USER GUIDE – Image Update on E Ink Displays

Panels

- 13.3" 28" 32" 42" Monochrome
- 25.3" 32" Color

Systems

This guide, and our procedure, is designed for use with E Ink based displays using

- E Ink panel as noted above
- Digital View driver board
- Raspberry Pi as a media player.

Software

Referenced Digital View software application is:

EP Demo App v2.20 for E Ink based 13.3"/25.3"/28"/32"/42" panels

Key Notes:

- The software JPEG image(s)
- The software works with Microsoft Windows 8 or Windows 10
- Main steps are:
    - Create the image or images (JPEG)
    - Use the App to:
        - Copy the JPEG image(s) to a **USB drive**, or
        - Transfer over a LAN (network), or
        - Create a folder for transfer to Google Drive.

USB DRIVE

One of the methods for updating the image content on an E Ink based display is to transfer the image(s) onto a USB flash drive (memory stick) and to then connect that to the display.
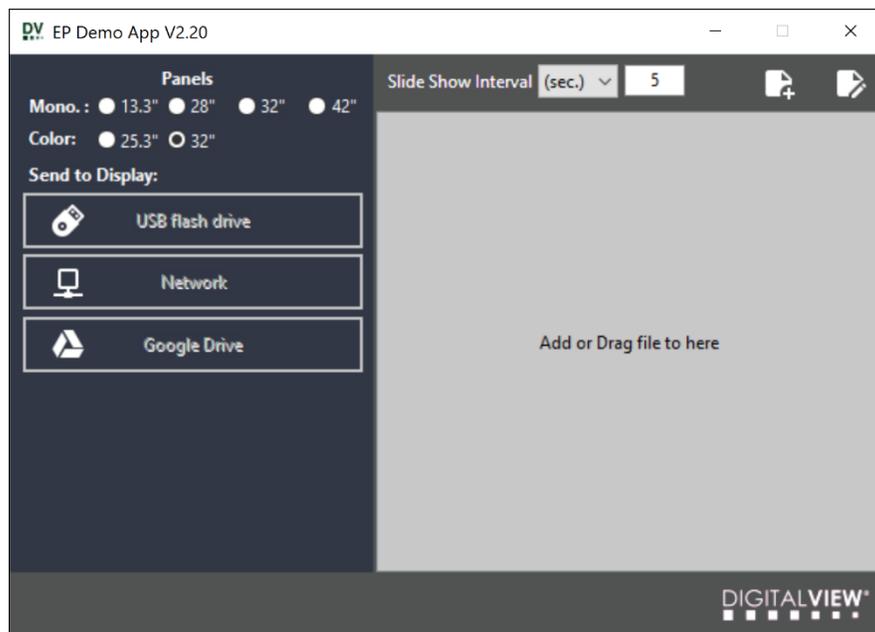
- Create an image file (there is a section on this below)
- Transfer to USB
- Connect the USB to the display

When the software is installed on your Windows based PC you should see a desktop icon as shown below.

Double click on that or find the application in the Start menu to open the App then follow the procedure below.

**App Home Screen**

The main functions within the App are:

- **Panel**: This App is designed for use with displays using various E Ink panels. It is very important to select the correct size as the image resolution and aspect ratio is different for each panel.
- **Slide Show Time Interval (min or sec)**: If there are multiple image files shown in the playlist, they will display one after the other as a slideshow using the interval set in seconds.
- ⬜ Add an image to the playlist, it will be shown as a file listed in the large gray window in the app. You can also drag and drop a correct size image to the gray playlist area.
  - 13.3" 1600 x 1200 pixels
  - 32" 2560 x 1440 pixels
  - 42" 2880 x 2160 pixels
- ⬜ This will open a separate window for a basic content creator, you can add graphics and text to a suitably sized template and create an image file.
- **Send to Display**: You can select to write the images in the playlist to:
  - USB flash drive,
  - Network, a local network to a connected display,
  - Google Drive, it creates a folder for transfer to Google Drive for a display with a connection to Google Drive.
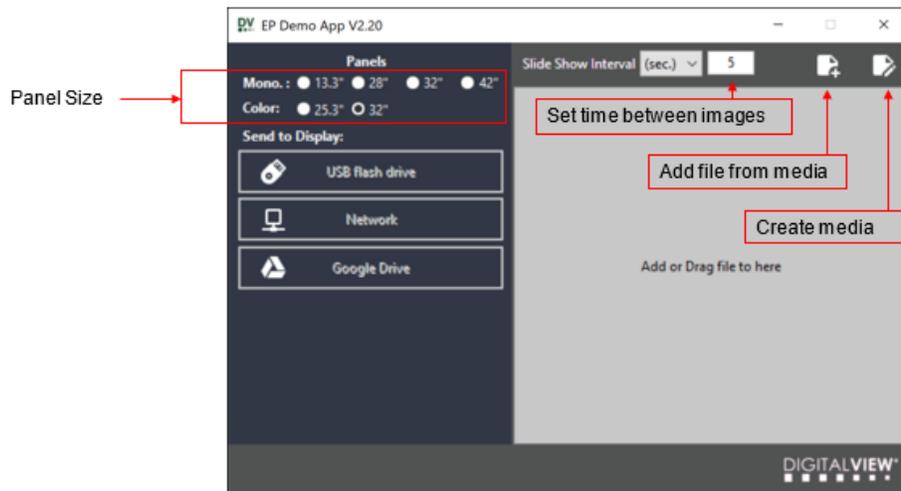

