USER GUIDE

LG Digital Signage

(MONITOR SIGNAGE)

Please read the user manual before using this product to ensure safe and convenient use.

Android 9.0

ENGLISH

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To obtain the source code that is contained in this product, under GPL, LGPL, MPL, and other open source licenses that have the obligation to disclose source code, and to access all referred license terms, copyright notices and other relevant documents, please visit *https://opensource.lge.com*.

LG Electronics will also provide open source code to you on CD-ROM for a charge covering the cost of performing such distribution (such as the cost of media, shipping, and handling) upon email request to *opensource@lge.com*.

This offer is valid to anyone in receipt of this information for a period of three years after our last shipment of this product.

SAFETY PRECAUTIONS

The safety precautions are intended to prevent unexpected danger or harm by helping the user to use the product safely and for its intended purpose.

⚠ WARNING

If you ignore the warning message, you may be seriously injured or there is a possibility of accident or death.

⚠ CAUTION

If you ignore the caution message, you may be slightly injured or the product may be damaged.

Model corresponding to sentence color

COMMON	ENCLOSURE	LED

Precautions for the AC Adapter and Power

⚠ WARNING

- Use only the power cord or AC adapter provided or approved by LG Electronics, Inc. If you use another power cord, make sure that it is certified by the national standards. If the power cable is faulty in any way, please contact the manufacturer or the nearest authorized service center for a replacement.
- Operate the display only from a power source(i.e. voltage) indicated in the product specification.
  - Otherwise the product can be damaged, fire can occur or you may be electrocuted. If you are not sure what type of power supply you have, consult a certified installation company.
- Make sure the power cord connect to a properly grounded outlet.
  - If you do not you may be electrocuted or injured or the product can be damaged.
- Insert the power plug or AC adapter firmly so it cannot come loose.
  - Poor connection may cause a fire or electric shock.
- In the presence of thunder and lightning, never touch the power cord and signal cable because it can be very dangerous.
  - It can cause electric shock.
- Be careful not to step or place heavy objects (electronic appliances, clothing, etc.) on the power cord or AC adapter. Additionally, do not bend or pull out the power cord or AC adapter with excessive force.
  - Damaged power cords may cause a fire or electric shock.
- Do not connect power cord or AC adapter damaged with sharp objects to power outlet.
  - You may be electrocuted.
- Do not insert a conductor (like a metal chopstick) into one end of the power cord while the other end is connected to the input terminal on the wall. Additionally, do not touch the power cord right after it is unplugged.
  - You may be electrocuted.
- Do not use with a multi-outlet connected by many electrical product and heating devices. Use an exclusive multi-outlet with a grounding terminal.
  - A fire can break out due to overheating.

- If water or any foreign substance goes inside the product, disconnect the power cord immediately and contact the service center.
  - Otherwise, this may cause a fire or electric shock due to damage to the product.
- Keep the power cord or AC adapter away from any heating devices.
  - The cord coating may melt and cause fire or electric shock.
- Never disassemble, repair or modify the power cord or AC adapter.
  - This may cause a fire or electric shock.
- The main cutoff device is the power cord. Please make sure the product is installed near the wall outlet and that it is easily accessible.
- As long as this unit is connected to the AC wall outlet, it is not disconnected from the AC power source even if the unit is turned off.
- Power consumption will be '0' only when the power plug is unplugged.
- Use the appliance coupler as the disconnect device.

⚠ CAUTION

- If the outlet pins of the power plug or AC adapter is covered with dust, be sure to wipe them and keep them clean.
  - Overheating due to layers of dust may cause a fire or electric shock.
- If the outlet pins of the power plug or AC adapter is covered with water be sure to wipe them and keep them clean. Additionally, Do not touch the power plug or AC adapter with wet hands.
  - This may cause an electric shock.
- Do not turn the product on or off by plugging in or unplugging the power plug from the power outlet. Do not use the power socket as a switch.
  - This may cause an electric shock or product malfunction.
- Do not unplug the power cord while the product is in use.
  - Electrical shock can damage the product.

Precautions for Moving the Product

WARNING

- Contact the service center before moving the product.
  - It may cause electric shock and damage the product.
- Make sure the product is turned off, unplugged, and all cables have been removed before the product is moved.
  - You may be electrocuted or the product can be damaged.
- When moving the product, do not shock or cause an impact on the front panel.
  - You may be electrocuted or the product can be damaged.
- Use the correct number of people according to the weight of the product. (Under 25 Kg per person use lifting equipment when exceeding 100 Kg)
  - If use the damaged product again, contact the service center because it can cause electric shock or fire.
- Do not hold it upside down while holding only the stand. (It is for stand supported models only.)
  - This may cause stand warping, panel damage and other types of product damage.

CAUTION

- Do not dispose of the product-packing box. Use it when moving by putting the product in the box to carry it.

Precautions for Installing the Product

⚠ WARNING

- Contact the service center before installing the product.
  - It can cause electric shock and damage the product.
- Do not drop an object on or impact on the product. Keep out of reach of children and do not place toys or objects near the product to prevent throwing things on the product screen.
  - It can cause injury to human, problem to product and damage the display.
- Do not put heavy objects on, or hang from, the product.
  - If the product collapses or is dropped, you may be injured.
- Do not touch the surface of the product if it overheats.
  - It can cause injury to human.
- Install the product firmly fixed on a floor, wall, etc. to prepare against external impact such as wind and earthquake.
  - You must refer to the manual provided.
- Prevent Children from climbing or hanging on the product.
  - If the product collapses or is dropped, you may be injured.
- Do not install it where there are heating devices such as electrical heaters or lighting equipment.
  - Fire, electrical shock, malfunction may occur.
- Do not install this product by yourself as you may injure yourself or cause damage to the product. Please contact service engineer authorized by service center.
- Do not install this product on a wall if it could be exposed to oil or oil mist.
  - This may damage the product and cause it to fall.
- Do not leave the power or signal cable, etc. on the pathway.
  - This could cause a trip or fall, which could cause an electrical shock, fire, product breakdown, or injury.
- Do not let the product drop when connecting it to an external device connected with a short cable.
  - This may cause injury and damage to the product.
- If you drop the product or the case is broken, turn off the product and unplug the power cord and contact the service center.
  - If you continue to use without taking proper measures, electrical shock or fire can occur.
- Install the product in a dry place where it is not near dust and water. Avoid high temperatures and humidity.
  - This may cause electrical shock, fire or product damage.
- Safely install the product in a place that can hold the weight of the product.
  - A lack of strength may cause the product to fall.
- Take a comfortable and natural position to relax the muscles when working with a product.
- Do not install this product on a location that is wobbly, sloped, unstable, exposed to vibrations, or that does not safely and securely support the product to remain in place. Do not place a cloth or any other item between the product and the furniture supporting the product.
  - The product may fall down or overturn, causing an injury or malfunction.

⚠ CAUTION

- Install the product where no Electromagnetic Interference occurs.
- If you install the product in a place that does not meet the recommended conditions, this may cause serious damage to the product's picture quality, life cycle, and appearance. Please check with service engineer before installing. Please do not install the product in places such as where there is an abundance of fine dust or oil mist, chemical substances are used, exposed to direct sunlight, the temperature is very high or low, the humidity is very high.
- Make sure the product is well ventilated by Installing at a distance (100 mm or more) from the wall.
  - If you install the product too close to the wall, it may be deformed or fire can break out due to internal heat buildup.
- Do not cover the product with a tablecloth or a curtain or other materials (e.g. plastic) while plugged in. Do not block the ventilation hole of the product.
  - The product can be deformed or fire can break out due to overheating inside the product.
- Do not install the product in an area with poor ventilation (e.g. on a bookshelf, in a closet) or outside and avoid placing on cushions or carpets.
  - The product could catch fire due to overheating inside the product.
- Install the product on a flat and stable place that is large enough to support the product.
  - If the product is dropped, you may be injured or the product may be broken.
- When installing the product on a shelf or cabinet, make sure that the bottom end of the product is not protruding forward.
  - The product may fall due to unbalanced center of gravity, which may cause personal injury or damage to the product. Be sure to use cabinets or shelves that fit your product.
- A readily accessible disconnect device shall be incorporated external to the product.
- The components complied with the requirements of IEC 61643-series shall be installed internal or external to this product.
- Set to [Screen Off & Backlight (Outdoor Mode)] when installing outdoors.
  - Enable the [Outdoor Mode] to reduce the risk of the internal humidity and condensation.
- When operating in below zero temperature, the enclosure may not work for up to one hour to raise the internal temperature of the enclosure.

Precautions for Cleaning the Product

⚠ WARNING

- Keep the product clean at all times.
  - If you don't clean the unit for a long time and it becomes covered in dust, it can cause fire or product damage.
- When you need to clean the inside of the product, you must contact the service center.
  - Otherwise, cleaning without support may cause a fire, electric shock, or damage to the product.
- When cleaning the product, unplug the power cord and wipe gently with a soft cloth to prevent scratching.
  - An electric shock may occur or damage to the screen if its scratched.
- When you want to clean the front frame, spray water onto a soft cloth 2 to 4 times and wipe in one direction only. (Not for LED models)
  - Too much moisture may cause staining.
- Do not physically come in contact with the screen of the LED Package.
  - This may cause damage to the product.
- To clean the product, use an air gun to lightly remove dust from the front frame and the screen.
  - If there are foreign substances in between the LEDs on the screen, it may cause a defect on the screen.

⚠ CAUTION

- When cleaning the product or the screen, unplug the power cord and wipe it gently with a soft cloth. Do not spray water or other liquids directly on the product. Especially, do not clean your product with chemicals including glass cleaner, any type of air freshener, insecticide, lubricants, wax (car, industrial), abrasive, thinner, benzene, alcohol, etc., which can damage the product or its panel.
  - This may result in fire, electric shock or product damage (deformation, corrosion or breakage).

Precautions for Using the Product

⚠ WARNING

- Do not use the product in any environment with excessively high temperatures or humidity.
  - It may cause electrical shock or damage the product.
- If you use the product for a long period of time, take a rest from time to time to protect your vision.
  - Extended viewing could result in impaired vision.
- Listening at high volume or using for a long time can cause damage to your hearing.
- In the event that liquid or a foreign object falls into the product, please switch it off and unplug it from the wall outlet and contact the service center.
  - Otherwise, the product may cause fire or electric shock.
- In the event that no image appears on the screen or no sound is heard, stop using the product. Switch it off immediately, unplug it from the power outlet and contact the service center.
  - Otherwise, the product may cause fire or electric shock.
- Do not drop an object or impact on the product or screen.
  - It can cause injury to human, problem to product and damage the screen.
- If you can smell smoke or other odors or hear a strange sound, unplug the power cord and contact the service center.
  - If you continue to use the product without taking proper measures, it may cause electrical shock or fire.
- Do not attempt to disassemble, repair or modify the product yourself. Please contact service center if you need to repair it.
  - Fire or electric shock can occur.
- Do not place objects filled with liquids such as vases, cups etc. on or over the product to prevent liquid from entering the product.
  - Failure to do so may result in fire, electric shock, malfunction or deformation.
- Do not push hard on or scratch the product's surface with your hands or sharp objects, such as nails, pencils or pens. Do not shock or scratch the front and sides of the screen with metallic objects.
  - This may damage the products and cause it to malfunction.
- Do not touch the product if it has been exposed to sunlight or an intense light because it could be hot.

- Do not use high voltage electrical goods near the product (e.g., a bug zapper).
  - This may result in product malfunction if it receives an electrical shock.
- If there is a gas leak, do not touch the outlet, and open the windows for ventilation.
  - Otherwise, the product may cause fire or electric shock.
- If you drop the product or the case is broken, turn off the product and unplug the power cord.
  - If you continue to use without taking proper measures, electrical shock or fire can occur. Contact the service center.
- Keep small accessories out of the reach of children.
  - If a child swallows it, consult a doctor immediately.
- Keep out of reach of children from the product. Also, do not throw toys or objects at the product or screen.
  - It can cause injury to human, problem to product and damage the screen.
- All the power sources must be disconnected by removing the power cables to remove all power from the unit.

⚠ CAUTION

- This panel is an advanced product that contains millions of pixels. You may occasionally see pixel spots when viewing the screen. Since these deactivated pixels are not a defect, the performance and reliability of the product is not affected.
- Do not put or store inflammable substances near the product.
  - There is a danger of explosion or fire.
- Keep the proper distance from the product.
  - It can cause damage to your vision if you look at the product too closely.
- Set the appropriate resolution and frequency by products.
  - It can cause damage to your vision.
- Take a regular break when working with the product for a long time.

Precautions for Using the Remote Control

WARNING

- Avoid places with high humidity.
  - It may cause electrical shock or damage the product.
- Do not expose batteries to excessive heat, such as direct sunlight, open fireplace, and electric heaters.
  - It may cause fire and you may be injured.
- Make sure that children do not swallow the remote control batteries when you replace them. Keep batteries out of reach of children.
  - If a child swallows a battery, consult a doctor immediately.
- Do not dispose of batteries in a fire.
  - Please dispose batteries at a local recycling center or a retail store that handles batteries.
- Used batteries, which include rechargeable batteries, should be recycled separately from waste.
  - Please dispose used batteries and rechargeable batteries at a local recycling center or a retail store that handles batteries.

CAUTION

- Do not short circuit and disassemble of batteries.
  - It may cause electrical shock or fire.
- The remote control may not function properly in sunlight or under a strong lamp. Move the product if it is being used in these conditions.
- Check if there is any obstacle between the product and the remote control.
- Do not mix new batteries with old batteries.
  - Overheating or leaking batteries may cause fire or electric shock.
- Only use the specified type of battery. Do not insert batteries that are not rechargeable into the charger.
  - Overheating or leaking batteries may cause fire or electric shock.

Precautions for Experiencing Image Retention

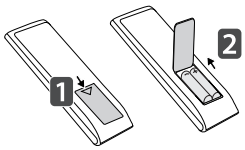
- Displaying a still image for a prolonged period of time may cause damage to the screen, resulting in image retention. Most third-party products have the same issue. The resulting damage is not covered by the product warranty.
  - Use a screen saver when using the monitor for a prolonged period of time.

Product Disposal

- Do not dispose of this product with general household waste.
- Disposal of this product must be carried out in accordance to the regulations of your local authority.

USING THE REMOTE CONTROL

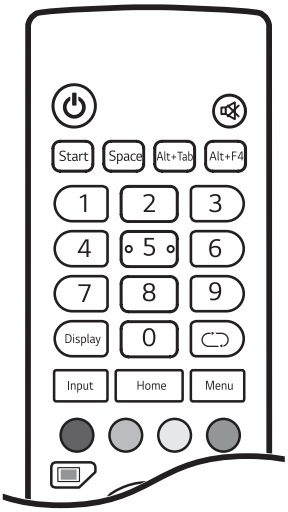
The descriptions in this manual are based on the buttons on the remote control. Please read this manual carefully to use the monitor correctly. To install batteries, open the battery cover, place batteries (1.5 V AAA) matching ⊕ and ⊖ terminals to the labels inside the compartment, and close the battery cover. To remove the batteries, perform the installation actions in reverse. The illustrations may differ from the actual accessories.



⚠ CAUTION

- Do not mix old and new batteries, as this may damage the remote control.
- Be sure to point the remote control toward the remote control sensor on the monitor.
- Some features of the remote control may not be supported in certain models.
- The product's internal and external batteries should not be exposed to excessive heat such as direct sunlight, fire, or the like.

* Depending on model



(POWER) Turns the monitor on or off.

(MUTE) Mutes all sounds.

Start (Built-in computer) Works the same way as the Window key.

Space (Built-in computer) Works the same way as the Space key.

Alt+Tab (Built-in computer) Works the same way as the Alt+Tab key.

Alt+F4 (Built-in computer) Works the same way as the Alt+F4 key.

Number buttons Enters numerical characters depending upon the setting.

Display Displays the currently applied external input on the screen.

Input Displays the external input settings window.

Home Returns to the default screen.

The function is not supported in this model.

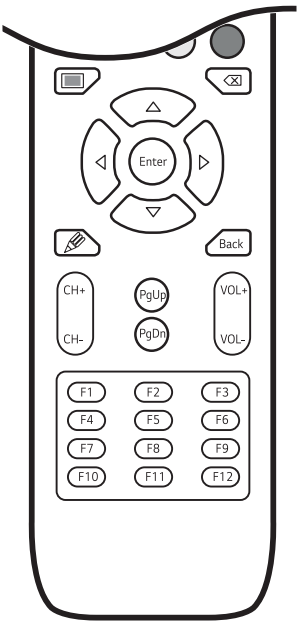
Menu Displays the general settings window.

Enables or disables the power button or touch function of the front of the product.

Enables or disables the power button on the front of the product.

Enables or disables the touch function.

Turns on or off the function to pause the screen.



Turns on or off the whole screen.

(Built-in computer) Works the same way as the Backspace key.

Navigation Buttons Scrolls through menus or options.

Enter Selects menus or options and confirms your input.

Turns the note feature on.

Back Allows you to move back one step in the user interaction function.

CH+/- Scrolls through the saved programmes/channels.

PgUp Moves to the top of the screen.

PgDn Moves to the bottom of the screen.

VOL+/- Adjusts the volume.

Function Keys (Built-in computer) Works the same way as the Function key.

MAKING CONNECTIONS

You can connect various external devices to your monitor. Change the input mode and select the external device you want to connect.

For more information about external device connections, see the user manual provided with each device.

Connecting to a PC

Some of the cables are not provided.

This monitor supports the Plug and Play* feature.

* Plug and Play: a feature that enables a PC to recognize devices attached by the user without device configuration or user intervention when powering up.

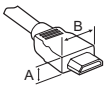
External Device Connection

Connect a HD receiver, DVD, or VCR player to the monitor and select an appropriate input mode.

Some of the cables are not provided. For the best picture and sound quality, connecting external devices to your monitor using HDMI cables is recommended.

NOTE

- For the best image quality, using the monitor with HDMI connection is recommended.
- To comply with the standard specifications of the product, use a shielded interface cable with a ferrite core, such as a DVI-D cable.
- If you turn the monitor on when the set is cold, the screen may flicker. This is normal.
- Sometimes red, green, or blue spots may appear on the screen. This is normal.
- Use a High Speed HDMI®/™ cable. (3 m or less)
- Use a certified cable with the HDMI logo attached. If you do not use a certified HDMI cable, the screen may not display or a connection error may occur.
- Recommended HDMI Cable Types
  - High Speed HDMI®/™ Cable
  - High Speed HDMI®/™ Cable with Ethernet



HDMI : A ≦ 11.65 mm ; B ≦ 20.65 mm

USB : A ≦ 8.3 mm ; B ≦ 16 mm

- If you cannot hear any sound in HDMI mode please check your PC settings. Some PCs require you to manually change the default audio output to HDMI.
- If you want to use HDMI-PC mode, you must set your PC/DTV to PC mode.
- You may experience compatibility issues if you use HDMI-PC mode.
- Make sure the power cable is disconnected.
- If you connect a gaming device to the monitor, use the cable provided with the gaming device.
- The contents from the HDMI INPUT port cannot be transferred to the HDMI OUT port. (HDMI OUT port supports only Android/VGA/USB.)
- A specific external input terminal and a touch-out terminal are linked. When using the touch-out terminal, connect the connected terminals together. (Touch model)
  - HDMI1/HDMI2: Touch 1
  - HDMI3/VGA: Touch 2

CAUTION

- Connect the signal input cable and tighten it by turning the screws clockwise.
- Do not press the screen with your finger for a prolonged period as this may result in temporary distortion on the screen.
- Avoid placing a reflective object in front of the set at a distance of 50 cm or less.
- Avoid displaying static images on the screen for a long period of time to prevent image retention. Use a screensaver if possible.
- A wireless communication device near your monitor can affect the image.

NOTE

- Software-related content may be changed without prior notice due to upgrades of the product functions.
- Some features described in the User Manual may not be supported in certain models and countries.
- SNMP 2.0 is supported.

