

# **DASUNG**

**The Inventor and Leader of E Ink Monitor  
Save Your Eyes**

**The World's First Ambient Light Reflective E Ink Monitor**

# **Paperlike Pro**

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## **User Manual**

- Please Read This Manual Carefully  
Before Using Paperlike Pro

## Caution

■ **CAUTION 1: Be careful of the vapor**

If there is a sudden temperature drop, there may be vapors in the monitor which may harm the circuit. Therefore, when Paperlike Pro comes from outdoors to indoors during winter, it should be let stand for at least one hour until the vapors evaporate completely before using.

## Caution

### ■ CAUTION 2: Keep the appropriate temperature

The appropriate temperature is necessary for E Ink. Higher or lower temperature may reduce Paperlike Pro's speed, contrast and lifetime.

The best working temperature is 15 °C ~ 35 °C , storage temperature is -20 °C ~ 60 °C . It will lead to irreversible damage to E Ink screen beyond this range of temperature.

## Caution

### ■ CAUTION 3: Store the packaging items

Please keep exterior and interior packing items. Paperlike Pro belongs to precision electronic products and it may break during the shipment if there is no packaging protection. Also, a postal company may refuse non-original packaging parcels.

## Caution

### ■ CAUTION 4: Take it as a secondary monitor

Paperlike Pro is more of a secondary monitor, which is mainly used for protecting eyes. Instead of a photoelectric display, Paperlike Pro's display is based on ink droplets movements, so lifetime limit is unavoidable. Any misuse may lead to Paperlike Pro's early damage.

## Caution

### ■ CAUTION 5: Use it with the recommended configuration

Paperlike Pro can only realize gray display because of E Ink's principle. Given that currently mainstream operating systems only support conventional monitors and cannot match well with Paperlike Pro, users should read this manual carefully. Manual provides the instruction for recommended configuration, which provides the best display effect. Certainly, it is also necessary for users to learn and explore independently.

## Caution

### ■ CAUTION 6: Connection may be unstable

Some PC/Laptop's motherboard chipset does not fully meet the USB/HDMI standard, which may not support Paperlike Pro very well. Make sure that your PC/Laptop completely follows the international USB/HDMI standard. Otherwise, it may cause unstable connection with Paperlike.

## Protect your Paperlike Pro

- Please use a soft cloth to clean the monitor. Do not use any other subjects on display that could damage the display.
- When you put Paperlike Pro in the bag, please use the protection to avoid the damage.
- Do not store Paperlike Pro at very high temperature or very low temperature.
- Avoid any sudden temperature change or humidity change
- The display is made of glass. When the pressure is given, Paperlike Pro could be broken. When the display is broken, do not continue to use and immediately contact DASUNG .

## Patent

DASUNG Tech is the first company that uses E Ink technology in the commercial display with using industry-leading technology all over the world. Paperlike Pro E Ink monitor and/or related method of use may be subject to one or more of the relevant laws or acts of patent protection.

## Rights statement

The rights of final interpretation of this manual reserves to Beijing Dasung Tech Co., Ltd.

# Foreword

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Congratulations! You have received E Ink eye-protection monitor — Paperlike Pro from DASUNG Technology the first time. Thanks for your encouragement, trust and waiting!

Currently, 24 hours a day, our life is filled with all kinds of consumer electronics such as computer, pad and smartphone, which offer us convenience and change our world. But on the other hand, the radiation, stroboflash and blue light produced by those conventional monitors have strong side effects, which will bring unprecedented fatigue and pressure to our eyes.

It is well known that E Ink technology is the world's best ambient-light-reflect display technology. Its principle is driving ink droplets in microcapsules by voltage to make natural and clear images on the screen under environmental light. To protect our eyes, DASUNG applied the above E Ink technology to computer monitors creatively and developed a real sense of ambient-light-reflect computer monitor, which can satisfy eye-protection needs in general work and study.

As a new concept monitor, Paperlike Pro has HDMI connection, it has the world's biggest 13.3" commercial E Ink display element, highest 1600\*1200 physical resolution, fastest response speed, optimal variable display mode and smartest ghost shadow cancellation technology. It can bring us numerous and complicated information from computer and internet in a natural way like traditional printing paper, which can protect our eyes fundamentally. In addition, we are also very particular about its appearance and workmanship. It should be said that Paperlike is an innovative product with high courage and honesty.