The following assumes you have created a suitable image file or files to work with. For details on image files see the IMAGES section later in this guide.

To add an image, click on then select the file:
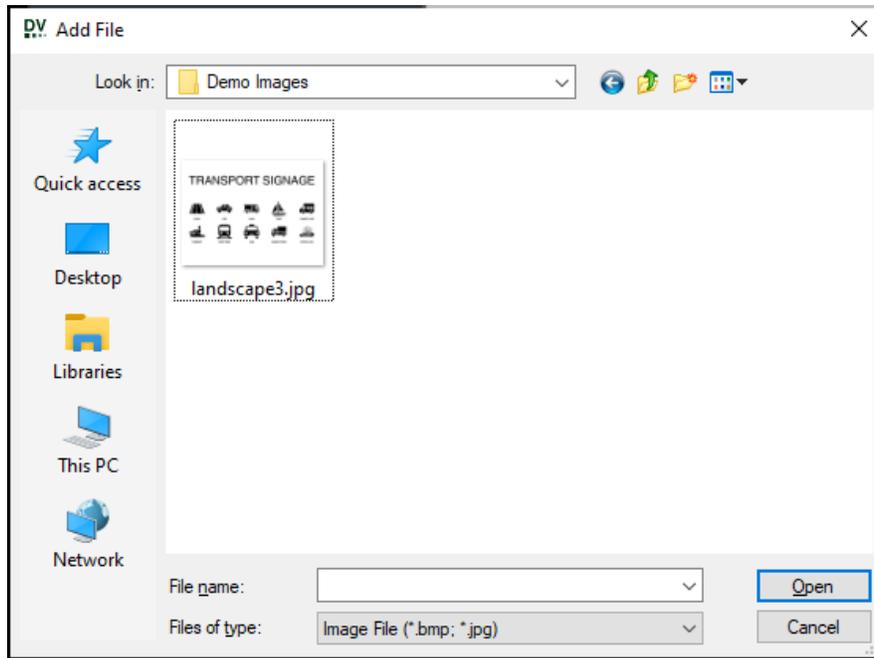
After selecting the image and clicking on Open the image file will appear in the playlist section of the app as shown below. You can add more images if you want to run a slideshow of multiple images.
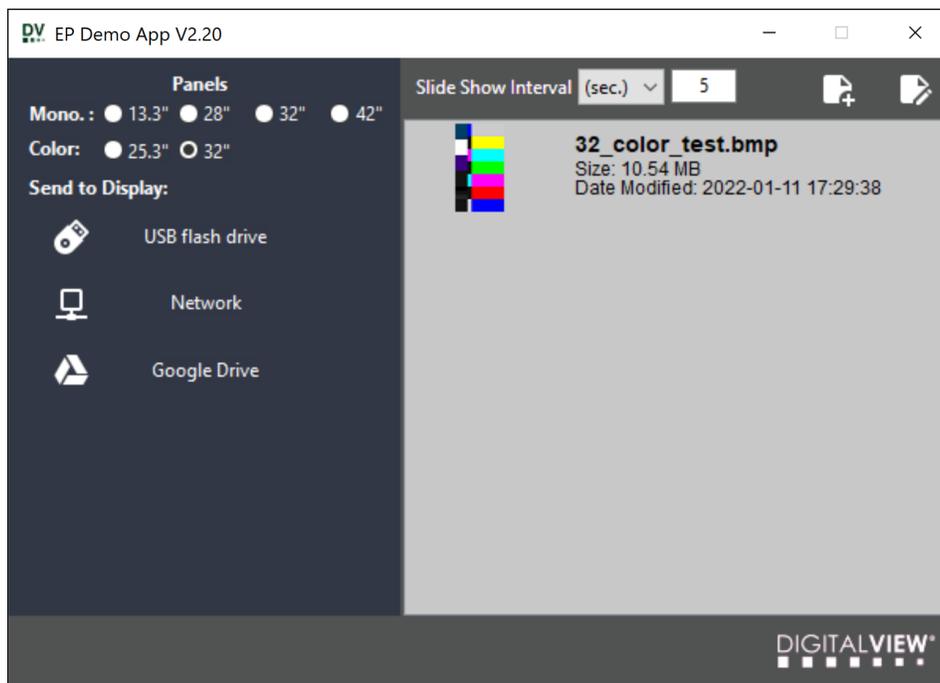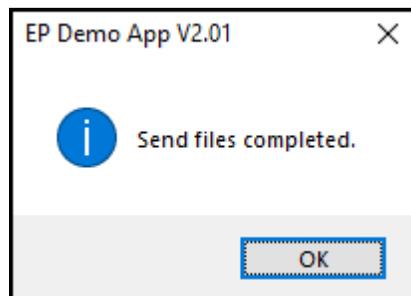
To transfer the image(s) in the playlist to a display using a USB flash drive, click on the 'USB flash drive' icon (ensure you have a suitable blank USB flash drive connected to your PC):