INTRODUCTION (IFP OS)

The Solution of IFP OS for Education:

- Brand new OS launcher, crystal clear functional zones, efficient shortcuts
- New design of System bar, centralized control, supports customization
- Efficient and flexible multi-window operation, unique solution for IFP
- Smarter Note supports writing recognition, graphic association, keyword searching, smart Excel and handwriting beautification
- More shortcuts tools to support teachers to provide a better lesson interaction
- More flexible screen sharing, supports client-less mirroring, custom window screen sharing and desktop synchronization

⚠ CAUTION

- The basic UI/UX, app configuration, and menu configuration of this manual and the product may be different.

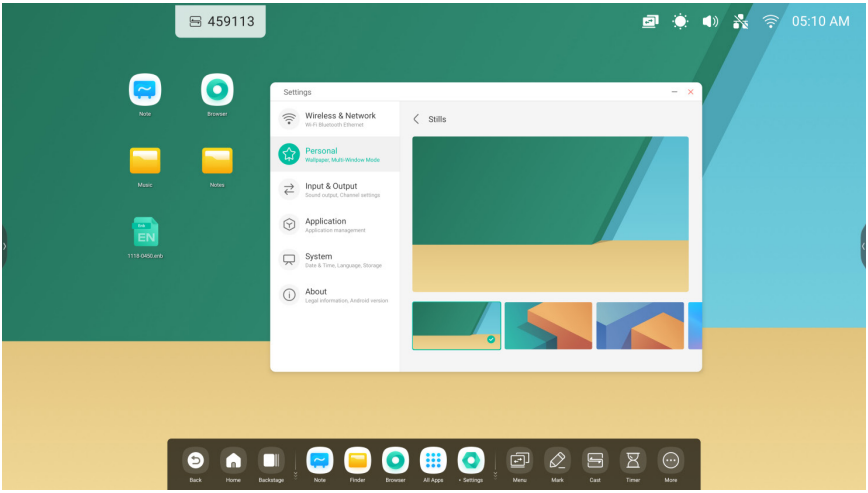
[Launcher]

In order to allow teachers to easily and efficiently start applications, files and web pages commonly used in teaching, the General Education [Launcher] has added a shortcuts area for teachers in functional zones. Teachers can drag/send frequently used applications, folders/files, and web pages to the [Launcher] for quick start. In addition, we have customized a variety of wallpapers for teachers to use.

1 [Launcher] is displayed by default on Android.

2 Create and manage the shortcuts for apps,files,websites in [Launcher]:

3 Customize the colorful wallpapers:



[Status Bar]

The upper right area is the top status bar, which includes:

[Touch Menu]

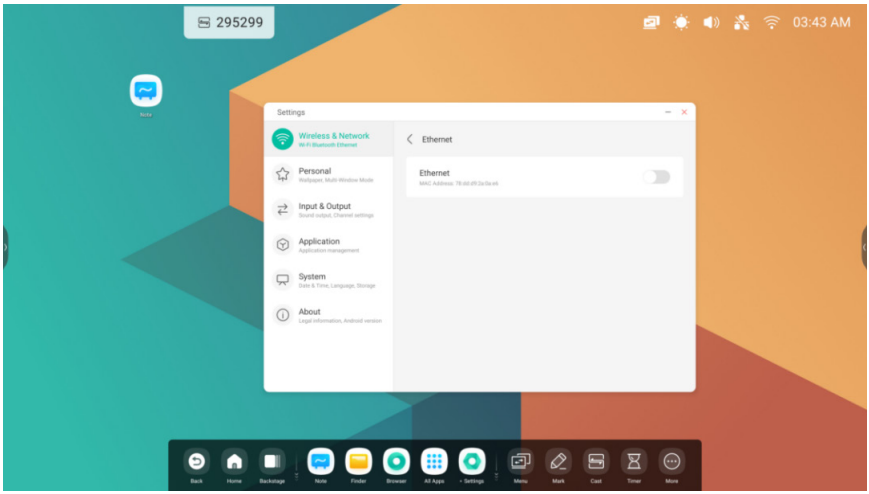
Click the icon will open [Touch Menu] that you can switch the input sources.

[Brightness and Sound]

Click the icon will open [Touch Menu] that you can customize the adjustment.

[Ethernet]

Click the icon on the top right to open the [Settings] → [Ethernet] page.

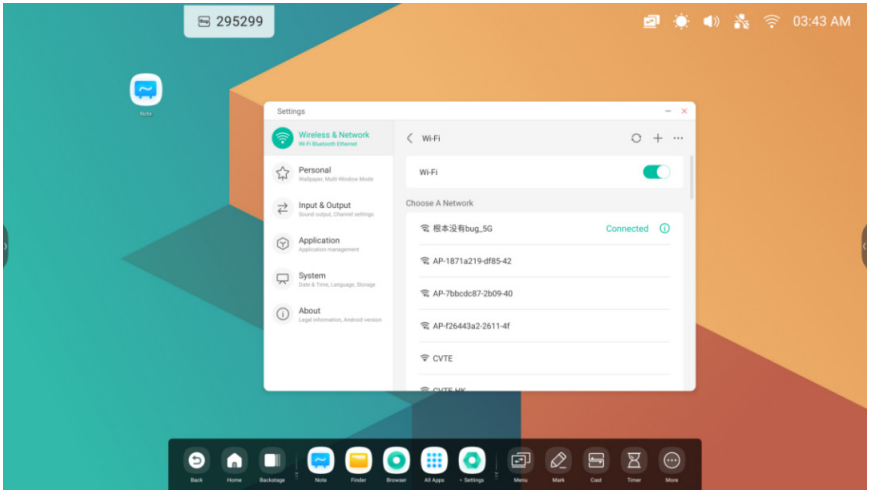


[Hotspot]

When you click the icon, the [Settings] → [Hotspot] page, where you can set up a hotspot, is opened.

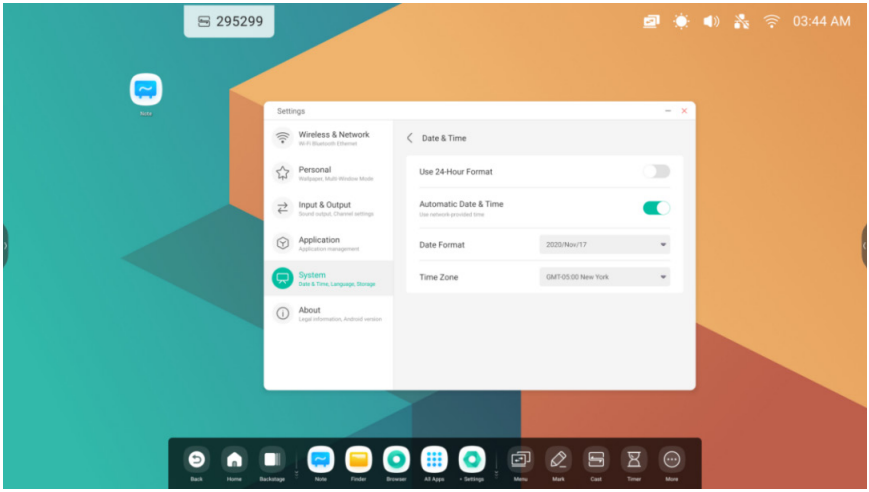
[Wifi]

If you insert a wifi module, there will be a icon on the upper right corner. Click it will open the [Settings] → [Wi-Fi] page.



[Time]

Click the 03:41 AM will open the [Settings] → [Date & Time] page.



[Shortcut Area]

The middle area is the shortcut entry storage area, the types include:

Application Shortcut

Drag the icon from [All Apps] to the [Launcher] to create a shortcut.

Step 1: Drag the app icons from [All Apps].

Step 2: Drag to the storage area where you want to place it.

Step 3: Create shortcut successfully after raising hand.

The application can be quickly launched by clicking the icon now.

[File Shortcut]

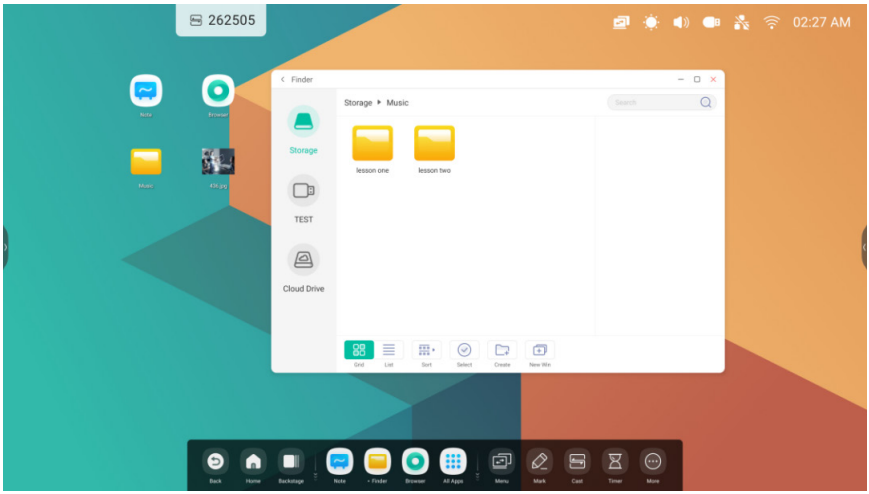
Drag or send files/ folders from [Finder] to [Launcher] to create.

Step 1: Drag the files/ folders from [Finder].

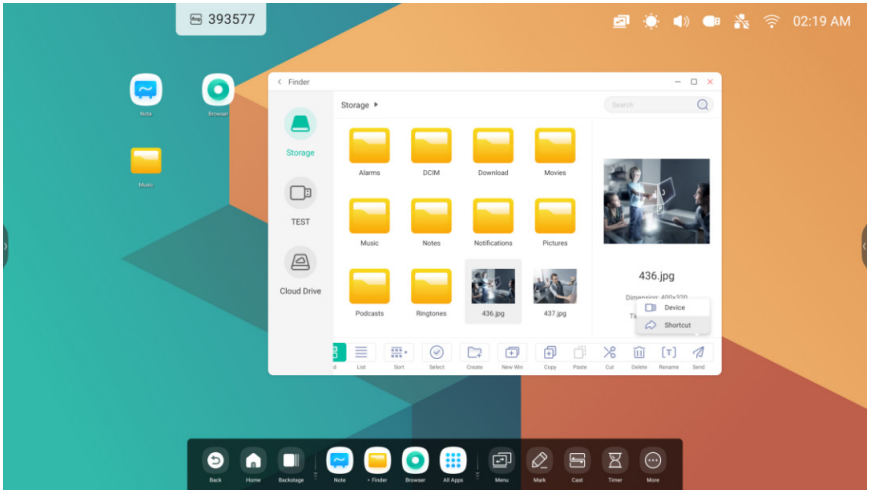
Step 2: Drag to the storage area where you want to place it.

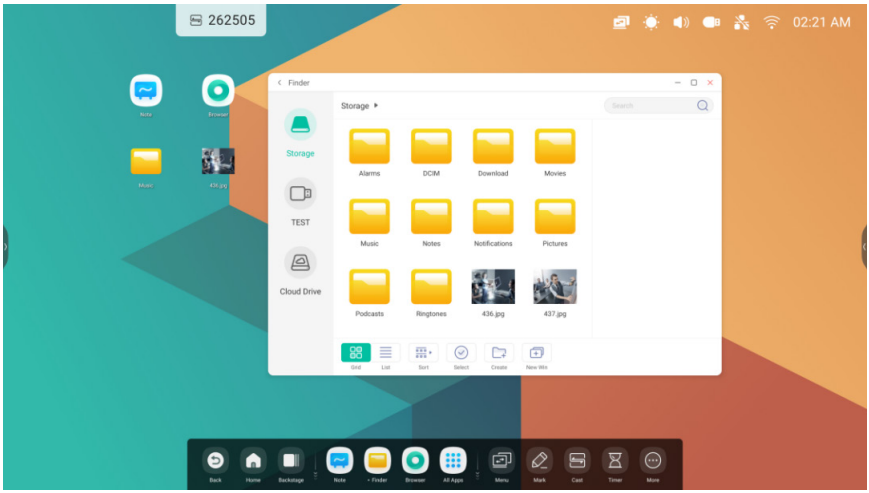
Step 3: Create shortcut successfully after raising hand.

The folder path can be quickly open by clicking the icon now.



Tips 1: There is another way to create.
Select the file → click on the bottom [Send] → select [Shortcut] to create.





The file can be quickly open by clicking the icon now.

Tips 2: Long press the icon to quickly find the source file path.

[USB Shortcut]

If you insert a USB flash drive, there will be a shortcut entry in [Launcher]. Click it will open your USB flash drive in the [Finder].

[Shortcut Management]

Long press or drag shortcuts to manage:

[Remove]

Long press the icon to pop up the menu bar, click [Remove] to remove the shortcut entry in [Launcher].

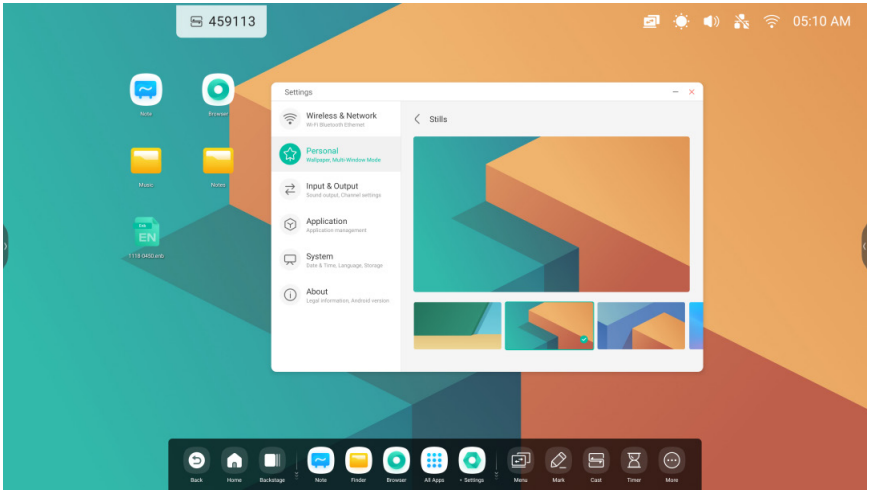
[Change Position]

Long press and drag to change the position in [Launcher].

[Wallpaper]

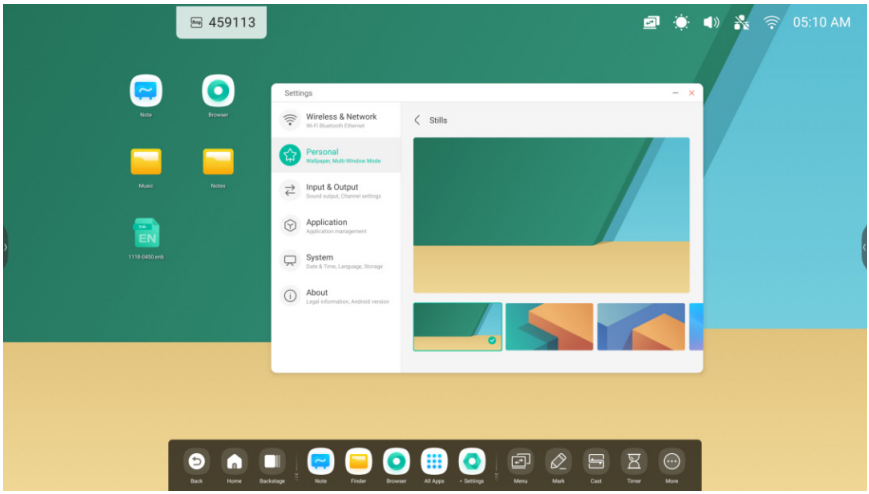
[Launcher] has customized wallpapers for teachers to choose:

[Default Wallpaper]



[Custom Wallpaper]

Open [Settings] → [Personal] → [Wallpaper] → [Stills] page to set the wallpapers.



[System Bar]

The [System Bar] provides teachers with a solution for centralized and efficient managing and switching tasks, and using tools in multiple scenarios. It mainly integrates three parts of the content: task manager, application manager, and tool manager, so that teachers can uniformly enable items in this integrator. In the same time, it also supports teachers to customize configuration and management according to lesson delivering habits. By default, we provide shortcuts at the bottom and both sides for the teacher, and the teacher can also configure the hide/ show in [Settings] according to user habits.

1. Centrally control the progress of input sources, tasks, apps and tools

Input source & running apps

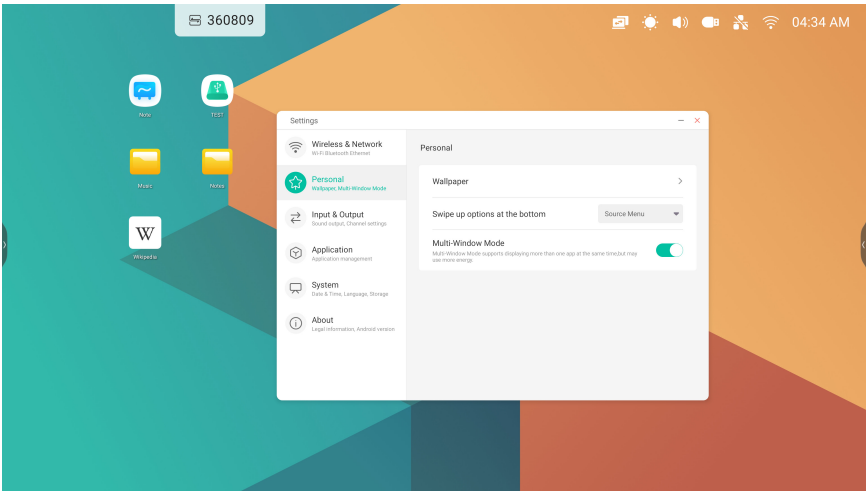
[All Apps]

All tools

2. Customize the display of [System Bar], including content and position

Customize content

Customize position



[Navigation Bar]

Task manager in [System Bar], control the progress of the tasks here:

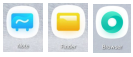
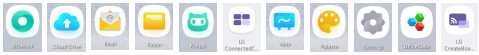
Content	Description
[Back]	Click to return to the last operating interface.
[Home]	Click to return to the desktop.
[Backstage]	Click to pop out the window and display the recent apps and input sources.

[Backstage]

You can delete all the progresses by one key [Clean All] or delete progresses by dragging up. You also can click one of the processes to access the process.

[Application Center]

An app launcher and manager in the [System Bar]. All apps can be located here.

Content	Description
[Default Shortcut]	
	The [System Bar] shows the following default apps: [Note], [Finder], [Browser] Click the shortcut to start a process.
[All Apps]	
	The apps installed by default include: [Browser], [Cloud Drive], [Email], [Finder], [Keeper], [LG ConnectedCare DMS], [Note], [Palette], [Settings], [OfficeSuite], [LG CreateBoard Share]
Apps in Use	Click a currently running app and continue the process.

[Default Shortcut]

Supports to create 4 commonly used app shortcuts in [System Bar]. Teachers can drag and drop other apps shortcuts from all apps to replace.

Step 1: Click [All Apps] and find the app you want.

Step 2: Long press and drag it.

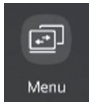
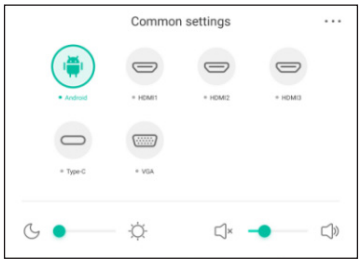
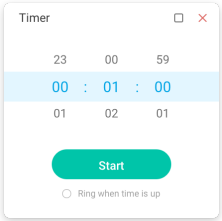
Step 3: Move to the [System Bar] to create a shortcut in the default shortcut area.