We know that this is only our first step taken and Paperlike Pro needs to be improved in many aspects. For example, it is only a black-and-white monitor without showing more colors; its display speed cannot be comparable with conventional monitors and display resolution cannot be higher temporarily; the ghost shadow still exists; Paperlike Pro's display effects may be greatly impacted by render effects in mainstream operating systems like Windows and Mac. We are keep fighting to bring you a better Paperlike Pro, which may need your help, encouragement, and support. We also hope the users can learn and adapt while using Paperlike Pro.

Wish you enjoy Paperlike Pro and relax your eyes!

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# Instructions

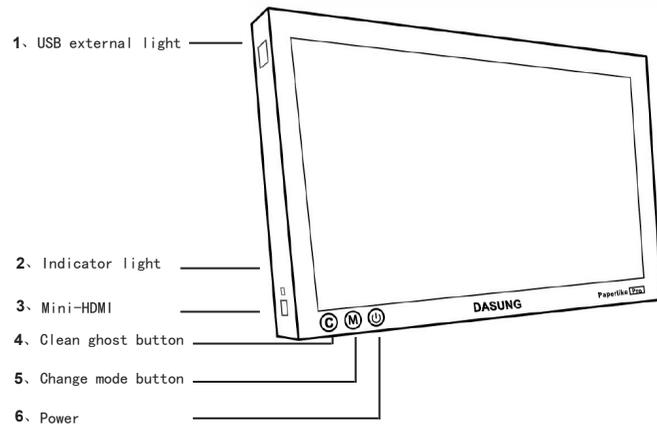
## Packing



- Paperlike Pro
- USB disk with software installation package inside
- HDMI cable
- Portable stand
- Instructions
- VESA screws
- USB-A male to USB-A male cable

1. Interface for USB external lamp
2. Indicator light (Indicate Paperlike Pro's status)
3. Interface for Mini-HDMI (Only for data transmission and power supply. Other use shall be prohibited)
4. Clear ghost shadow button (One click to clear the ghost shadow on screen)
5. Change mode button (Click to change display mode)
6. Power (Click to turn off Paperlike Pro's)
7. C button and M mode button pressed together; monitor will reboot

## Components



## Specification

Paperlike Pro	Screen	Max 13.3-inch E Ink screen (Carta)
	Video transmission	HDMI
	Power supply	USB (5V-1A)
	Aspect Ratio	4 : 3
	Display	Reflects ambient light (no backlight)
	Resolution	1600×1200
	Perform resolution	800×600 to 1600×1200
	Best working temperature	15°C ~35°C
	Display mode	-A5 model : Increases image details (DASUNG technology) -Floyd algorithm :Combines high quality image and high speed -A2 model : Filters out image details -16 model : High detail visibility -A61 model : Better detail visibility than 16 model
	E Ink ghost shadow removal	Smart Quick Blink (DASUNG technology)
	Shell material	Plastic
	VESA standard hole	75mm×75mm
	External interface (small lamp)	USB-A
	Operating system compatibility	Windows 7 Windows 8/ Windows 10 Mac OS 10.11-10.14 Linux Ubuntu-16.04-Desktop-amd64
Software	Free upgrade	

## Learn how to use

Paperlike Pro is not the born perfect product. You need to find a suitable using method for it. Because Windows and MAC OS usually take conventional monitor as the default one, they have all kinds of render effects such as rich color and animation, which is inappropriate for Paperlike Pro's black-and-white display. Any inappropriate setting may cause ghost shadow and unclear font. Therefore, before using Paperlike Pro, it is advised to follow the recommended setting, which requires unnecessary render effects to be off and font to be adjusted appropriately.