Select the USB Drive from the Windows files window as shown and click OK
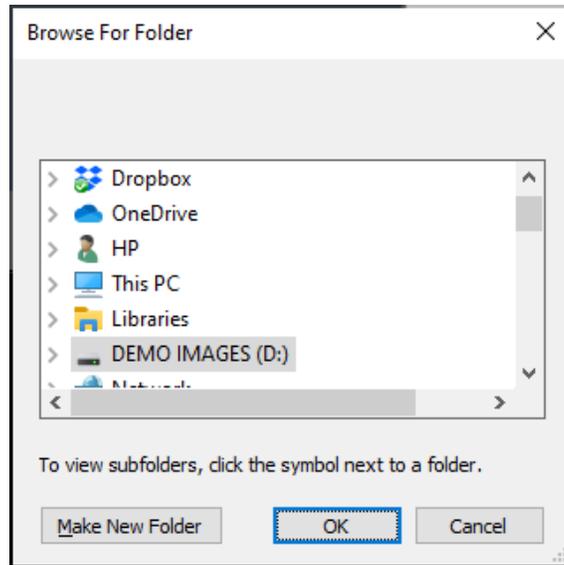
When the app has finished copying the files to a folder on the USB drive you should see the message:


You can now remove the USB drive from your PC and plug it into the USB port on the display. If the display is connected to power, it should update the image though give it a couple of minutes to run the process. **Note***: If you have a lot of images this process can take a few minutes as the system converts the files as it downloads them from the USB drive*.

![Digital View logo]

NETWORK

To load an image to the display using Network.
Note: Network and display must be on the same local network.