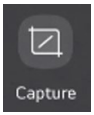
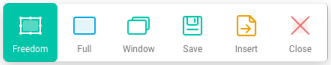
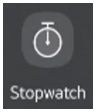
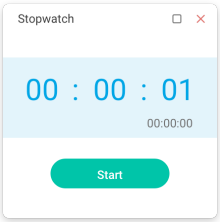
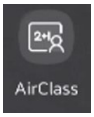
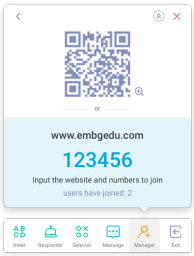
[Small Tools]

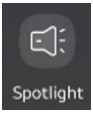
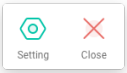
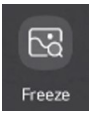
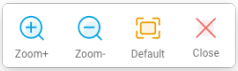
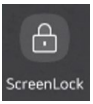
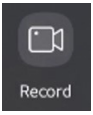
With the tools, the teacher can enhance interactive learning with students for a fun experience:

Tools List

Including [Menu], [Annotation], [CountDown], [Capture], [Stopwatch], [AirClass], [Spotlight], [Freeze], [ScreenLock] and [Record].

<table>
<tr><th>Icon</th><th>Function</th><th>Description</th></tr>
<tr><td rowspan="2"> 
</td><td rowspan="2">[Menu]</td><td> 
</td></tr>
<tr><td>1 Displays all input sources, including [PC], [Android], [HDMI], [Type-C] and [VGA].
2 Displays more advanced settings, including [Audio], [Screen], [Display] and [Adjust] for the input source.</td></tr>
<tr><td rowspan="2">
</td><td rowspan="2">[Annotation]</td><td>
</td></tr>
<tr><td>1 Empowers teachers to write on top of any app, video, website, document, or image.
2 Whether using other input sources, or Android, teacher can take notes on top of any onscreen content.</td></tr>
<tr><td rowspan="2">
</td><td rowspan="2">[CountDown]</td><td> 
</td></tr>
<tr><td>A tool which counts down from a specified time interval.</td></tr>
</table>

Icon	Function	Description
	[Capture]	 1 Teachers can capture screen shots of anything on the screen, including content from apps, websites, and videos. 2 Teacher can select [Freedom], [Full] and [Window] mode. 3 Support to insert whiteboard for editing.
	[Stopwatch]	 A tool which counts upwards from zero for measuring elapsed time.
	[AirClass]	 1 Teachers can invite students to join the interactive activities through QR code or IP address. 2 It include voter, responder, selector, message and other rich activities.

Icon	Function	Description
	[Spotlight]	 Teachers can use this function to focus on specific areas of the screen.
	[Freeze]	 Teacher can freeze and zoom the current content on the screen.
	[ScreenLock]	Teacher can lock the screen with the [ScreenLock], and unlock it by entering the password, which is set in [Settings].
	[Record]	Record the screen itself.

[Tools Customize]

Supports to create 4 commonly used small tools in [System Bar] Teachers can add other tools from [More] to replace.
Step 1: Click [Edit] or long press the tools icon into editing state.

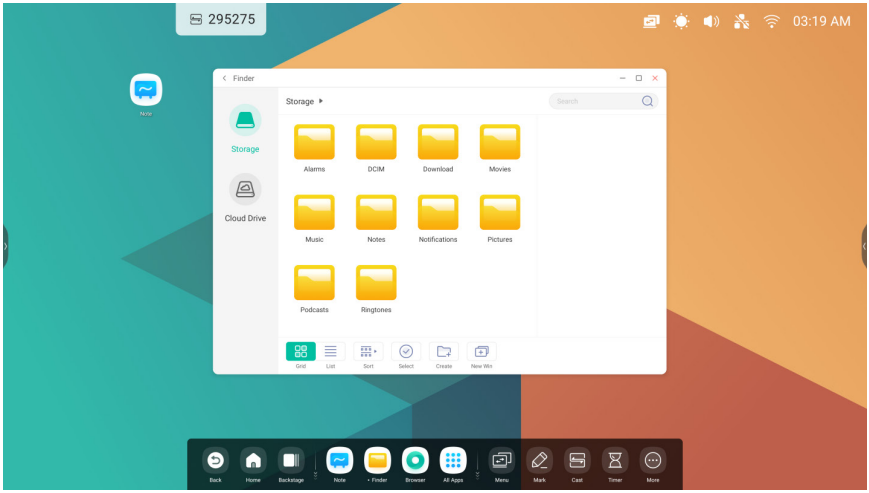
Step 2: Click - to remove the display in [System Bar].

Click + to add the display in [System Bar].

[System Bar Settings]

By default, the entrance to the bottom and sides is provided

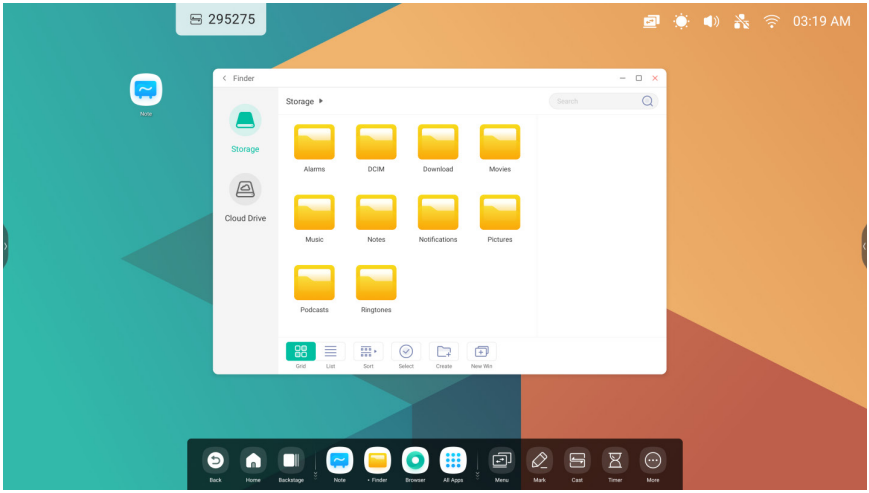
Teachers can also configure hide/ display in settings according to their usage habits



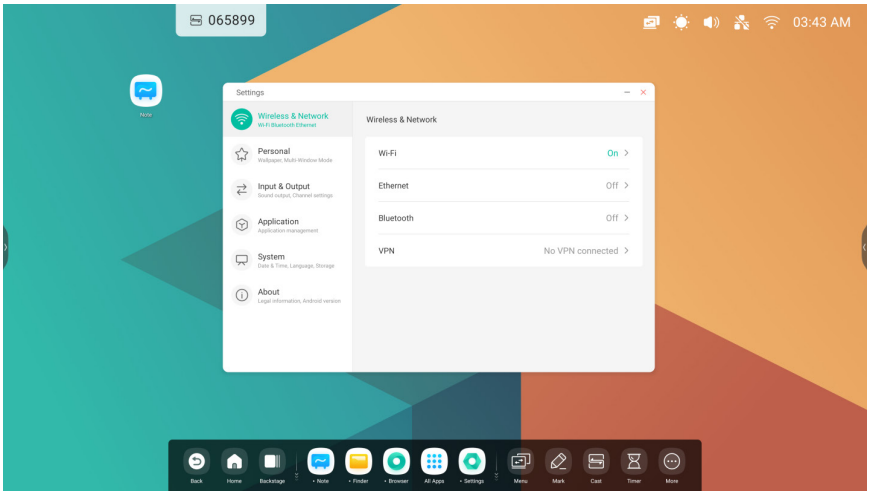
[Multi-Windows]

[Multi-Windows] provides teachers with a new operation solution on IFP. Through the windowed content display, the teacher can still read the content information efficiently in the visible range while standing in front of the big screen. Through windowed application management, the arm can freely and comfortably control the display size and position of the application window. Through the solution of multi-task operation, teachers can display and use multiple applications and tools at the same time, for example, while demonstrating the content of the courseware while writing the key points on the blackboard. In addition, teachers can also drag and drop content across applications to exchange information between different applications more conveniently and efficiently.

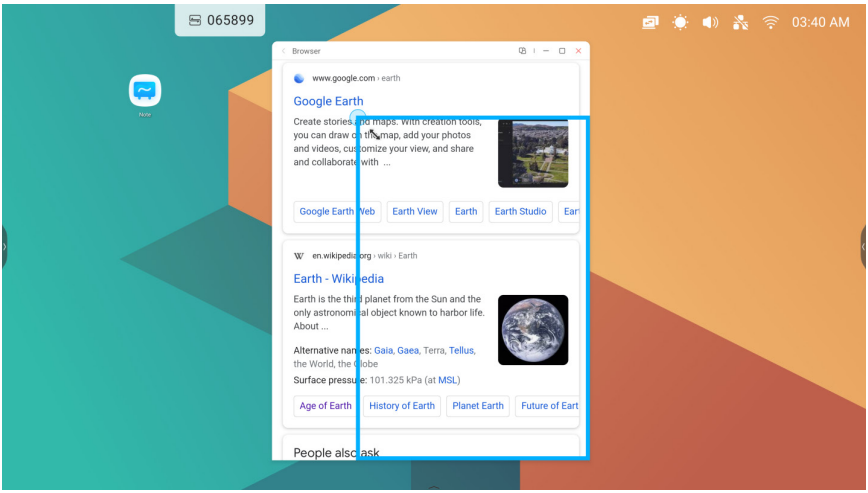
1 A large-screen solution that is more suitable for teachers to read:
Example 1: [Finder] for Windows mode:



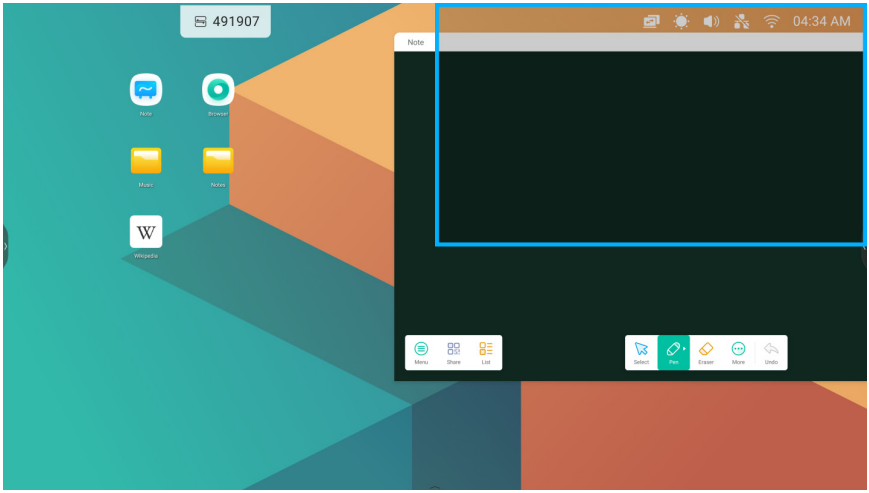
Example 2: [Settings] for Windows mode:



2 Teachers can easily control the window display size and position:
Example 1: Drag the edge to change the size of the window:

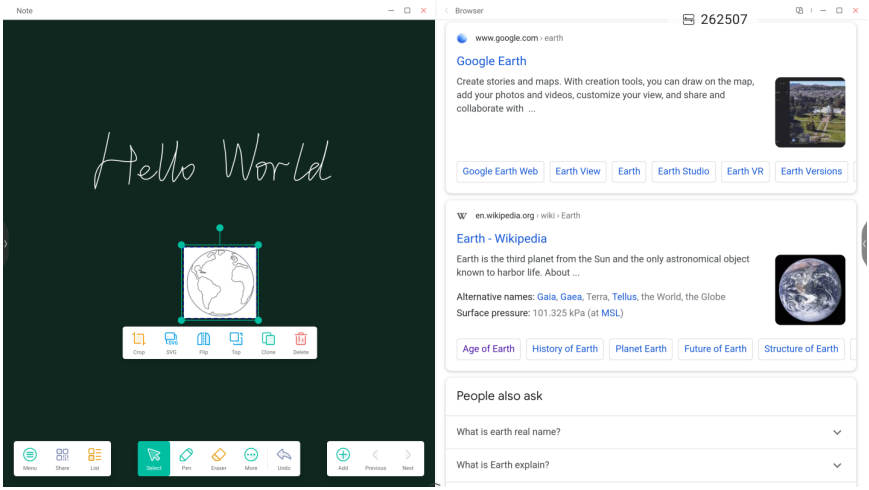


Example 2: Drag the top bar of the Windows to the edge of the screen to quickly enter 1/4 size:

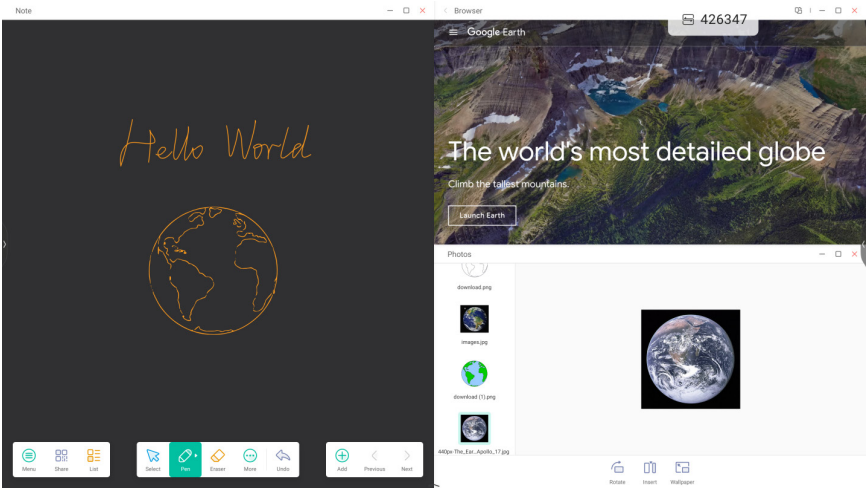


3 Show more apps and tools on the screen:

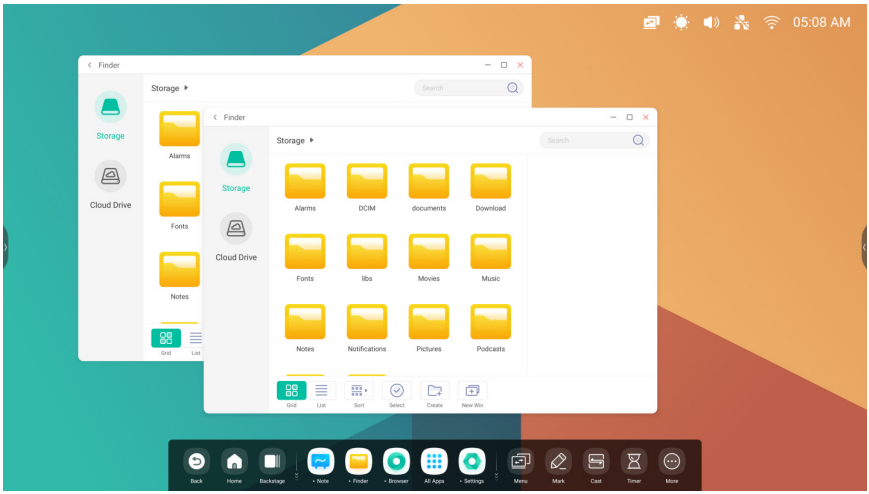
Example 1: Efficiently display the content while recording on [Note]:



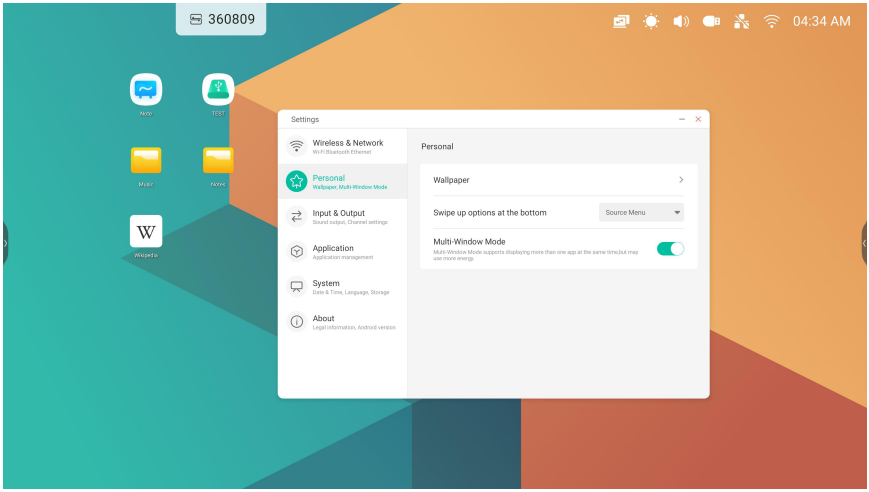
Example 2: Three apps are displayed on the screen at the same time:



Tips: [Finder] and [Browser] support new windows:



4 [Multi-Window Mode]:

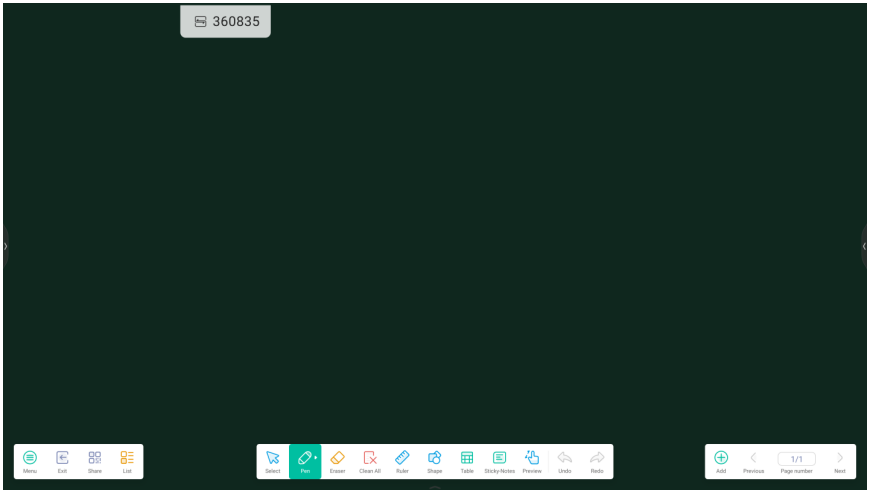


[All Apps]

A variety of custom IFP applications are available to use, depending on the teaching scenarios. The default apps include [Note], [Palette], [Finder], [Browser], [Settings], [Cloud Drive], [OfficeSuite], [Photo], [Music], [Video], [Keeper], [Email], [LG ConnectedCare DMS], [LG CreateBoard Share].

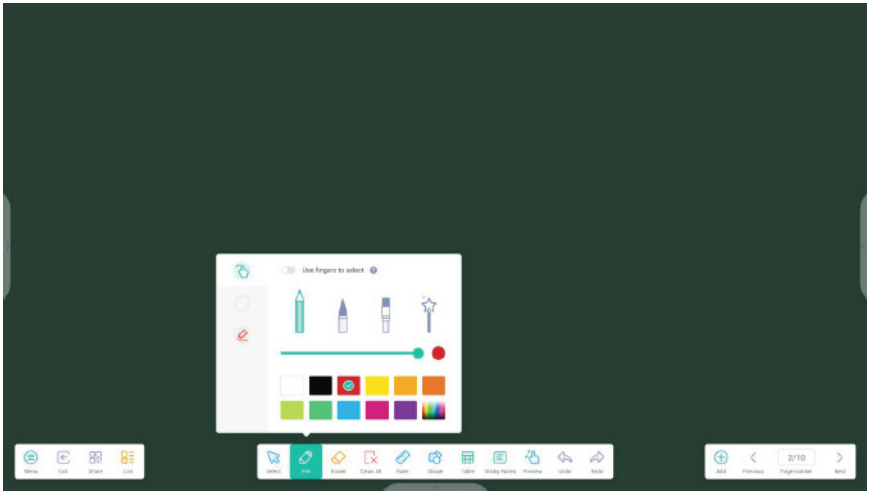
[Note]

Click to open the [Note].



[Pen]

[Note] offers a wide range of colours and pen styles for users to choose from.
The Dual Pen function enables you to designate two colours and use the writing in the [Note] app.