## Advice and caution

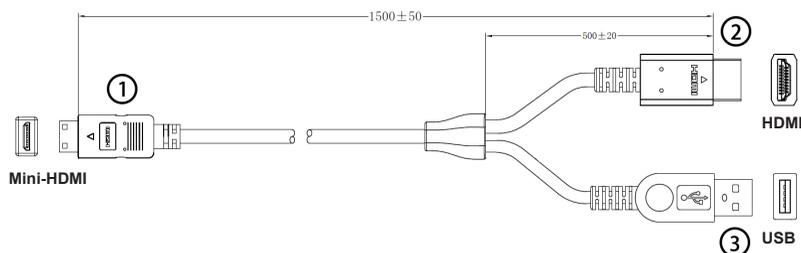
- Video display and gameplay shall be prohibited. Paperlike Pro is for daily office and learning needs. Excessive refresh will reduce Paperlike Pro's working lifetime. Any caused problems due to abusive refresh usage are outside the scope of free warranty.
- For VESA standard hole, make sure to use the VESA screws only provided by DASUNG. Improper screws may penetrate back cover and cause screen damage.
- Please use Paperlike Pro between 15 degrees Celsius and 35 degrees Celsius. Otherwise may cause a significant decrease in performance.
- Please do not use Paperlike Pro in too humid or dusty environment, which reduces the working lifetime of Paperlike Pro.
- Please pay attention to the protection of Paperlike Pro and handle it with care. Please do not use finger or other sharp objects to press or scratch screen. Man-made damage is outside the scope of free warranty.
- Though Paperlike Pro's display effect is as comfortable as paper, staring at the display excessively can also cause asthenopia. Please pay attention to rest.
- Paperlike Pro, as the world's unique E Ink monitor, is our technological achievement and protected by our patents. It is forbidden to copy or use for other commercial purpose. Any offender will be held liable for the violation under the relevant laws or acts in the relevant jurisdiction.

# Paperlike Pro handbook

Paperlike Pro has a mini-HDMI interface. There is a special HDMI+USB cable for video and power.

The cable has three ends:

1. mini-HDMI: Connect with Paperlike Pro.
2. HDMI: Connect to your computer.
3. USB: For power. Connect to 5V/2A DC supplier or USB3.0.



Paperlike Pro supports HDMI 1.4a, with 1600\*1200 physics resolution. It can be set as a normal LCD monitor in your OS setting for resolution, DPI, duplicated/extended and so on. With the button “M” on the monitor, you can switch between Floyd/A2/16 image modes. After you launch the Paperlike Pro software, you can choose A5 in 800\*600.

Display mode	Any resolution	800×600 resolution
A5 display mode		✓
A61 display mode		✓
A2 display mode	✓	✓
Floyd display mode	✓	
15 display mode	✓	

DASUNG Paperlike Pro

We will recommend you install the Paperlike Pro software strongly for the following advantages:

- To protect the screen better.
- To use the A5 at highest speed.
- To condition the contrast for various applications.
- To use Blink Refresh for ghost remove.

## Other interface

- For the computer with DVI/miniDP/DP/Thunderbolt interface, you can use the HDMI adapter.
- For the VGA interface, we do not recommend you to use VGA.

## Paperlike Pro use and settings

### Paperlike Pro

Connect Paperlike Pro to your computer (It will auto-boot. No need to press any button) and launch the Paperlike Pro software. You can use the buttons on the monitor and software for various controls of Paperlike Pro.



#### ■ Button

C: Completely clear the ghost on the screen, the same as the software Hot key refresh (not blink refresh).

M: Switch the image mode. At 800\*600 resolution, the image mode will be switched between A5-A2-A61. At variable resolution, the image mode will be switched between Floyd-A2-16.

Power: Turn the monitor on/off. (There is no need to press it when just power on the Paperlike Pro)

C + M: Restart the monitor. (Restart the monitor when it is abnormal.)

### Setting

There are four parts of software interface:

Part I: Resolution selection

800\*600 A5 mode  
Variable resolution mode

Part II: Mode selection

Floyd mode / A5 mode  
A2 mode  
16 mode / A61 mode

Part III: Setting

Paperlike Pro settings  
Jump to System Display Setting

Part IV: Exit

Exit

## Resolution selection

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In this version, you can set two types of resolution, namely: 800\*600 A5 mode and variable resolution mode. The variable resolution mode includes resolutions between 800\*600 and 1600\*1200. Some computer may not support "800\*600 A5 mode" in duplicated mode.

Note: If you want to select more resolution, please click on the software "Jump to System Display Setting" button, select the resolution in the system settings.

## Mode selection

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800 \* 600 A5 Mode: used at 800\*600 resolution, including three image modes: A5 / A2 / A61.

Variable resolution mode: Resolution between 800\*600 and 1600\*1200, including three image modes, Floyd / A2 / 16.

