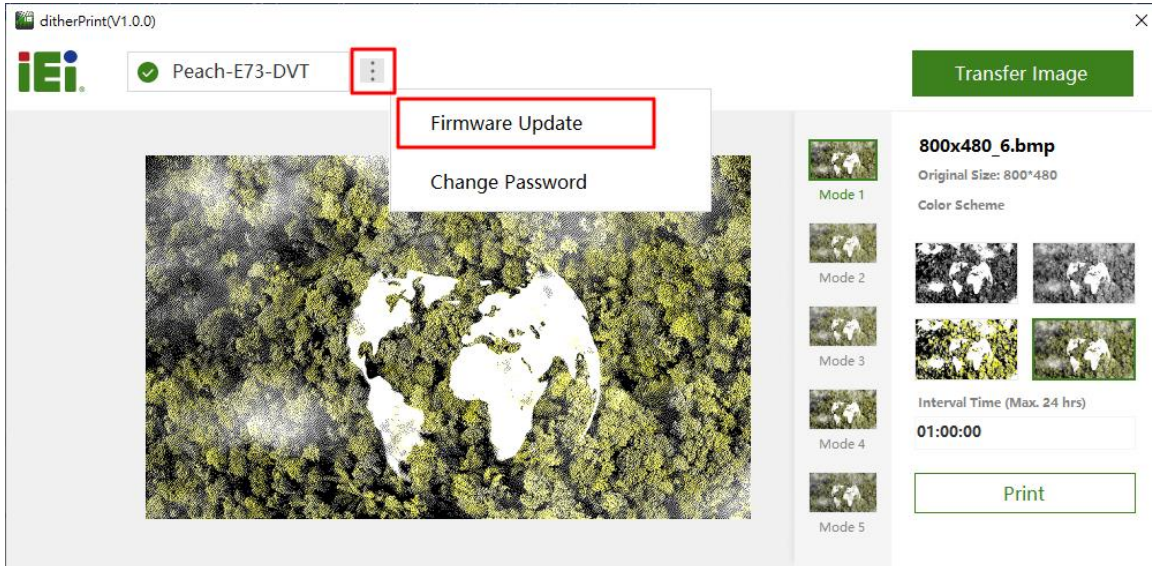
Step 3: Upload the new firmware file. You can either drag and drop the file to the ditherPrint, or browse to select it.

Step 4: Confirm firmware update. **Note:** Do not remove the USB connection until the firmware update is complete.

FAQ

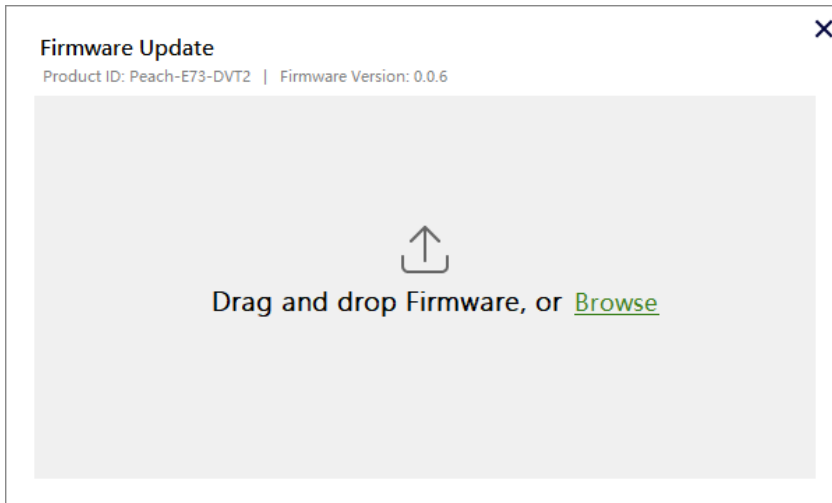This section lists some Frequently Asked Questions to help the user better understand the ditherPrint app.

3.1 Connection Fail

Check if the ePaper device is connected to the PC by going to Windows System\Control Panel\Hardware and Sound\Devices and Printers.

Press the power button for 1 second on the ePaper device to wake up the ePaper device. Then click 'Connect' again on the ditherPrint.

3.2 No Slideshow

To display slideshow, the ePaper device must be provided with power, either by batteries or USB Type-C connection (5V). If using USB power, the ePaper device must be fully disconnected from the ditherPrint app (either by closing the app or click the device name button) to enable slideshow. So if there is no slideshow, check the above mentioned conditions to troubleshoot. The ePaper device installed with batteries should start the slideshow after 5 seconds of disconnection.

3.3 Stop and Restart Slideshow

Press the power button of ePaper device for 5 seconds to stop the slideshow. The LED on the front panel should blink twice in red to indicate the device will stop the slideshow. If the power button is pressed during image update, the slideshow will not stop until the image update is completed.

Press the power button for 1 second to restart the slideshow.

3.4 Flashing Issue during Image Update

The device screen will flash several times during the transition to the next image. The flashing is normal, and the flash time depends on the environment temperature. Lower temperature enables longer flash time.

3.5 Improve Image Display Effect

Designing the image resolution and colors aligning with the ePaper device's specification can bring out the best image display effect. We suggest you to do so, and also follow the guideline provided below to improve display effect.

- Ensure your image colors match with the ePaper device's specifications. For example,
  Black: R=0, G=0, B=0
  White: R=255, G=255, B=255
  Red: R=255, G=0, B=0
  Yellow: R=255, G=255, B=0
  Blue: R=0, G=0, B=255
  Green: R=0, G=255, B=0
  (CIE 1931 RGB color space)
- Try different image process modes, and choose the mode that can come out with the best display quality.
- Use sans-serif fonts for the text in the image, for example, Grotesk, Humanist, and Geometric.
- Avoid scaling up or scaling down the image.
- Check the environmental temperature in the ePaper device's operating temperature specification.

3.6 Extend Battery Life

The ePaper device's battery life depends on image update interval time. Longer image update interval time comes with longer battery life.

3.7 How to Use the 'Print' Function

The print function is to speed up the image design process. The print function displays the main preview screen image on the ePaper device. Image designers can look and feel the image display effect and then fine tune the image. By using the print function to print the image to the ePaper device, the user do not need to install the battery. The image will stay on the ePaper screen after removing the USB connection. It is very useful when slideshow is not necessary.

3.8 Forget Password

Install battery or supply power by USB type-C connector (5V) to the ePaper device. Then revert the ePaper device to factory default to reset the password to default.