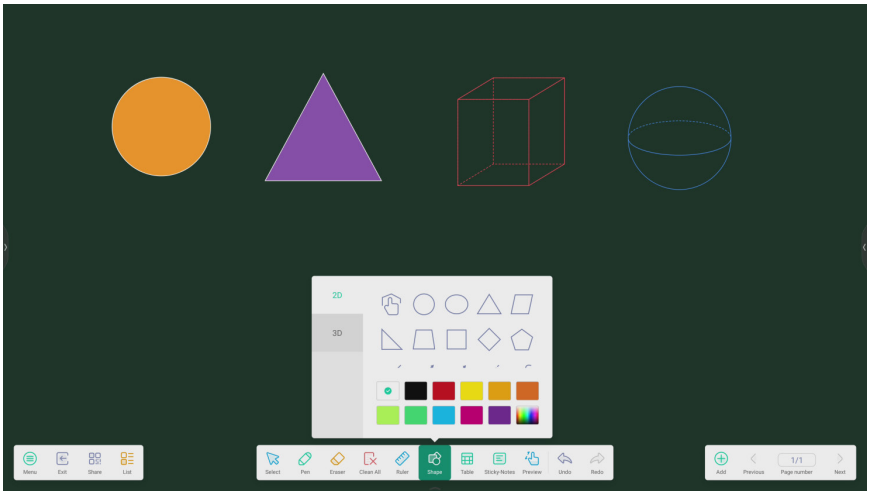


⚠ CAUTION

- With the Dual Pen feature, you can designate two colors for use with the pen, enabling writing and drawing.
- The initial setting for the dual pen is Off. You can change to use a dual pen and not the single pen in the settings menu. (Bottom left [Menu] → [Settings] → Dual pen)
- When using a dual pen, different colors may be displayed depending on the angle the pen comes into contact with the screen.

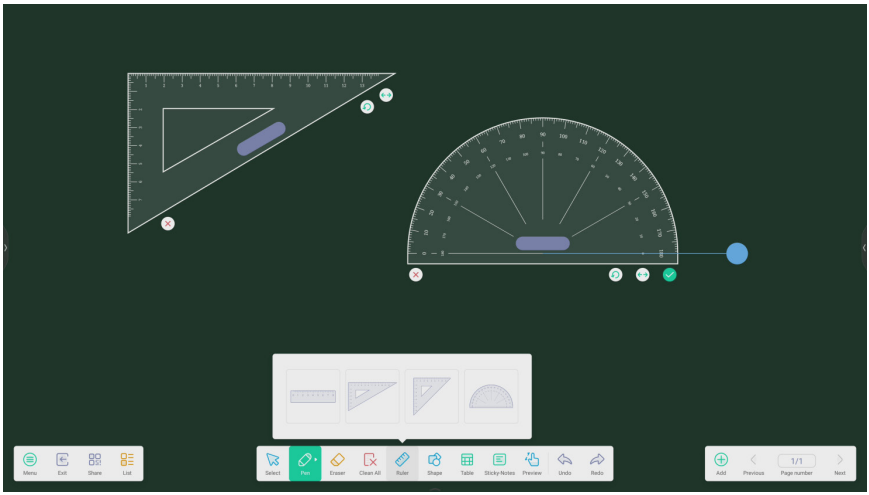
[Shape]

Note has a wealth of built-in shapes, including two-dimensional plane shapes and three-dimensional geometric shapes, which are convenient for teachers to quickly show the shapes to students.



[Ruler]

Note's ruler tool eliminates the need for teachers to use physical ruler tools, and can also assist in teaching in [Note].

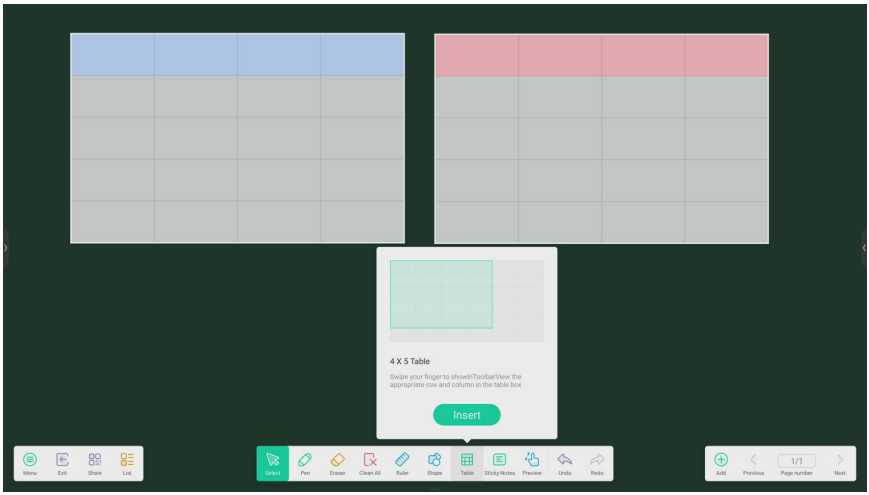


[Sticky Notes]

The [Sticky Notes] tool in [Note] simulates the real scenes of real life, pin important information to the canvas for users to view, and can also be used as a brainstorming tool.

[Table]

Note supports creating multiple tables and displaying them simultaneously.



The Extension Function of the Pen

After selecting the handwriting, the handwriting can be intelligently recognized as the beautified font, and the handwriting can be searched and mirrored.

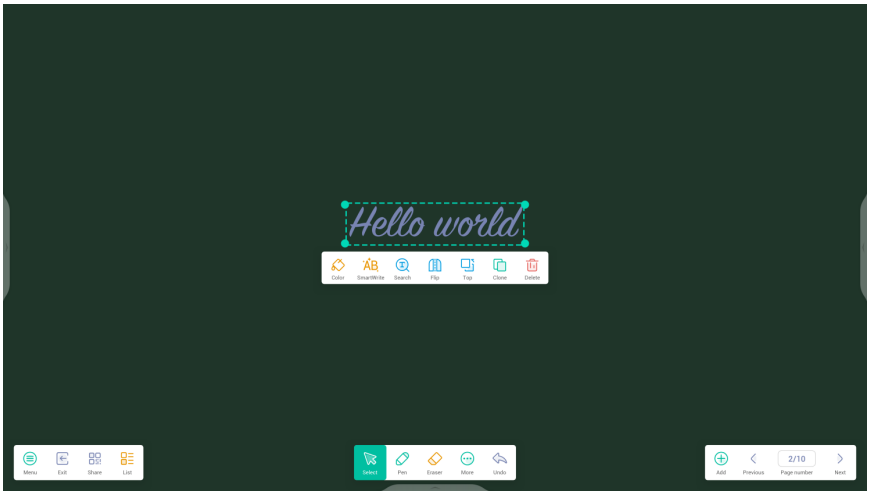
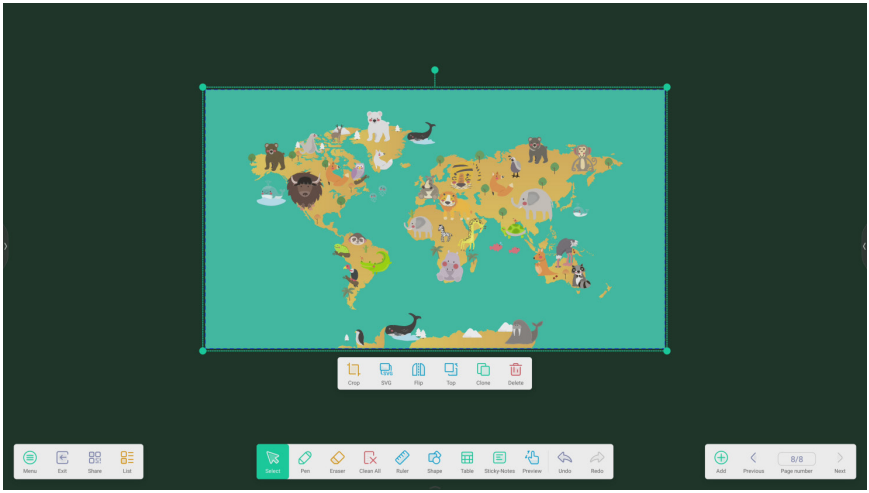


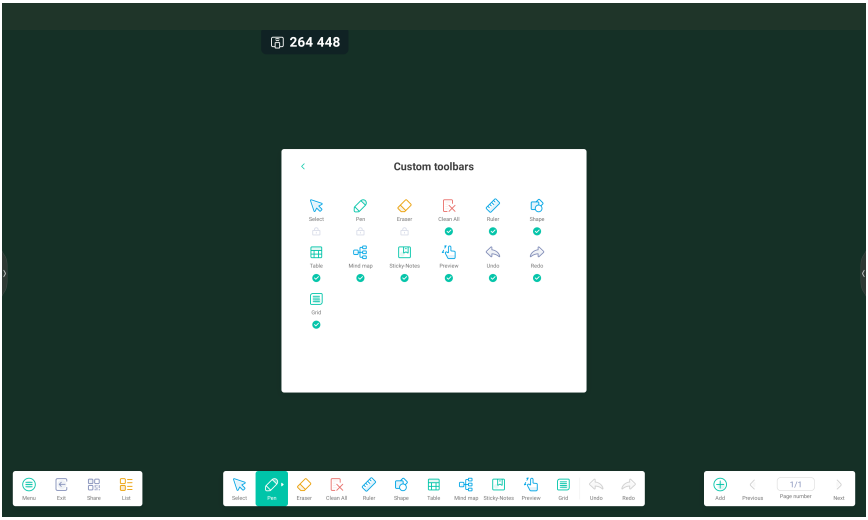
Image Expansion Function

After selecting the image, the image can be transformed into vector image, and the image can be mirrored.



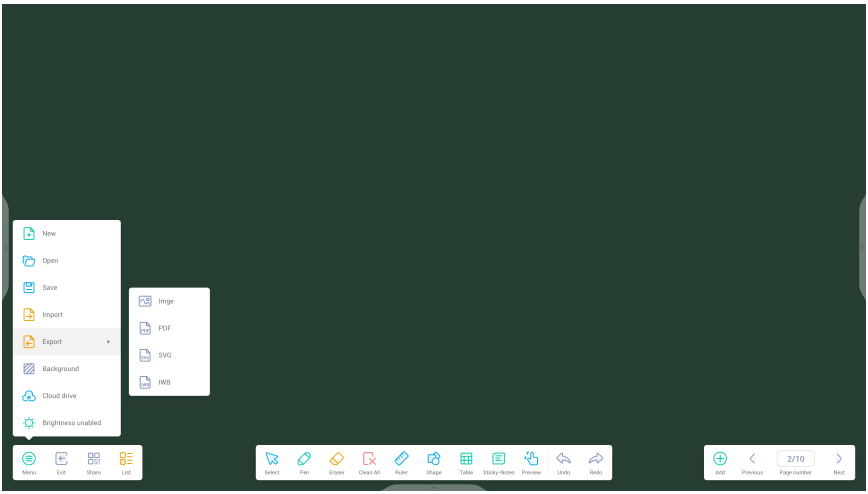
Custom Toolbar

When [Note] is full screen, you can choose which tools appear in the toolbar and which to hide in the submenu in [More].



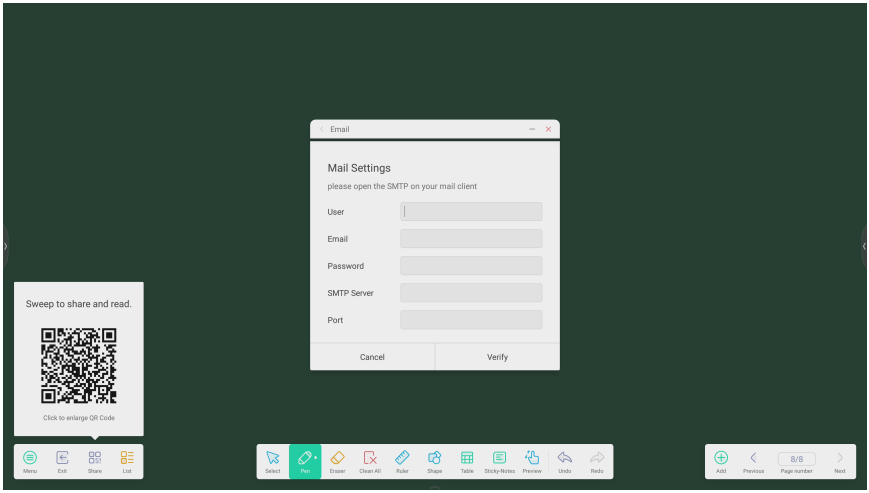
Import and Export Files in Multiple Formats

Note supports importing multiple file formats and exporting files into multiple formats.



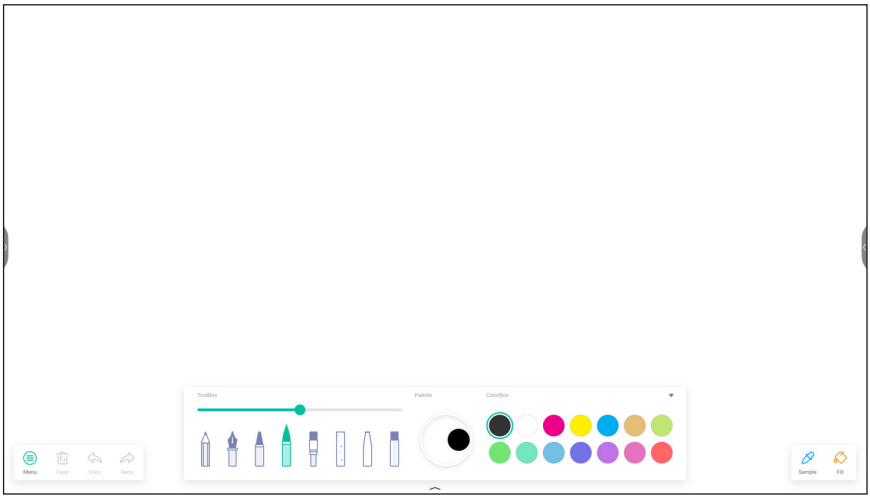
Multiple Ways to Save Files

In addition to saving files to the local system and U disk, [Note] also supports scanning files with mobile phones for saving or sending files to emails.



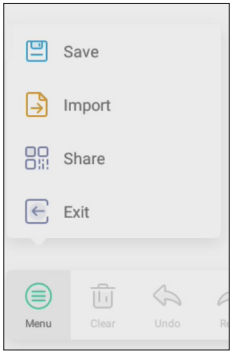
[Palette]

Click to open the [Palette].



[Menu]

Click to open the [Menu] window.



Menu-Save

Click Save on the [Menu] window, then select a path that you want to save.
Next, you can customize the file name as follows.

Now, you can click [OK] to save your palette works into local memory.

Menu-Import

Click Import on the menu window to select a picture import into [Palette] App. This picture will be used as a background for the current page as follows.

Menu-Share

Click Share on the [Menu] window to generate a QR Code so that you can share your palette works to others.

Menu-Exit

Click Exit will exit the [Palette] App. Be careful, current works will lose if you did not save.

[Clear]

Click to clear all content on current page.

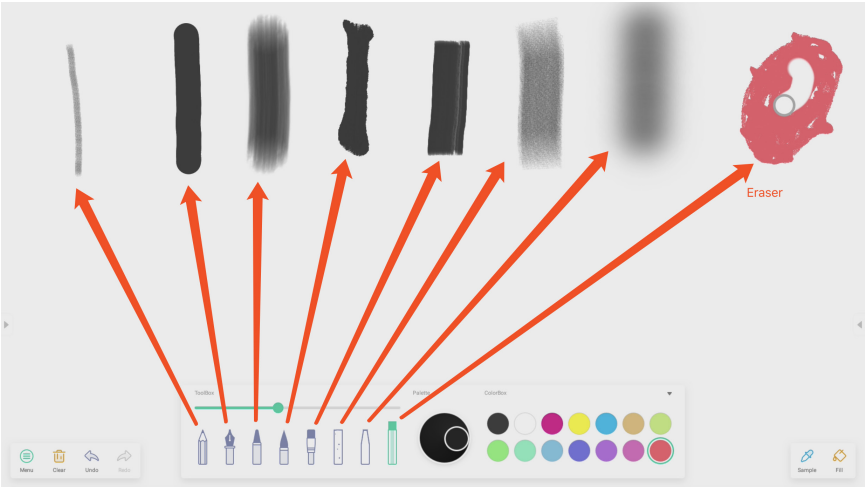
[Undo]

Click to back to last step.

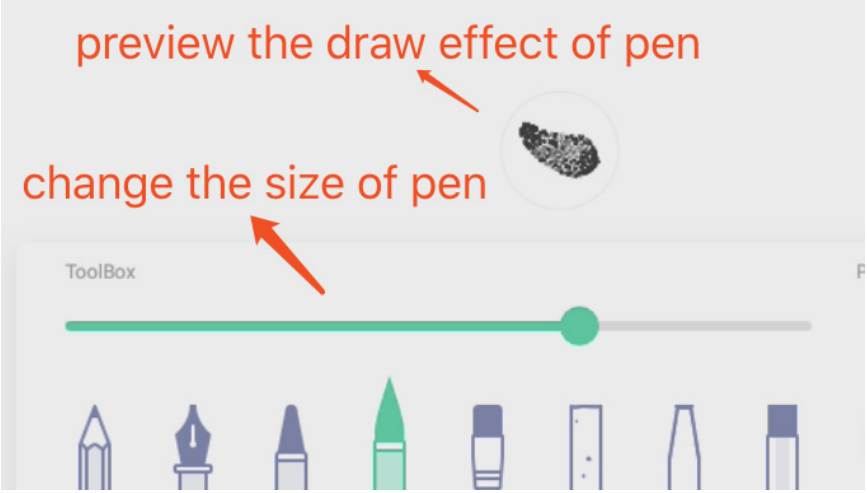
[Redo]

Click to recover a step.

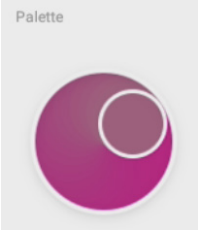
Pens



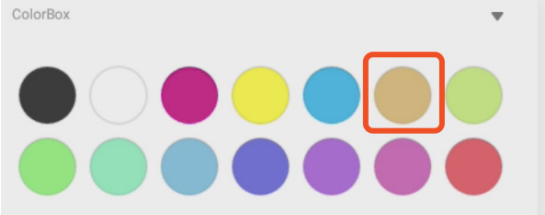
Pen Stroke Slider



[Palette]



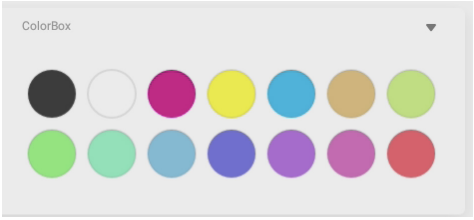
You can use palette to customize a color which did not exist in the [Color Box].
Step 1, click a color on the [Color Box]. Such as,



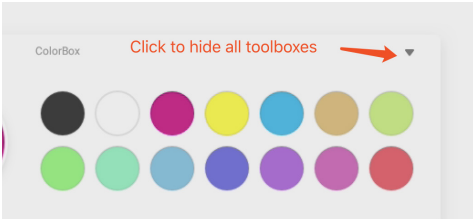
Step 2, drag the roller on the [Palette] clockwise as follows.