## Setting

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### Paperlike Pro settings

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- Free Blink refresh (Press Alt+C)
- Timer Blink refresh  second (15s-600s)

Hot Key refresh setting: (as "C" button)

Ctrl+alphabet / Alt+alphabet / Shift+alphabet

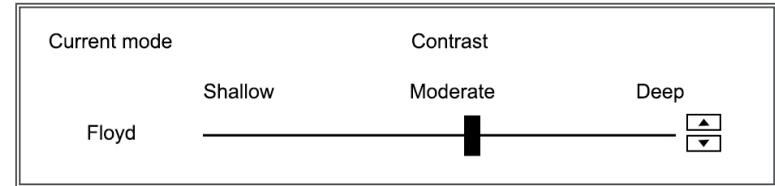
#### ■ Refresh settings

1. Free Blink: Clear the ghost based on your choice. Press Alt+C key to clear the ghost. (Mac OS, press Ctrl+Z)
2. Timer Quick Blink: Ghost removal will be triggered after the specific time you have set.
3. Hot Key refresh, through the Ctrl + letters, Alt + letters and Shift + letters, you can set the Hot Key to refresh the monitor. (Mac OS, press Ctrl + X)

Note: Self-control Quick Blink and Timer Quick Blink can't refresh like Hot Key and C button as 100% clear the ghost. It is recommended to use Hot Key and C button to clear the ghost.

## ■ Contrast setting

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Here, you can adjust the contrast at current mode to suit different application.

## ■ Display optimization (not available in Mac software)

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Remove the Windows system rendering effects (such as fade, text edge shadow effect, etc.), so that the display effect will be more clear and sharper.

## ■ Subject selection (not available in Mac software)

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Switch the default desktop theme, the white desktop theme and the light gray desktop theme. Pure white desktop can reduce ghost and make the display better.

## ■ Boot automatically (not available in Mac software)

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After checking, Paperlike Pro will launch automatically after the computer boot.

## ■ Save settings

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Next time when you start the software, it will automatically run according to the setting and resolution you saved previously.

## ■ Jump to System Display Setting

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After clicking, you can adjust the Paperlike Pro's display resolution, System scaling(DPI), vertical and horizontal screen and so on.

Mac system users please go to the "System Preferences -> Monitor".

## ■ Exit

For Windows, click "Exit" to exit the software. If you click "X", the software will automatically shrink to the tray and continue to run.

For Mac, click "Exit" to exit the software.

## Recommendation

■ In 1600\*1200 resolution, if you feel the words are too small, you can change the zoom of system(DPI) to 125%-175%. In duplicated mode, the DPI will affect both the LCD and Paperlike Pro.

■ As Paperlike Pro is 4:3 (not 16:9 as usual), in some resolutions, there may be black stick at the edge of the screen.

■ Paperlike Pro is the fastest E-ink product which response nearly as quickly as the LCD. However, the refresh rate is still lower than the LCD. You may feel the cursor is not fast enough. We recommend you change the cursor's size and the moving speed.

■ Use together with the LCD. Use more keyboard rather than mouse. (such as "PgUp/PgDn")

■ Plug in the USB before HDMI.

■ Plug out the cable before the PC is power off/ restart.

## Usage flow and fault diagnosis

### 【Indicated light】

Paperlike Pro's indicated light has 3 states:

【Light off】 There is no power. Please connect/re-connect the USB to the power.

【Blue/White】 Paperlike Pro is booting.

【Green】 Paperlike Pro is ready.

If Paperlike Pro has no response, please exit the software, disconnect all the cable. And do the following steps:

<b>Power Off</b>	Exit the software. Disconnect all the cable.
<b>Turn-on Power-1</b>	Only connect the USB to the power. The light will turn from white to blue, then the screen will refresh black/white and stay white. The light will stay green.
	Problem: 1, The light stayed white/blue. 2, The screen did not change. Solve: The power is not stable. Please re-connect the USB or press button "C" + "M".
<b>Turn-on Power-2</b>	Connect the HDMI to the PC. PC's screen may be black for a second. Than you can see the image on Paperlike Pro.
	Problem: There is no image on the Paperlike Pro, and no more monitors can be seen in OS' Display Setting. Solve: HDMI is not stable, reconnect it; click "Detect" in OS' Display Setting Problem: The image on the Paperlike Pro looks strange. Solve: Press "C" button; Change the contrast in software; Reconnect the HDMI cable
<b>Working Stage</b>	It displays well.
	Problem: The image did not move. Solve: Move the mouse or press "C" button to exit the screen saver; Restart the Paperlike Pro software; "C"+"M" to restart the Paperlike Pro

If the diagnosis above does not help, please do not hesitate to contact us at [support@dasung.com](mailto:support@dasung.com)

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