1. Click on the Network icon
2. The app will find all the DV displays on the local network
3. Click on the display in the "Discover Devices" window where the image is to be loaded
4. *Next, the Send to Display screen will pop up, enter the password and click on Send*
5. *Note: The Default Password is: 12345678*
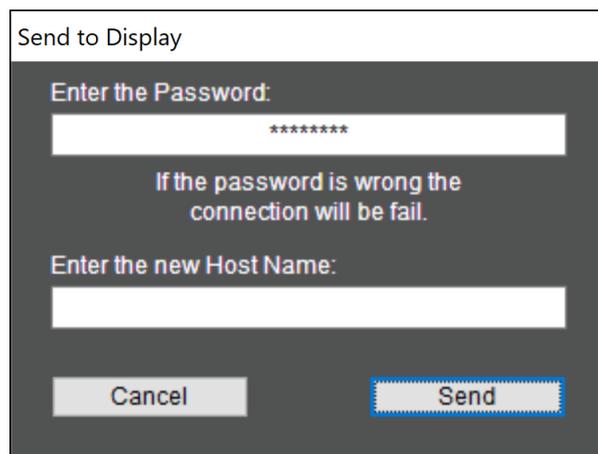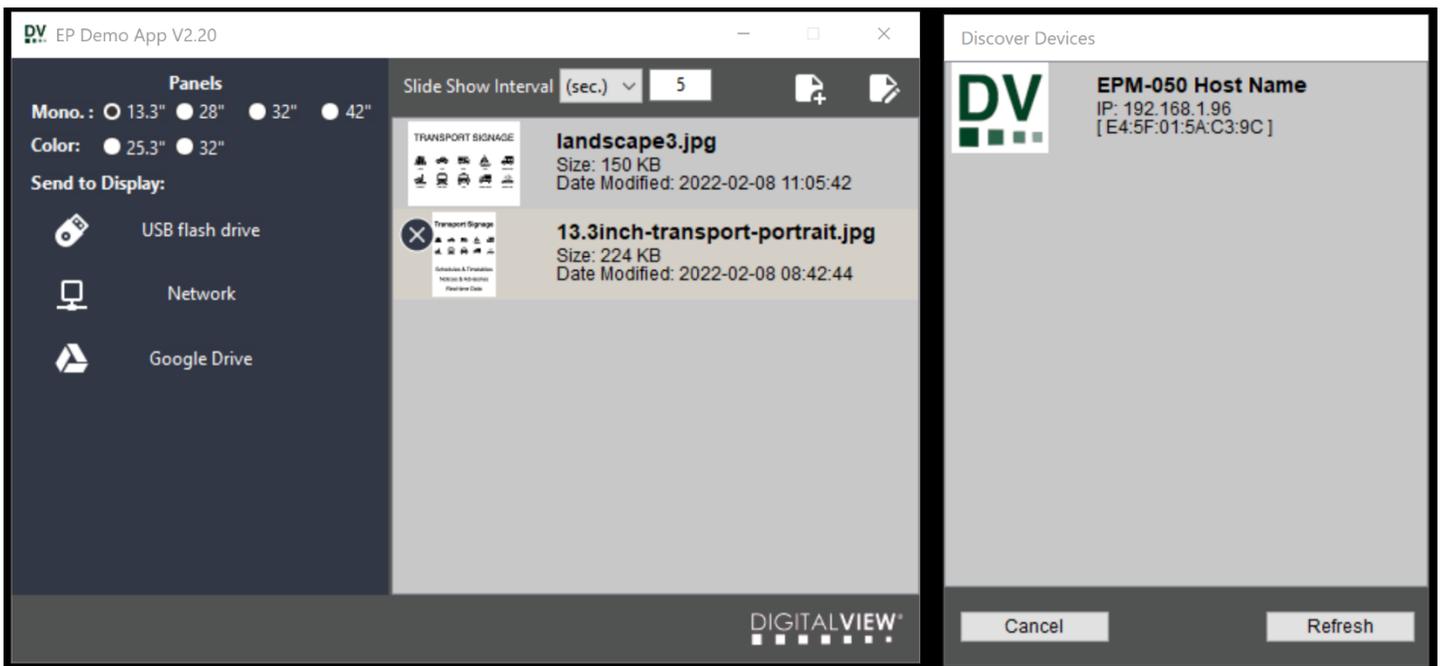
GOOGLE DRIVE

To load an image to the display using Google Drive is a two-step process at this time that requires:

1. First selecting Google Drive in the app as a destination, this will save a suitable folder on your PC.
2. Next copying that folder to a Google Drive account. The display will automatically connect and retrieve the folder from Google Drive and display the image(s). This assumes the display has been configured for that Google Drive account which is a separate installation process.

Click on 'Google Drive' and then select where you want the folder to be saved on your PC, this is the first step as noted above. For example, Desktop and select 'OK'
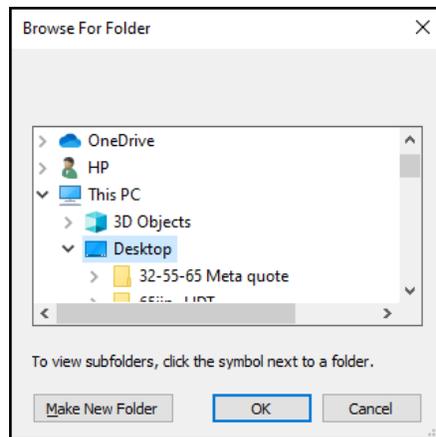
Next "media" folder has been created and place on your desktop
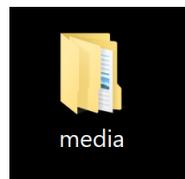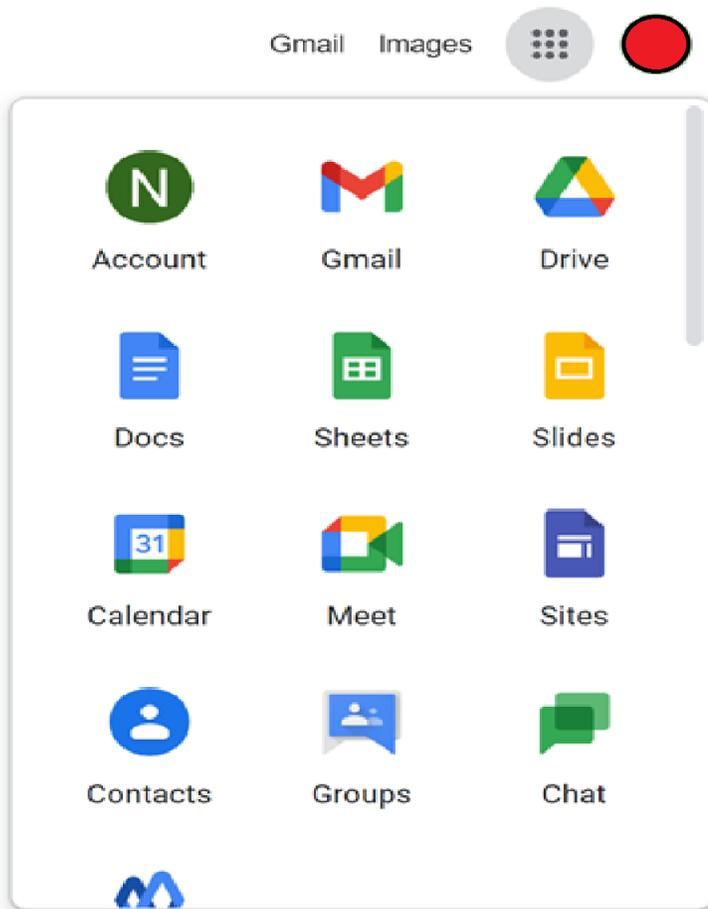