Repeat step 1 and step 2, you can get a color which did not exist in the [Color Box], such as

Color Picker

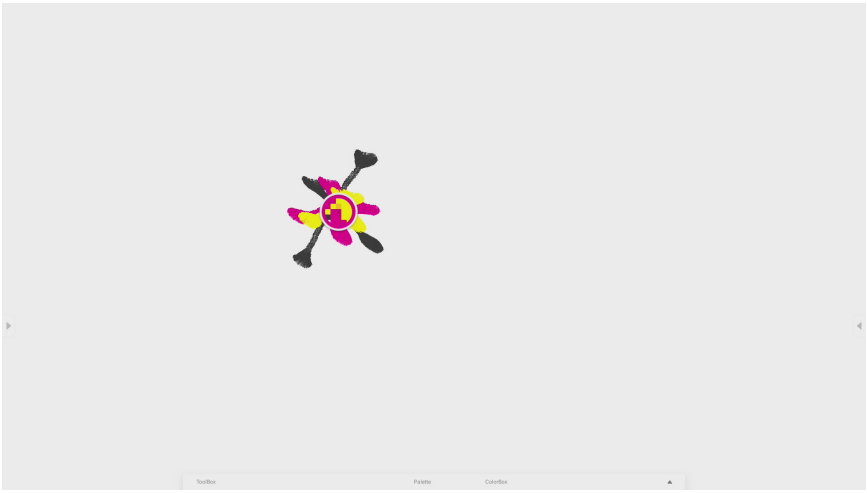


Hide or Show Toolbox



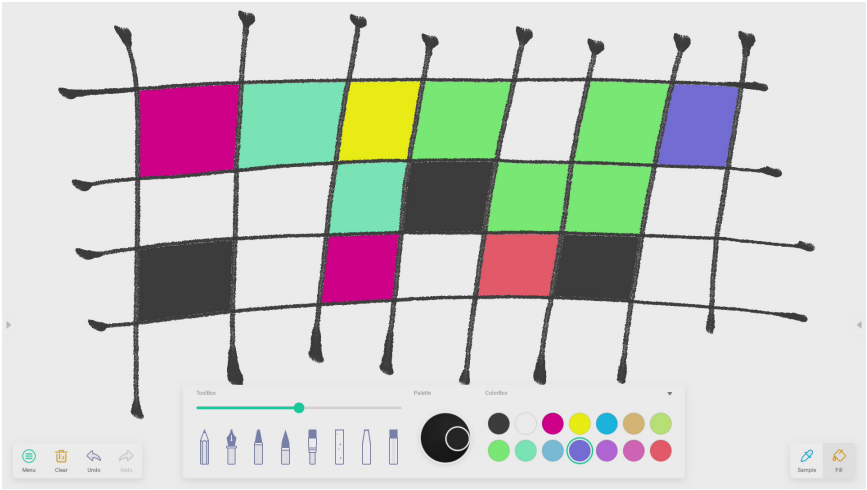
[Sample]

Click to select a color on the workplace



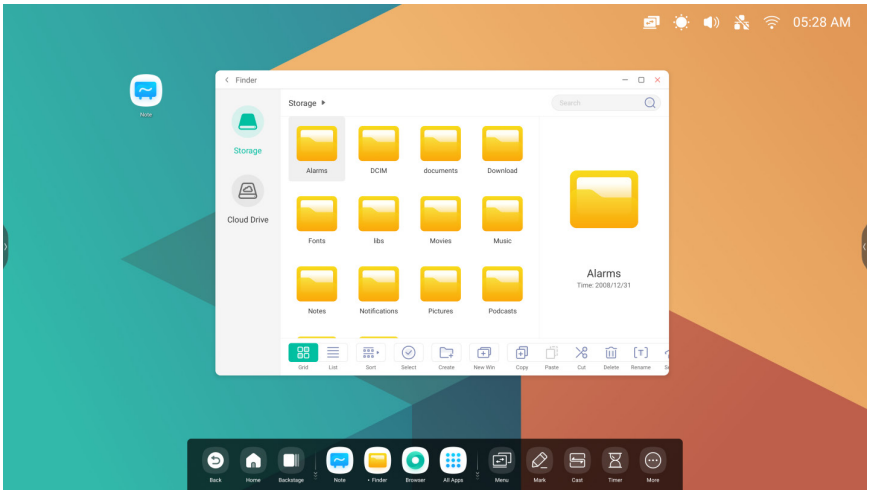
Fill

Click can change the pen mode to fill mode. At this mode, you can select a color on the [Color Box], then to fill a closed region, such as,

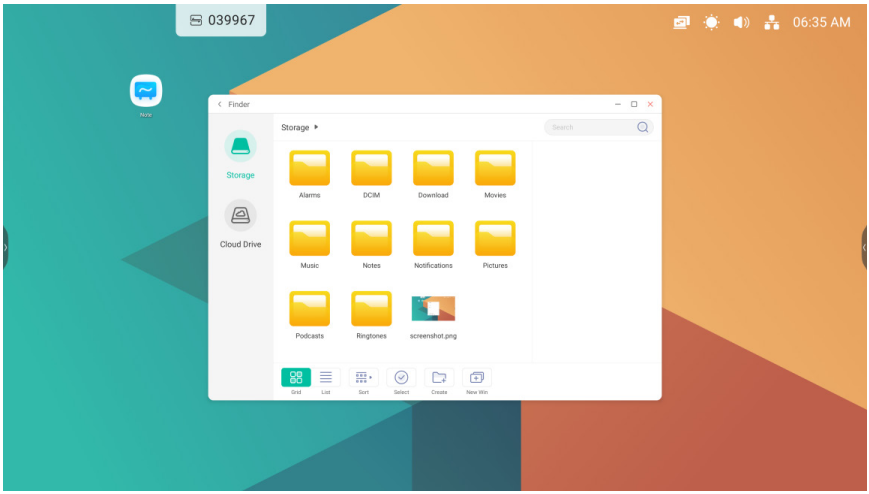


[Finder]

Click to open the [Finder].



[Storage]

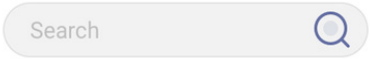


Users can browse resources stored in the local storage according to category, including document, whiteboard writing (pages saved by the whiteboard and quick screenshot), video, picture, and audio.

Back

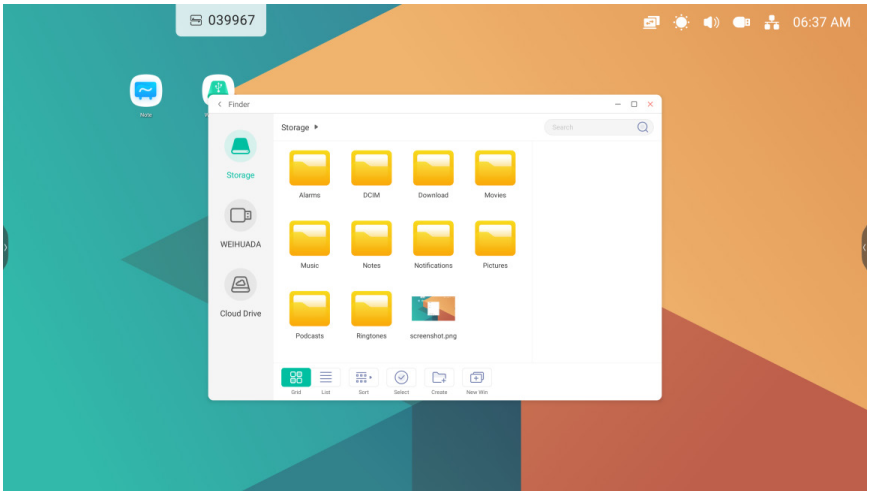
Click < button to return to the previous page.

Search



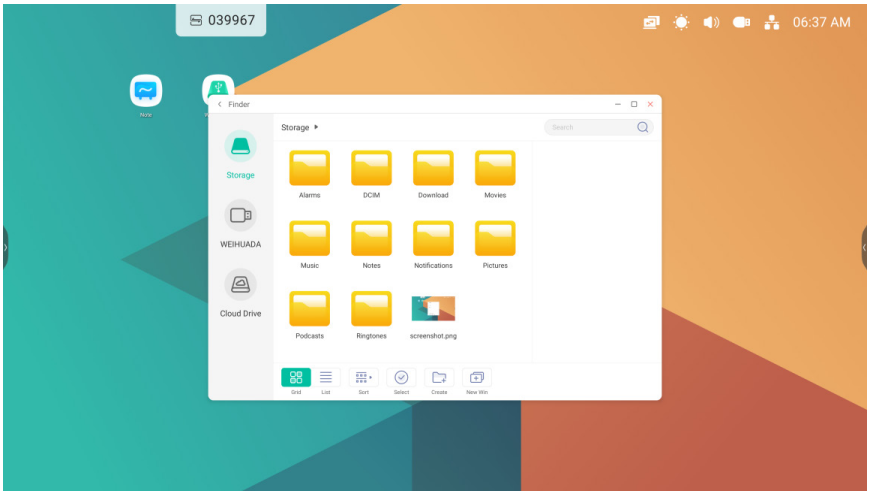
In the input box on the right upper corner of the interface, enter the resource name you want to search, and click to search for the resources. For example, by entering “word”, you can find resources whose name is “word”.

[USB]



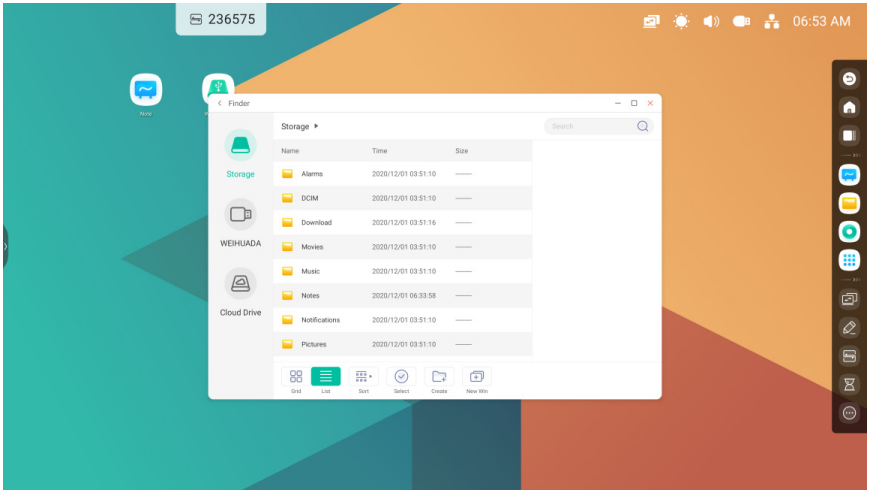
Users can browse resources stored in the [USB] storage according to category, including document, whiteboard writing (pages saved by the whiteboard and quick screenshot), video, picture, and audio.

[Grid] Display



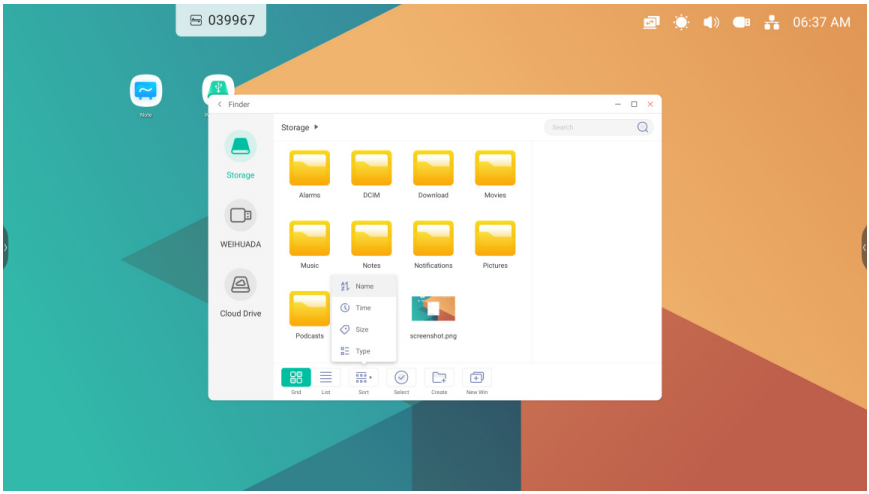
Click to display the resources in the form of icon. The resources are displayed in the form of icon by default.

[List] Display



Click to switch to display the resources in the form of detailed information.

[Sort]



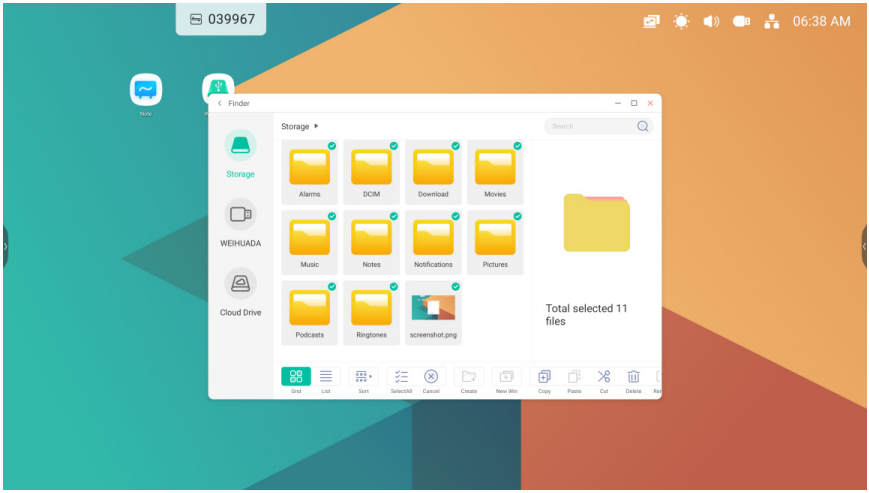
Click the ordering button to pop out the menu as shown in picture. You can order the resources, including ordering according to the name, type, o size, and time. Resources are ordered according to name by default.

[Select]

Click the button to switch to , and a selecting box pops out on the left upper corner of the resources. Then you can select resources as required.

[Select All]

By clicking the button, you can select all resources under the current directory.



Cancelling selecting. Click to cancel all resources that have been selected currently.

Copying

When the resource is selected, the copy button will appear. Click to copy the currently selected resource.

Pasting

When there is any resource being copied or cut currently, the button is available. Users can paste the copied/ cut resource to the specified location as required. You can execute the pasting operation only when the default folder is displaying all resource locations.

Cutting

When the resource is selected, the cutting button will appear. Click to cut the currently selected resource.

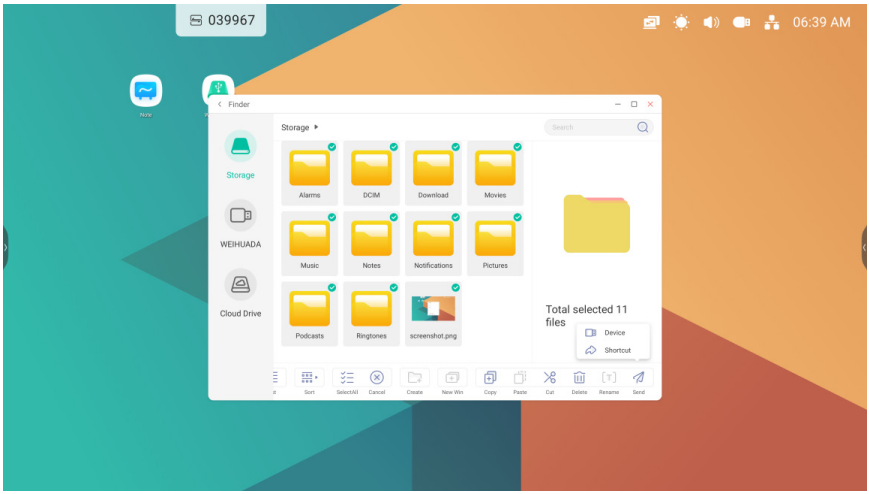
Deleting

Click to delete the selected resource.

Renaming

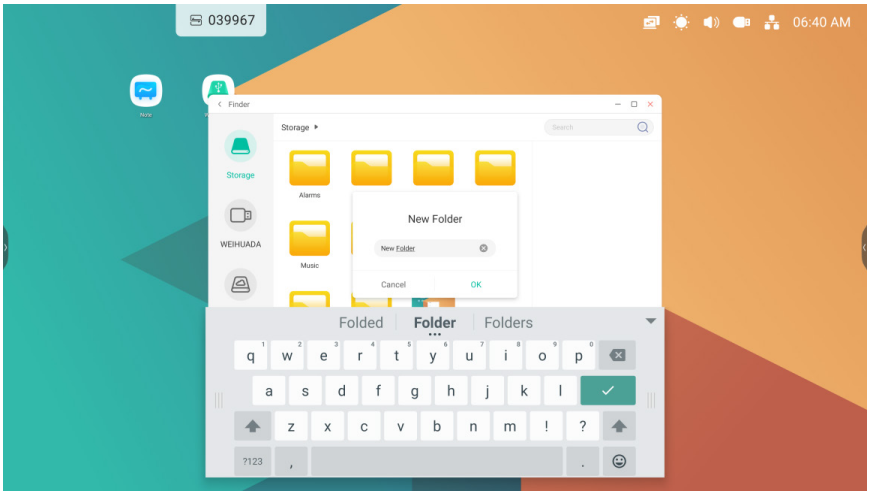
Click to rename the selected resource.

More



Click to pop out the “send to” button. You can send the selected file to the target folder.

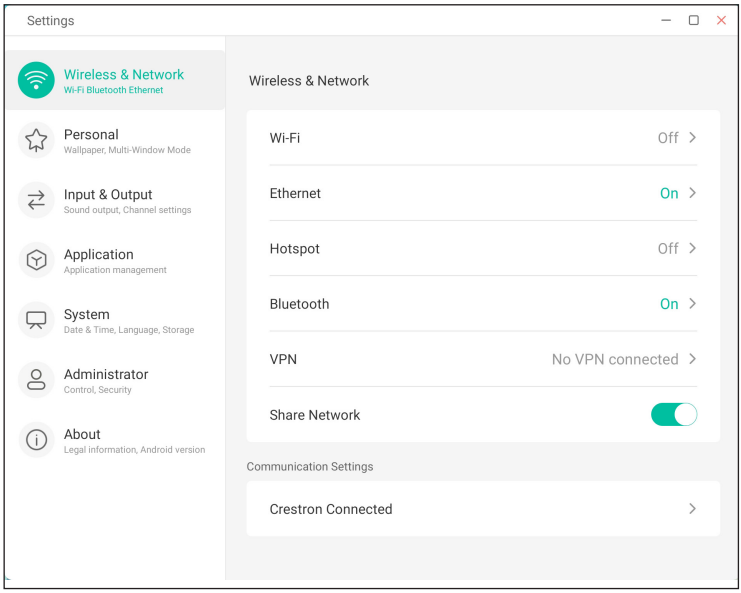
[New Folder]



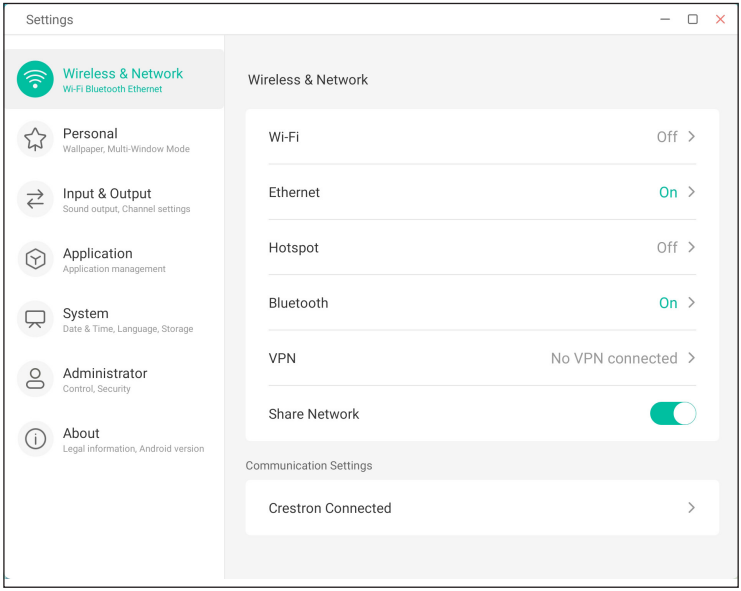
Click [New Folder] to create new folders under the current directory.

[Settings]

Click to open the [Settings].



[Wireless & Network]



[Wi-Fi]

Click the [Wi-Fi] menu to enter the [Wi-Fi] interface and manage and view [Wi-Fi] connections.
If your [Wi-Fi] network does not appear, click [+] and add the [Wi-Fi] network manually.
You can also click [···] to view the [Wi-Fi] address and install the certificate.

[Ethernet]

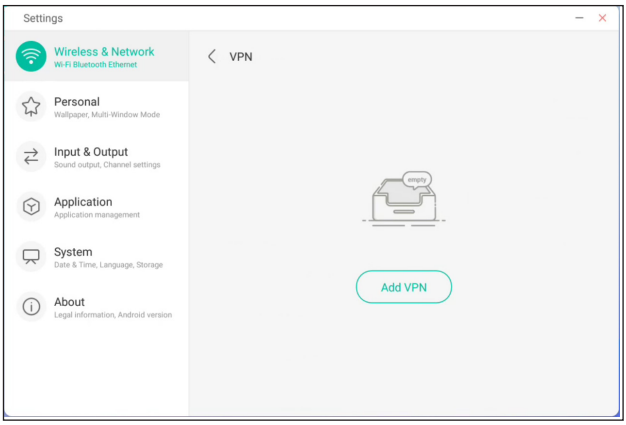
View and control the network status with wired network settings or manually configure the static IP and proxy settings.

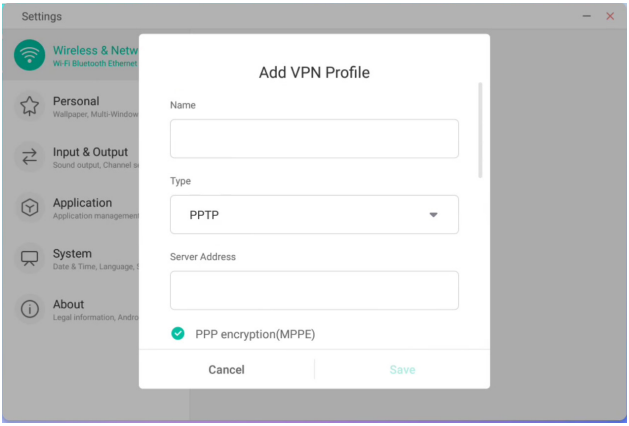
[Hotspot]

Use [Hotspot Settings] to view and control hotspots or to manually set the hotspot name, password and frequency.

[VPN]

Add a [VPN] connection, and manage the [VPN] configuration and status in the [VPN] settings.





[Bluetooth]

You can connect and set up devices that support Bluetooth.

[Share Network]

External devices can use the network through a Type C cable or HDMI cable (& Touch cable) connected to the product. The product must be able to connect and use a separate network, and the external device can use the network simply by connecting a cable to the product.

[Crestron Connected]

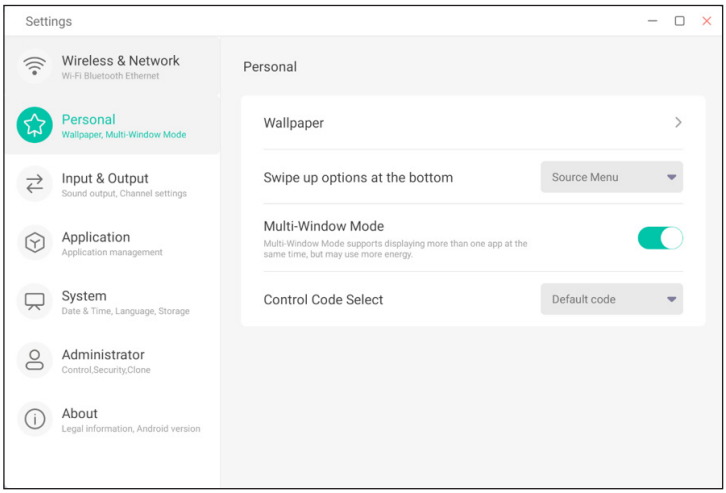
The connection status in the server format is indicated in diagrams and text.

You can select the server type you want to connect to. (Control System, Fusion To Device, Device To Fusion, XiO Cloud)

Content	Description
Control System	• [IP Address]: Enter the IP information of the server. • [Port]: Enter the port information of the server. • [IP ID]: This is a unique ID that distinguishes Crestron equipment on the server. • [Virtual Control Room Id]: This is a unique ID that distinguishes rooms on the server. If the [IP ID] is the same but the [Room ID] is different, the server recognizes it as different Crestron equipment.
Device To Fusion	How to try to connect to the server from the set • [URL]: Enter the URL information of the server. • [Port]: Enter the port information of the server.
Fusion To Device	You can try to connect to the set from the server.
XiO Cloud	• [Disconnected]: Press the button once to try to connect to the server. The button text changes to [Connected]. Press the button one more time to disconnect.

- [Disconnected]: Press the button once to try to connect to the server. The button text changes to [Connected] when successful. In this case, the higher-level items cannot be changed. Press the button one more time to disconnect or to change the higher-level items.
- [Auto Discovery]: This is a feature that can find other Crestron equipment on the network.
- [Use SSL]: You can set up communication security with the server. The following items are meaningful only when [SSL] is turned on.
  - [User Name], [Password]: If [Use SSL] is enabled on the server, you must enter the same [User Name] and [Password] set on the server to connect to the server.
  - [Verify Certificate]: This is a feature that checks if the certificate installed on the server is valid. If it is not valid, there will be no connection to the server.
  - [Manager Certification]: You must save the certificate to the set to perform the [Manager Certification] feature. Only certificates with .pem and .crt extensions are recognized. They can be added or deleted through the menu. All saved certificates are deleted during [Factory Reset].

[Personal]



[Wallpaper]

[Wallpaper] supports both Stills and Dynamic wallpapers. Users can select a [Wallpaper] for their desktop.

[Swipe up options at the bottom]

The swipe up options at the bottom can be set according to the user's preferences.

- [Bottom Sidebar] : Access the system bar from the bottom of the screen.
- [Source Menu] : Displays the Common Settings menu instead of the system bar.

[Multi-Window Mode]

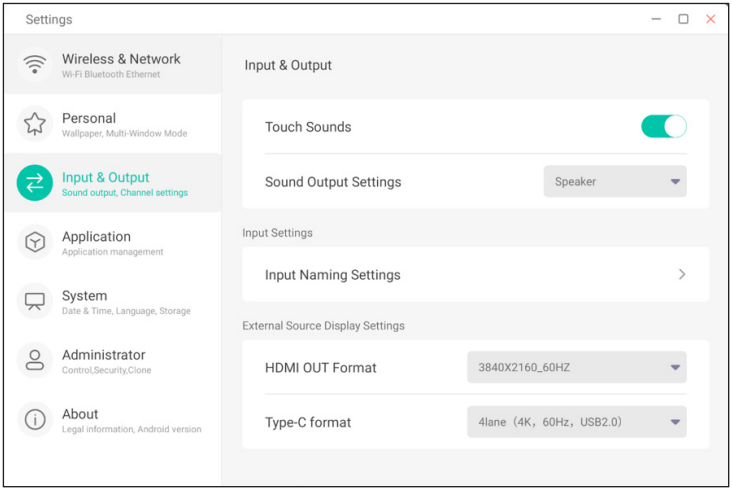
[Multi-Window Mode] allows you to switch to Full Screen mode or Window mode.

[Control Code Select]

It is possible to set the protocol use settings using a network or RS232C cable.

* Select the LG standard code to use the LG protocol

[Input & Output]



[Touch Sounds]

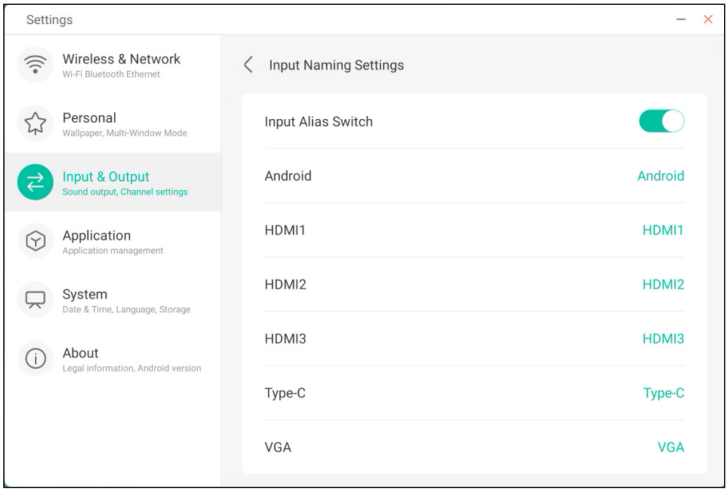
You can use this configuration to set whether or not to enable [Touch Sounds] on your device.

[Sound Output Settings]

This setting allows you to set the desired audio output settings.

[Input Naming Settings]

Use these settings to enable the input naming feature. Users can customise the input name and apply it to the OSD menu and input display.

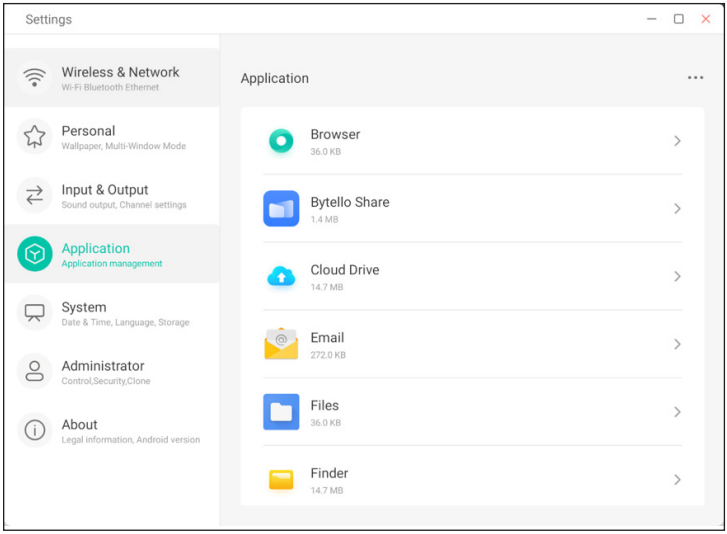


[External Source Display Settings]

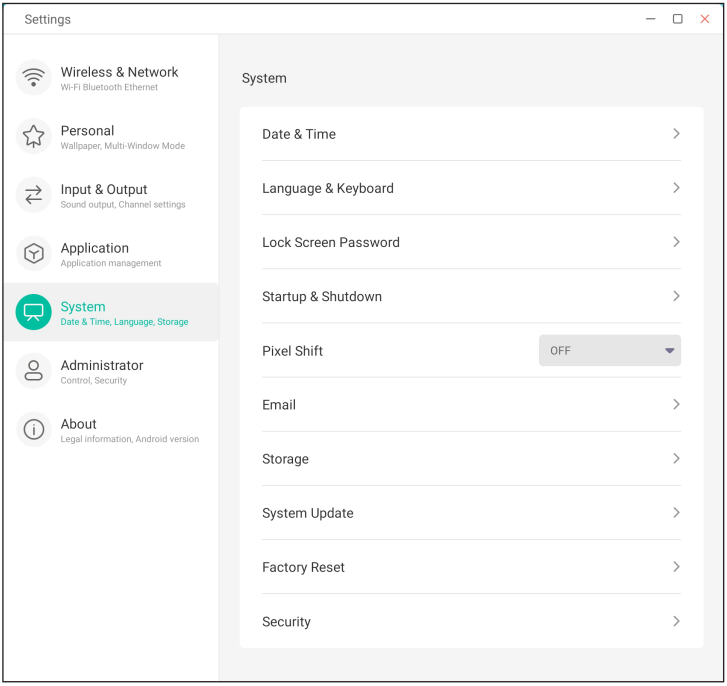
[External Source Display Settings] allow you to set the HDMI OUT resolution and type-C format.

[Application]

View and manage the applications installed on your device and configure additional system settings and display options. The default settings of the application can also be restored.



[System]



[Date & Time]

Set date and time options, such as 24-hour format, network time, date format and time zone.

[Language & Keyboard]

Configure language and keyboard settings.

Users can view currently supported input methods for all devices in [Virtual Keyboard]. These include Android's basic input method, Google Pinyin input, Zhuyin input and Korean input methods. Enable or disable a method using the Enable/Disable button on the right.

[Lock Screen Password]

Users can set, change and clear the screen lock password.

If no screen lock password has been set, users can only set a screen lock password.

The screen lock password must be a four-digit number. Enter and confirm the password to set the screen lock password.

Once the screen lock password has been set, it can be cleared and changed. To change the screen lock password, enter and confirm the current screen lock password and then reset it. To clear the screen lock password, simply enter the current screen lock password.

[Startup & Shutdown]

- [Startup channel] : Set the input to use when booting up the device.
- [Standby After Startup (Black Screen)] : Set the device to wait in Standby mode on bootup. (The power is on, but the screen is not turned on.)
- [Auto Power Off] : Automatically powers off if there is no input or touch motion for 4 hours.
- [No Signal Power Off] : The power is automatically turned off if there is no external input or touch action for the time set by the user.
- [DPM (Display Power Management)] : The power is automatically turned off if there is no external input or touch action for the time set by the user. It automatically turns on when an external input is connected to the device.
- [Sleep timer] : Automatically powers off according to the time set by the user.
- [Power Off Reminder] : For a scheduled power off, a pop-up text is displayed to remind the user.
- [Add Schedule (ON)] : Add a scheduled day and time at which to turn on the device.
- [Add Schedule (OFF)] : Add a scheduled day and time at which to turn off the device.

[Pixel Shift]

Shift pixels based on the settings.

[Email]

Users can log in to a unique email account that supports the SMTP protocol in the [Email] module.

[Storage]

Check the memory area of the system, including internal storage and external storage devices. An external storage device needs to be connected first to be displayed (e.g. USB disc). The storage device can be ejected by clicking the icon.

[System Update]

In the [System Update] module, the version information of the current system and the status of system updates can be viewed. When a new system is released, the [Check Update] button can be used to find updates and download the new system.

[Factory Reset]

Clear data and reset the settings to restore the factory settings.

The internal memory usage, including memory used, can be viewed by [System], [Apps], [Photos], [Files], [Videos] and [Audio].

[Security]

Credential Storage

- View all trusted computers and user certificates, control the activation status of those certificates, and view the details of each certificate.
- Certificates can also be managed by installing and removing a certificate.

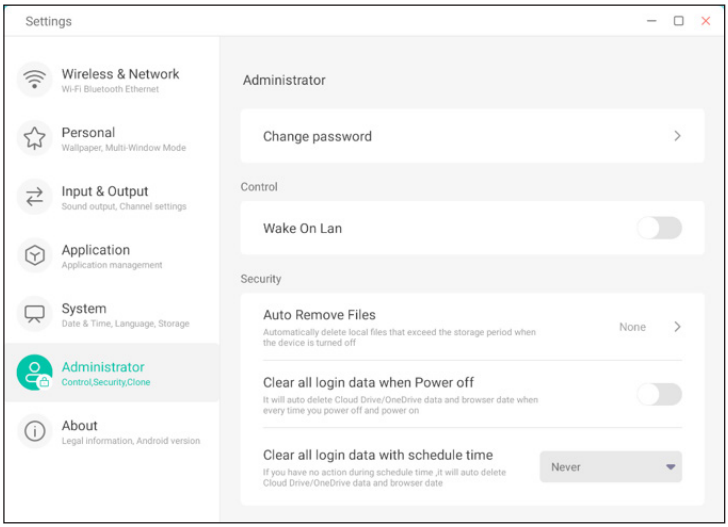
Mode

- USB Lock : Lock the USB port of the device to prevent the device from recognising a USB drive, even if it is connected.
- Mode: Turn on Secure mode to disable the Cast feature and block screen sharing.

Password

- Set, change and clear the password for entering the [Security] menu.

[Administrator]



[Change password]

The administrator can access the menu by entering the password and can set sub-items. After setting the initial password, the password can be changed.

[Wake On Lan]

The [Wake On Lan] function can be enabled/disabled.

[Auto Remove Files]

The administrator can set the period and files to be deleted. The files are automatically deleted when the power is turned off.

[Clear all login data when power off]

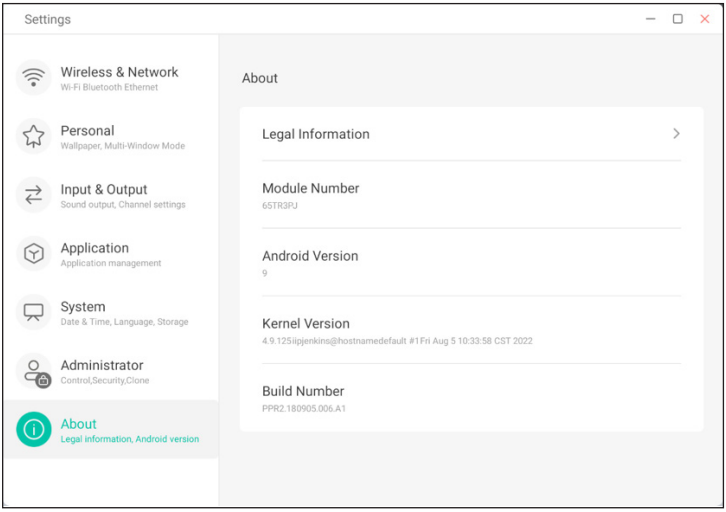
If this function is enabled, the linked Cloud Drive account and browser data are automatically deleted when the power is turned off.

[Clear all login data with schedule time]

According to the schedule specified by the administrator, the linked Cloud Drive account and browser data are automatically deleted.

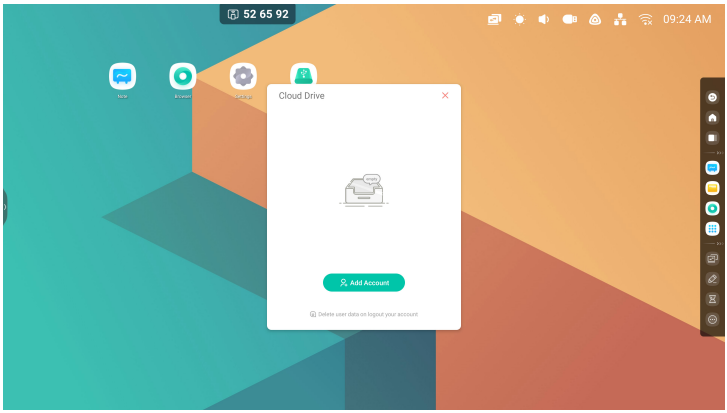
[About]

Users can view the legal information and version information of the device.



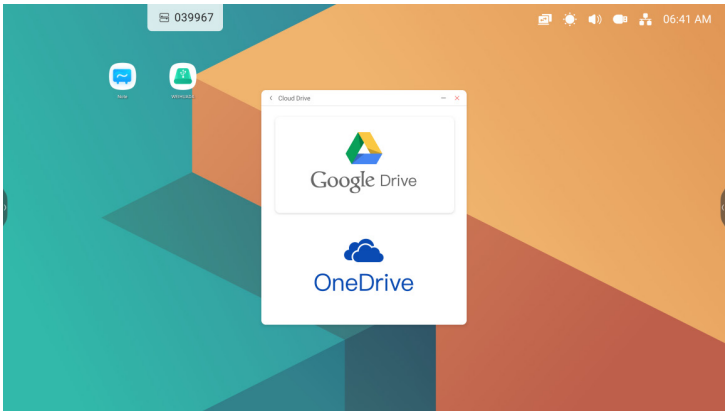
[Cloud Drive]

Click to open the [Cloud Drive].



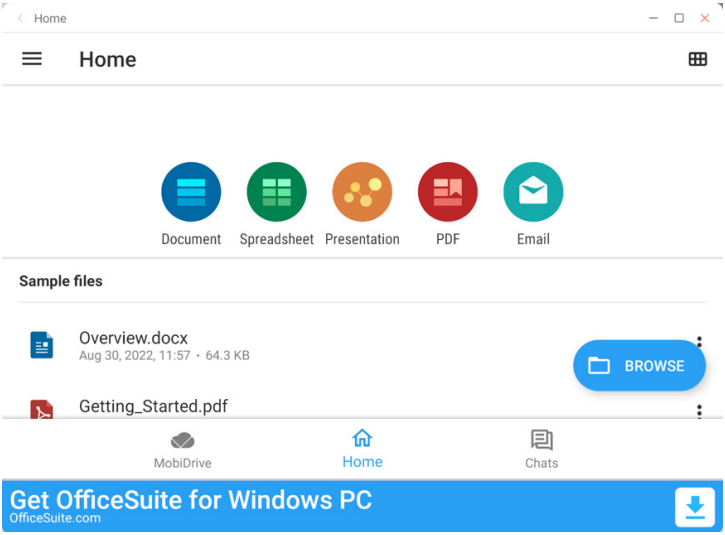
[Add Account]

Click to add account, then you can choose the drive type.