Using an Internet web browser and open Google Home page and then click on Google App icon

Next select Google Drive icon

Next Drag and move media from the Windows desktop to the Google Drive root drive

You can verify folder has copied from your desktop to Google drive by checking the Google Drive folder:

IMAGES

The support image file type is JPEG, this can be with .jpeg or .jpg at the end of the file name.

Image resolutions that are supported for each panel (display) size are:

- 13.3" 1600 x 1200 pixels
- 32" 2560 x 1440 pixels
- 25.3" 3200 x 1800 pixels
- 28" 3840 x1080 pixels
- 42" 2880 x 2160 pixels

Portrait or Landscape: Both are supported.

The app includes a basic image creator that can be accessed by clicking on the ⬚ symbol. x

FAQ

Which method of image transfer should I choose?

- USB: This is the simplest and most reliable way of loading new image content onto the display. Ideal for a simple system that requires power only when changing the image.
- Network: Intended only for use over a local area network, i.e., the user and the display are on the same network. At this time, it is not a secure connection so others from outside the approved network may gain access to the display.
- Google Drive: Intended for installations where the display is located remotely, and the only viable connection is via wi-fi or cellular connection as the final link to the display. It is meant to be an interim method, as it may be replaced by a cloud-based system in future.

A summary of the above may be USB for personal connection, Network for local connection, Google Drive for remote connection.

What is the difference between the terms panel, screen, display, monitor?

In this context these are likely to be references to parts or all of the same thing:

- Panel: The component that shows the actual image. It may also be referred to as the E Ink panel.This terminology is widely used in the hardware technology industry.
- Screen: In a finished monitor or display system this is the part showing the image, i.e. it uses a panel.
- Display: This is the most generic term, and it may get used to refer to the complete display system or the screen part.
- Monitor: This is the complete display system.

In what way is an E Ink panel or display different from other displays?

Key points in answer to this question are:

- E Ink based displays are reflective rather than transmissive. That means it uses local or ambient light sources such as sunlight to be visible, ie similar to paper in this respect. Other display technologies such as LED, OLED or LCD either emit light or rely on a built-in light source to be visible. This is why the E Ink ePaper displays are excellent in sunlit locations but are also good in any other location with lighting.
- It is bistable. This means it is stable in two modes, in this case black or white. So, when an image is showing on the display it does not require power to hold the image. Other display technologies such as LED, OLED, LCD need constant power to show an image.

- ePaper technology requires very low power. As a result of only requiring power to change the image, an E Ink display uses power for a short time, and not very much power even then, making it a comparatively extremely low, or even ultra low power display technology. This makes it suitable for installations relying on power from local solar or wind power sources.
- Although the technology is advancing quickly, E Ink technology is limited to images only, not video at this time.
- E ink displays are monochrome rather than color. The E Ink panels referred to in this guide support up to 16 grayscales, i.e. 16 shades from white to black. There are color E Ink panels, but at this time they are not intended for outdoor or direct sunlight exposed applications.

SUPPORT

If you require support contact us via our website, we seek to make contact easy from there:

www.digitalview.com