[OfficeSuite]

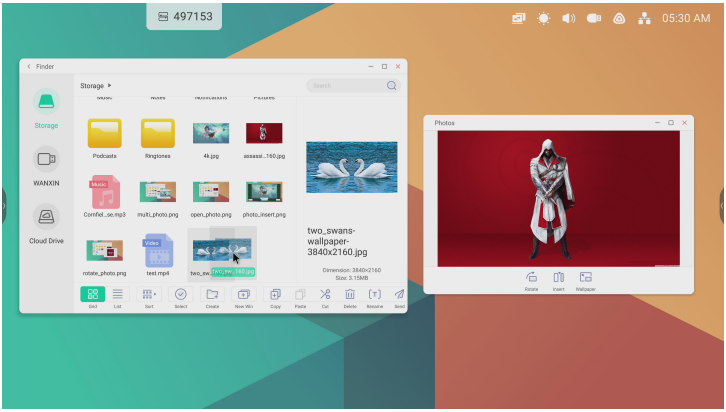
Click to open [OfficeSuite].



[Photo]

1 Click a picture to open the [Photo].

2 Drag a picture from Finder to the [Photo], and it will open the picture.



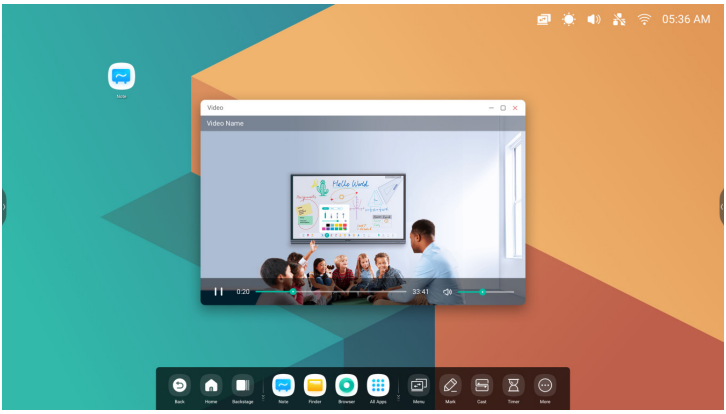
Click the button, the current picture will be rotated by 90 degree.
Click the button, it will insert the current picture into the [Note] app.
Click the button, it will set the current picture as wallpaper.

[Music]

Click a music file to open the [Music].

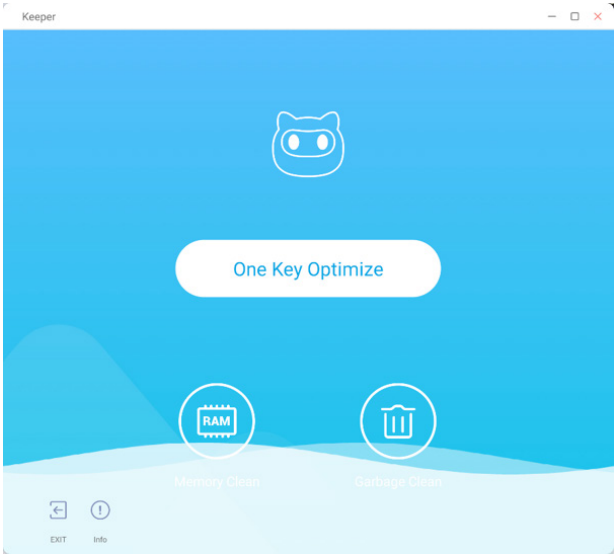
[Video]

Click a video file to open the [Video].



[Keeper]

Click to display the [Keeper] interface, as shown below. Users can optimise memory, clean up garbage and detect system usage on intelligent tablet computers.



[One Key Optimize]

Click One Key Optimize to clean up disc garbage and detect system usage to optimise memory.

[Memory Clean]

Click to optimise memory.
Click [Optimise Again] to optimise it again.

[Garbage Clean]

Click to clean up the recycle bin.
Click [Clean Again] to clean it up again.

Version Information

Click to view the system information, including system version, MCU version and touch panel version.

Click again to close the information window.

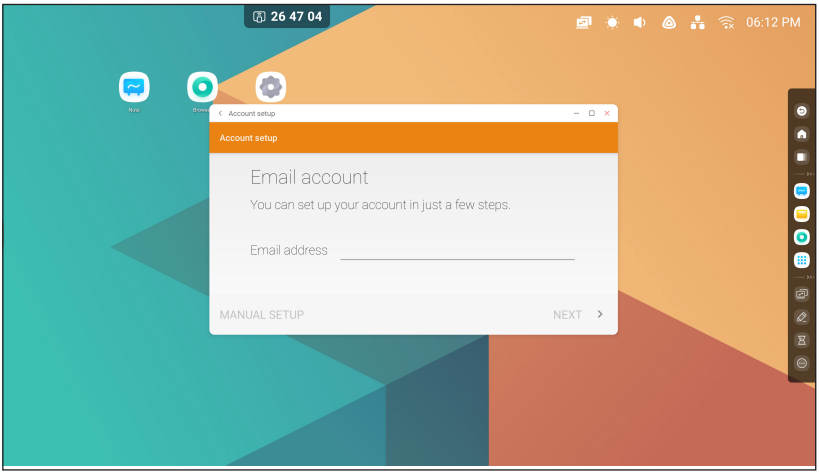
[Exit]

Click to exit the [Keeper].

[Email]

Click [Email] to open the [Email] app.

Users can use email services that support POP3 and IMAP protocols and log in to their own email account.



[LG ConnectedCare DMS]

Click to open the [LG ConnectedCare DMS] app.

A failure diagnosis and prediction service can be accessed by installing the [LG ConnectedCare DMS] (failure diagnosis) solution.

How to Install

Install the [LG ConnectedCare DMS] solution.

1 [Enter Account Number]: Enter the 6-digit account number to install the [LG ConnectedCare DMS] solution.

Account Number: This is the assigned number when registering the [LG ConnectedCare DMS] solution. When you enter the account number, you will receive the corresponding account name.

2 [Confirm Account Number]: Displays the account number and corresponding account name, and checks the validity of the account number.

If an account number is registered, the corresponding account name is displayed, after which you can proceed with the installation of the [LG ConnectedCare DMS] solution.

If the account number is not registered, the account name is displayed as Unknown, in which case you cannot proceed with the installation.

[On] / [Off]

Enable/Disable the [LG ConnectedCare DMS] solution.

[Account]

Displays the account number and name of the currently connected user.

[Version]

Displays the version of the [LG ConnectedCare DMS] solution.

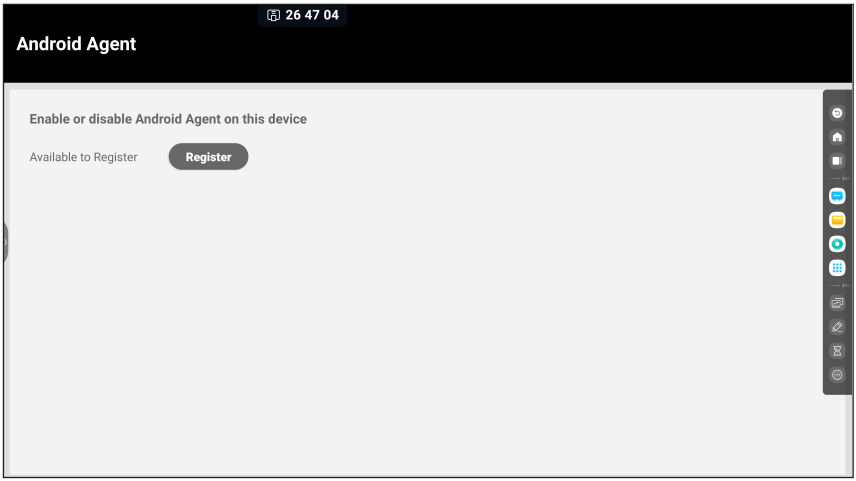
[Server Status]

Displays the connection status between the set and server.

Content	Description
[Connected]	Indicates that the set and server are integrated.
[Not Connected]	Indicates that the set and server are not integrated.
[Waiting for Approval]	Displays the status of waiting for a response from the server.
[Rejected]	Indicates when the server rejects the integration.

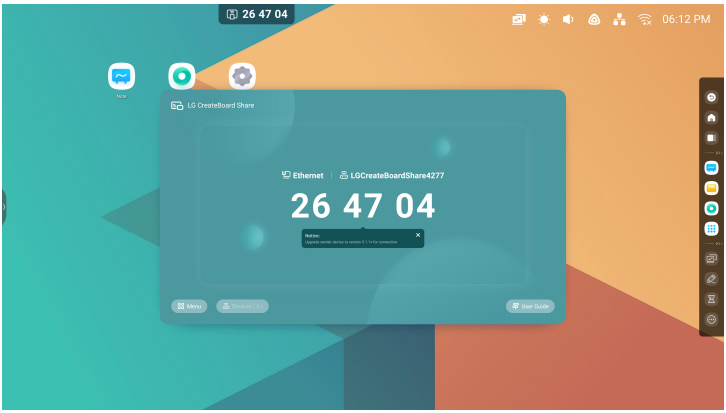
[Reset]

Resets the [LG ConnectedCare DMS] information that has been set up.



[LG CreateBoard Share]

These tools are designed to support seamless screen sharing and collaboration.



Content	Description
Screen copy	If you start sharing the screen, your device becomes the master device with which to share the screen. If you join screen sharing, your device becomes a slave device, sharing the screen of the master device.
Allow this device to be discovered	When this option is enabled, users can search the server from the sender device.
Permission Mode	When this mode is enabled, all devices require permission to cast.
Support Chromecast	When this option is enabled, users can search the server from Chromecast-enabled devices.
Support Airplay device	When this option is enabled, users can search the server from Airplay-enabled devices.
Support Miracast device	When this option is enabled, users can search the server from Miracast-enabled devices.
Share screen via website	Share the screen by accessing the URL link. No separate app/programme is required.
Device Name	Change the device name of the server so that all clients can identify it.
Start automatically on boot	Allow the server application to run automatically when the device starts.
Code refresh rate	Set the time interval to change the connection code in order to prevent users from remembering it.
Floating window size	Set the size of the floating window at the top to Normal (connection code with an icon), Small (icon only), or Minimise (disabled).

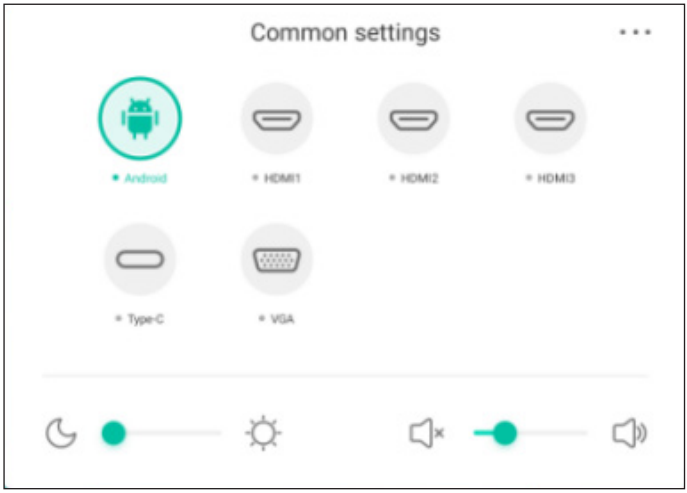
SMALL TOOLS

Use these tools to provide a seamless and fun learning experience for students and improve interactive learning. The default IFP OS tools include [Menu], [Annotation], [CountDown], [Capture], [Stopwatch], [AirClass], [Spotlight], [Freeze], [ScreenLock], and [Record].

[Menu]

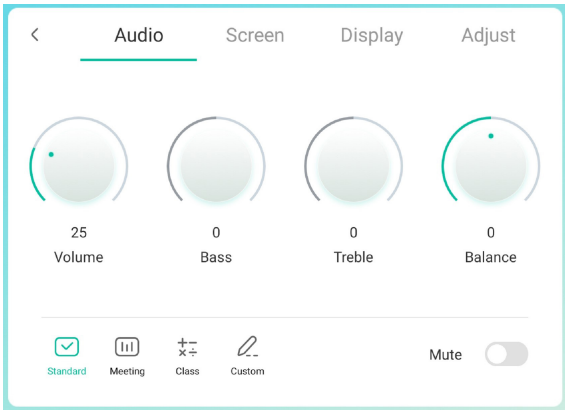
[Common Settings]

Show all input sources, include PC, Android, HDMI, Type-C, VGA.



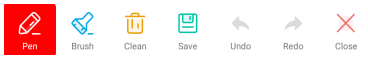
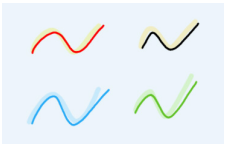
Advanced Settings

Show more settings, include [Audio], [Screen], [Display], and [Adjust].



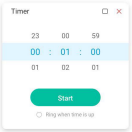
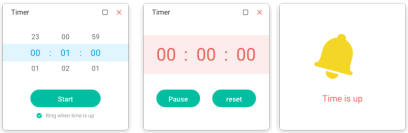
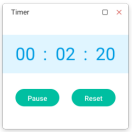
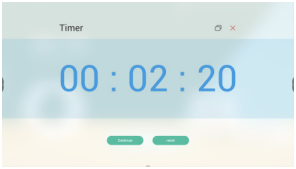
[Annotation]

Add annotations on the apps, videos, websites, documents, or images.

Content	Description
[Pen]	
	
	Click the switch to pen mode and click more times will change the color to red, black, blue, or green.
[Brush]	Click the to switch to Brush mode and click more times to change the color to yellow, orange, blue, or green.
[Clean]	Clean the annotations in the screen.
[Save]	Save the current annotation and screen content to a figure in storage. If you save properly, you will see a dialog box. Click the [Cancel] button to close the dialog box and click the [Open] button to go to the [Finder] to find saved figures.
[Undo]	Return to the previous last step.
[Redo]	Restore the steps.
[Close]	Exit the tools, and the annotations will be ignore.

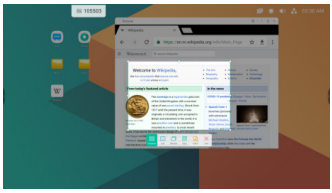
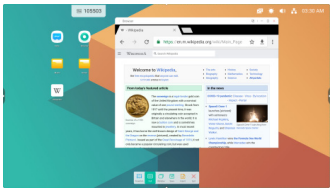
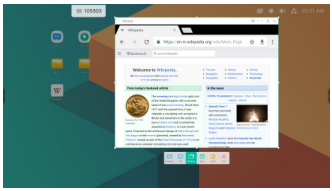
[CountDown]

A tool which counts down from a specified time interval.

Content	Description
✕	
	Click to close the tool.
[Ring]	
	Check the [Ring When Time is Up], it will reminder user by using ring tone.
[Start]	
	Click to start count down.
[Pause]	Click to pause count down time.
[Reset]	Click to reset count down time.
▢ ⧉	
	Click to view will full the screen or restore original size.
Shrink	
	Click anywhere outside the timer to shrink it. Click again to restore it.

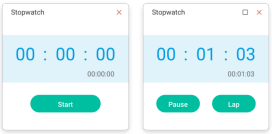
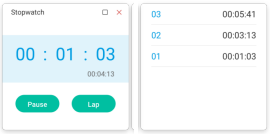
[Capture]

Captures screenshots of everything on the screen, including content from apps, websites and videos.

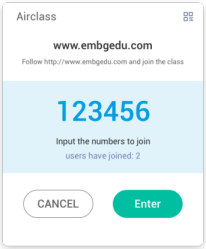
Content	Description
[Freedom]	
	The default is a custom screenshot, with a default initial size.
[Full]	
	Click to switch to full screen size.
[Window]	
	Click to focus and switch to the uppermost window size.
[Save]	Save the picture in the storage.
[Insert]	Click to insert the screenshot directly into [Note].
[Mail]	Click to e-mail the screenshot.
[Exit]	Click to exit screenshot mode.

[Stopwatch]

A tool which counts upwards from zero for measuring elapsed time.

Content	Description
✕	Click to close the tool.
[Start]	
	Tap the stopwatch to start timing.
[Pause]	Click to pause timing.
[Lap]	
	Click to record multiple time periods and display them in a list.
Mini Size	
	Click outside the stopwatch to reduce the window size, and click it again to go back to the original-sized stopwatch window.

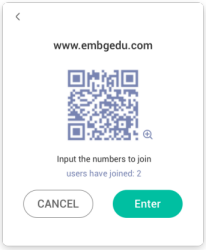
[AirClass]



Scan QR Code

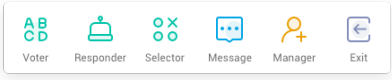
Students can just scan the QR code to join the class with their phone. Besides, they can type the URL in their browser to join the class as well.

Please make sure their phone are on the same LAN with the IFP, otherwise they will not succeed in joining the class.



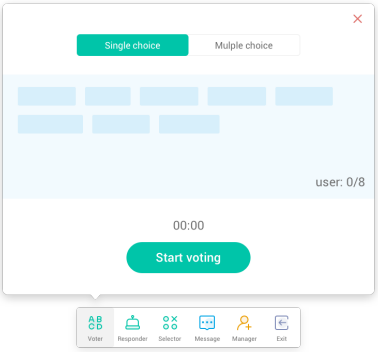
[Enter the Class]

After most of students joined the class, you can click the [Enter the Class] button to enter the class. Then button panel as above will show.



[Voter]

Click on the button panel to start the voter part. The toolbar of voter will show as above.



[Single Choice]

As default, [Single Choice] button will be checked. In single choice mode, students can only submit a single answer for the question.

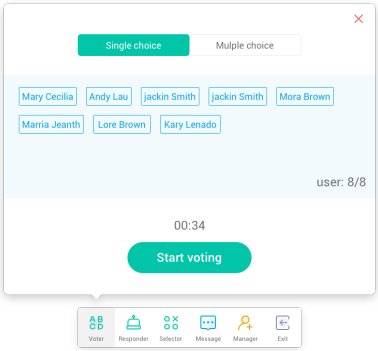
[Multiple Choice]

When [Multiple Choice] button checked, students can submit more then a single answer for the question.

[Begin]

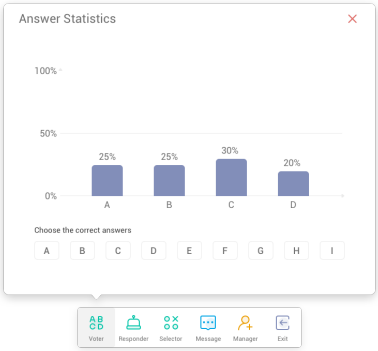
Click [Start Voting] to start answering questions. After students answer the question, their names turn blue. Clicking a name item, name of it will be shown in a pop up window.

Until [Finish] button clicked, students can submit their answer again and again. But when the question finished, only the final submission would be accepted.



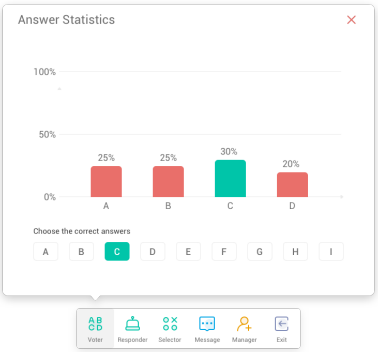
[Finish]

Click [Finish] to finish answering questions, then you can access the [Answers Statistics] page with full screen.



Answer statistics

Choose the right answer(s), and calculate the accuracy. And the bar of wrong answer(s) will be marked red.
Clicking the bar of any answers, the names of whom voted for the answer will be shown in a pop up window.

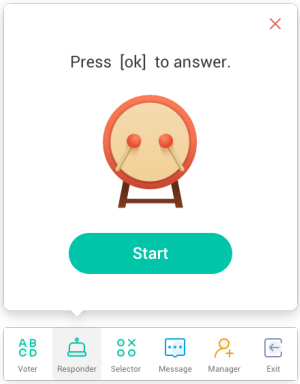


Exit

Click the ✕ to on [Answers statistics] window to exit the voter.

[Responder]

Click the button on the button panel to access the responder part.



[Start]

Click [Start] button to start responder. Students can respond by pressing the [OK] button on their phone.

[Selector]

Click the button on the button panel to access the selector part. You can select one or some students to answer your question randomly.

Only if at least 1 student in your class, you can start the selector.

[Start]

Click the “+” button or “-” button to set number of person(s) whom will be selected. Click [Start] to start selecting or click to quit.

[Reset]

Click [Reset] to restart the selector.

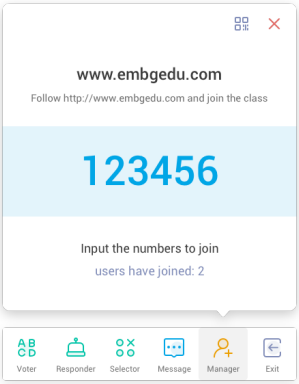
[Message]

Click [Message] button to switch enable for message part. The icon of the button will show when message enable, and show when it disable.

After enabling the message, students can publish the message comments on the mobile phone. The message comments are updated on the IFP in real time.

[Manager]

Click the button on the button pannel to pop up the QR code, for ease of students in the class to join in the class.



Scan QR Code

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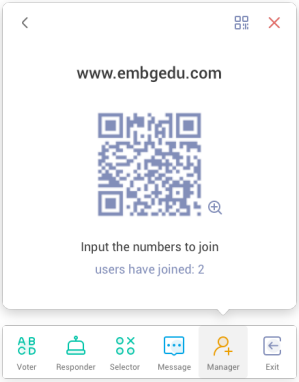
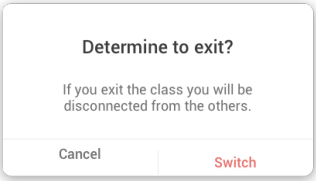


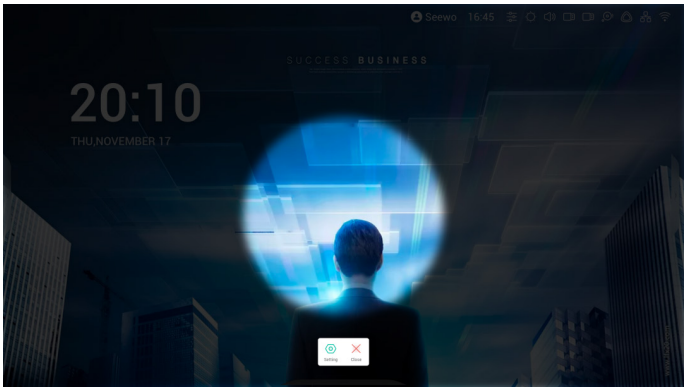
[Exit]

Click the button on thin button panel to exit from the APP. A dialog will show. Click [Cancel] to dismiss the dialog and click [Exit] to confirm exiting.



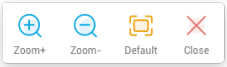
[Spotlight]

Teachers can use this function to focus on specific areas of the screen.



[Freeze]

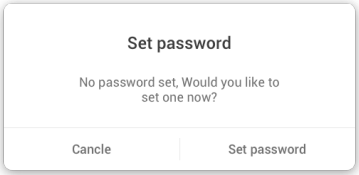
Teacher can freeze and zoom the current content on the screen.



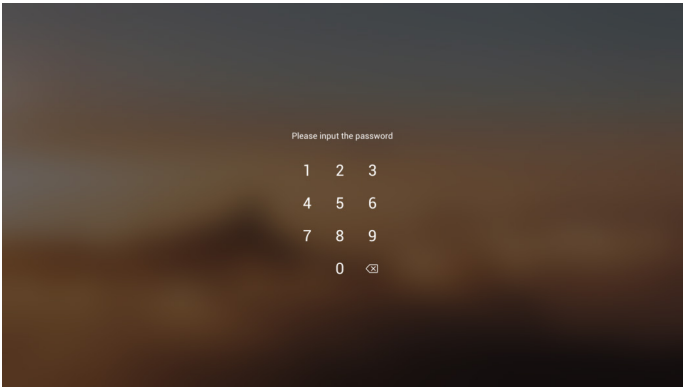
Content	Description
[Zoom +]	Click to zoom in the current screen.
[Zoom -]	Click to zoom out the current screen.
[Default]	Click to return to the original size of the screen.
[Close]	Click the button to exit the screen freezing.

[ScreenLock]

Teacher can lock the screen with the [ScreenLock], and unlock it by entering the password, which is set in [Settings].

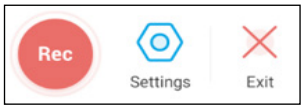


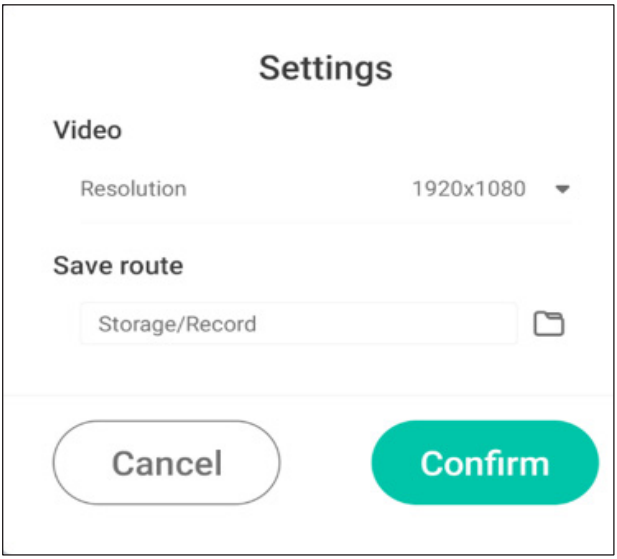
If you have set the password, then the screen will be locked. You need to enter the password to unlock.



[Record]

Record the screen itself.
Users can set the resolution and path to save the recording.





MEDIA SPEC

Movie

File Extensions	Codec		
	Video	Audio	Maximum transmit ratio
.3g2	H.263	AAC, AMR_NB	Spec: Max Resolution: 1920 x 1088 30 Fps, 5 Mbps
.3gp .avi	H.264		Spec: Max Resolution: 3840 x 2160 30 Fps, 160 Mbps
	H.263		Spec: Max Resolution: 1920 x 1088 30 Fps, 5 Mbps
	Mpeg-4		Spec: Max Resolution: 1920 x 1088 30 Fps, 50 Mbps
	H.263	Mpeg1/2 Layer3, AAC,LPCM	Spec: Max Resolution: 1920 x 1088 30 Fps, 5 Mbps
	H.264		Spec: Max Resolution: 3840 x 2160 30 Fps, 160 Mbps
	Mpeg-1		Spec: Max Resolution: 1920 x 1088 30 Fps, 80 Mbps
	Mpeg-2		Spec: Max Resolution: 1920 x 1088 30 Fps, 80 Mbps
	Mpeg-4		Spec: Max Resolution: 1920 x 1088 30 Fps, 50 Mbps
	Mjpeg		Spec: Max Resolution: 1920 x 1080 30 Fps, 150 Mbps
.flv	H.263	Mpeg1/2 Layer3, AAC	Spec: Max Resolution: 1920 x 1088 30 Fps, 5 Mbps
	VP6		Spec: Max Resolution: 1920 x 1088 30 Fps, 40 Mbps
	H.264		Spec: Max Resolution: 3840 x 2160 30 Fps, 160 Mbps
.f4v	H.264	AAC	Spec: Max Resolution: 3840 x 2160 30 Fps, 160 Mbps
.mkv	H.264	AAC, Mpeg1/2 Layer3	Spec: Max Resolution: 3840 x 2160 30 Fps, 160 Mbps
	H.265		Spec: Max Resolution: 3840 x 2160 60 Fps, 160 Mbps
	Vc-1		Spec: Max Resolution: 1920 x 1088 30 Fps, 45 Mbps
.mov	H.264	AAC, PCM	Spec: Max Resolution: 3840 x 2160 30 Fps, 160 Mbps
	H.265		Spec: Max Resolution: 3840 x 2160 60 Fps, 160 Mbps
	MPEG-4		Spec: Max Resolution: 1920 x 1088 30 Fps, 50 Mbps
	MJPEG		Spec: Max Resolution: 1920 x 1080 30 Fps, 150 Mbps
.mp4	H.264	AAC	Spec: Max Resolution: 3840 x 2160 30 Fps, 160 Mbps
	H.265		Spec: Max Resolution: 3840 x 2160 60 Fps, 160 Mbps
	MPEG-4		Spec: Max Resolution: 1920 x 1088 30 Fps, 50 Mbps
.vob	MPEG-2	Mpeg1/2 Layer3, PCM	Spec: Max Resolution: 1920 x 1088 30 Fps, 80 Mbps
.mpg/.mpeg	H.264	Mpeg1/2 Layer3, AAC	Spec: Max Resolution: 3840 x 2160 30 Fps, 160 Mbps
	MPEG-1		Spec: Max Resolution: 1920 x 1088 30 Fps, 80 Mbps
	MPEG-2		Spec: Max Resolution: 1920 x 1088 30 Fps, 80 Mbps

File Extensions	Codec		
	Video	Audio	Maximum transmit ratio
.ts	H.264	GAAC, Mpeg1/2 Layer3	Spec: Max Resolution: 3840 x 2160 30 Fps, 160 Mbps
	H.265		Spec: Max Resolution: 3840 x 2160 60 Fps, 160 Mbps
	MPEG-2		Spec: Max Resolution: 1920 x 1088 30 Fps, 80 Mbps
	MPEG-4		Spec: Max Resolution: 1920 x 1088 30 Fps, 50 Mbps
	VC-1(AP)		Spec: Max Resolution: 1920 x 1088 30 Fps, 45 Mbps
Licenses involved in specifications above are supposed to be obtained by customers.			

Audio			
File	**Format**	**Audio Codec**	**Supported range**
.aac	AAC	AAC	Sample Rate: 8K~96 KHz Bit Rate: 24K~576 Kbps
.ape	Monkey's Audio	Monkey's Audio	Sample Rate: Max 48 KHz Bit Rate: max 1411 Kbps
.flac	FLAC	FLAC	Sample Rate: Max 192 KHz Bit Rate: max 1411 Kbps
.m4a	ALAC	ALAC	Sample Rate: 8K~96 KHz Bit Rate: 24K~576 Kbps
.mp3	MPEG Audio Layer3	MPEG1/2 Layer3	Sample Rate: 8K~48 KHz Bit Rate: 32K~320 Kbps
.ogg	Vorbis	Vorbis	Sample Rate: 8K~48 KHz Bit Rate: max 256 Kbps
.wav	WAV	LPCM	Sample Rate: 8K~192 KHz Bit Rate: max320 Kbps
Licenses involved in specifications above are supposed to be obtained by customers.			

Photo

File	Format	Supported range	
.bmp	BMP	Max Resolution: 8000 × 8000 Min Resolution: 4 x 4	Spec: Max Resolution: 8000 × 8000 Preview Normal, Unable to play full screen
.gif	GIF	Max Resolution: 8000 × 8000 Min Resolution: 4 x 4	Max Resolution: 8000 × 8000 Preview Normal, Unable to play full screen
.jpeg/jpg	JPEG	Max Resolution: 8000 × 8000 Min Resolution: 4 x 4	Progressive support 4000 × 4000; baseline support 8000 x 8000
.png	PNG	Max Resolution: 8000 × 8000 Min Resolution: 4 x 4	

CONTROLLING MULTIPLE PRODUCTS

Command Reference List

		COMMAND	DATA
		1	(Hexadecimal)
01	Power	30	000 – 003
02	Treble	31	000 – 100
03	Bass	32	000 – 100
04	Balance	33	000 – 100
05	Contrast	34	000 – 100
06	Brightness	35	000 – 100
07	Sharpness	36	000 – 100
08	Sound Mode	37	000 – 004
09	Volume	38	000 – 100
10	Mute	39	000 – 001
11	Video Source	3A	See Video Source
12	Aspect Ratio	3B	000 – 002
13	Language	3C	See Language
14	Picture Mode	3D	000 – 003
15	Hue	3E	000 – 100
16	Backlight	3F	000 – 100
17	Color Temp	40	000 – 002
18	Remote Control	41	See Remote Control
19	IR	42	000 – 001

Transmission/Reception Protocol

Transmission

(Start)(Set ID)(Type)(Command)(Data)(Cr)

* (Start): This is a commend to start the RS-232C control and starts with 0 x 3A.
* (Set ID): This is to select the set to be controlled, and the Set ID is fixed to 01 (30 31).
* (Type): The command is to set the function or check the status of it. (Settings: 0 x 53/Check: 0 x 47)
* (Command): This command is to control the set.
* (Data): Transmits command data.

Acknowledgement

Set success (Success)
Reply: 34 30 31 2B 0D

Set fail (Fail)
Reply: 34 30 31 2D 0D

* ACK (acknowledgment) is sent in this format depending on the processing status of the command inputted to the product.
* When the Type value is sent as 0x47 to check the setting value of the function, the value of the Data should be sent as 000 (30 30 30).

01. Power (Command: 30)
Controls the power on/off status of the monitor.

Transmission
(3A)(30 31)(Type)(30)(Data)(0D)

Data 000 (30 30 30): Backlight Off
001 (30 30 31): Backlight On
002 (30 30 32): Power Off
003 (30 30 33): Power On

02. Treble (Command: 31)
Adjust the sound treble.

Transmission
(3A)(30 31)(Type)(31)(Data)(0D)

Data 000 (30 30 30) ~ 100 (31 30 30)

03. Bass (Command: 32)
Adjust the sound bass.

Transmission
(3A)(30 31)(Type)(32)(Data)(0D)

Data 000 (30 30 30) ~ 100 (31 30 30)

04. Balance (Command: 33)
Adjust the sound balance.

Transmission
(3A)(30 31)(Type)(33)(Data)(0D)

Data 000 (30 30 30) ~ 100 (31 30 30)

05. Contrast (Command: 34)
Adjust the screen contrast.

Transmission
(3A)(30 31)(Type)(34)(Data)(0D)

Data 000 (30 30 30) ~ 100 (31 30 30)

06. Brightness (Command: 35)
Adjust the screen brightness.

Transmission
(3A)(30 31)(Type)(35)(Data)(0D)

Data 000 (30 30 30) ~ 100 (31 30 30)

07. Sharpness (Command: 36)
Adjust the screen sharpness.

Transmission
(3A)(30 31)(Type)(36)(Data)(0D)

Data 000 (30 30 30) ~ 100 (31 30 30)

08. Sound mode (Command: 37)
Select sound mode.

Transmission
(3A)(30 31)(Type)(37)(Data)(0D)

Data 000 (30 30 30): Movie
001 (30 30 31): Standard
002 (30 30 32): Custom
003 (30 30 33): Classroom
004 (30 30 34): Meeting

09. Volume (Command: 38)
Adjust the volume.

Transmission
(3A)(30 31)(Type)(38)(Data)(0D)

Data 000 (30 30 30) ~ 100 (31 30 30)

10. Mute (Command: 39)
Mutes/Unmutes audio.

Transmission
(3A)(30 31)(Type)(39)(Data)(0D)

Data 000 (30 30 30): Off
001 (30 30 31): On

11. Video Source (Command: 3A)
Select a video source.

Transmission
(3A)(30 31)(Type)(3A)(Data)(0D)

Data
- 000 (30 30 30): VGA
- 001 (30 30 31): HDMI1
- 002 (30 30 32): HDMI2
- 021 (30 32 31): HDMI3
- 101 (31 30 31): Android
- 103 (31 30 33): Slot PC

12. Aspect Ratio (Command: 3B)
Adjust the aspect ratio.

Transmission
(3A)(30 31)(Type)(3B)(Data)(0D)

Data
- 000 (30 30 30): 16:9
- 001 (30 30 31): 4:3
- 002 (30 30 32): PTP

13. Language (Command: 3C)
Select the OSD language.

Transmission
(3A)(30 31)(Type)(3C)(Data)(0D)

Data
- 000 (30 30 30): English
- 001 (30 30 31): French
- 002 (30 30 32): Spanish
- 003 (30 30 33): Chinese (Mandarin)
- 004 (30 30 34): Chinese (Cantonese)
- 005 (30 30 35): Portuguese
- 006 (30 30 36): German
- 007 (30 30 37): Dutch
- 008 (30 30 38): Polish
- 009 (30 30 39): Russian
- 010 (30 31 30): Czech
- 011 (30 31 31): Danish
- 012 (30 31 32): Swedish
- 013 (30 31 33): Italian
- 014 (30 31 34): Romanian
- 015 (30 31 35): Norwegian
- 016 (30 31 36): Finnish
- 017 (30 31 37): Greek
- 018 (30 31 38): Turkish
- 019 (30 31 39): Arabic
- 020 (30 32 30): Japanese
- 021 (30 32 31): Ukraine

14. Picture Mode (Command: 3D)
Select a picture mode.

Transmission
(3A)(30 31)(Type)(3D)(Data)(0D)

Data
- 000 (30 30 30): Standard
- 001 (30 30 31): Bright
- 002 (30 30 32): Soft
- 003 (30 30 33): Customer

15. Hue (Command: 3E)
Adjust the screen hue.

Transmission
(3A)(30 31)(Type)(3E)(Data)(0D)

Data 000 (30 30 30) ~ 100 (31 30 30)

16. Backlight (Command: 3F)
Adjust the backlight.

Transmission
(3A)(30 31)(Type)(3F)(Data)(0D)

Data 000 (30 30 30) ~ 100 (31 30 30)

17. Color Temp (Command: 40)
Adjust the color temperature.

Transmission
(3A)(30 31)(Type)(40)(Data)(0D)

Data
- 000 (30 30 30): Cool
- 001 (30 30 31): Standard
- 002 (30 30 32): Warm

18. Remote Control (Command: 41)

Send a key code for the IR remote control.

Transmission

(3A)(30 31)(Type)(41)(Data)(0D)

Data
- 000 (30 30 30): Vol+
- 001 (30 30 31): Vol-
- 010 (30 31 30): Up
- 011 (30 31 31): Down
- 012 (30 31 32): Left
- 013 (30 31 33): Right
- 014 (30 31 34): OK
- 020 (30 32 30): Menu
- 021 (30 32 31): Input Source
- 022 (30 32 32): Exit
- 031 (30 33 31): Blank
- 032 (30 31 32): Freeze

19. IR (Command: 42)

Adjust the remote control (IR).

Transmission

(3A)(30 31)(Type)(42)(Data)(0D)

Data
- 000 (30 30 30): Enable
- 001 (30 30 31): Disable

TROUBLESHOOTING

» Each model may have different points to check.
» For information on your PC settings, refer to the Windows Help.

Model corresponding to sentence color

COMMON	VIDEO WALL	SMALL INCH	ENCLOSURE	OLED	STRETCH	TOUCH

Issues Related to Use

- The power won't turn on.
  - Check if the power cord is correctly plugged into the power outlet.
  - When operating in below zero temperature, the enclosure may not work for up to one hour to raise the internal temperature of the enclosure.
  - For models with a circuit breaker, check whether the circuit breaker has been connected properly. The switch of the circuit breaker must be set to on (red).
  - Try turning the power on after disconnecting the AC adapter and cleaning the contacting port.
  - Ensure whether LAN cable is damaged or not when using POE.
  - Do not connect AC adapter when using POE power.
- The 'Unknown Product' message appears when the product is connected.
  - Check if the driver of PC(graphics card) has been installed.
  - Check if the plug and play function is supported by the PC(graphics card) user manual.

Issues Related to Screen (Video)

- A message saying 'No signal' or 'Invalid Format' appears.
  - The signal cable is not connected between the PC and the product, or the cable connection status is unstable. Check the signal cable.
  - Access the input menu to check the input signal.
  - The signal from the PC (Graphics card) is out of the vertical or horizontal frequency range of the product. Adjust the frequency range by referring to the specifications in this manual.
- The position of the screen is incorrect.
  - Check if the graphics card resolution and frequency are supported by the product. If the frequency exceeds the supported range, use PC settings to set the resolution to the recommended value.
  - D-Sub analog signal - Press the **AUTO** button in the remote control to automatically select the optimal screen status that fits into the current mode. If the adjustment is not satisfactory, adjust the display settings manually in the OSD menu. (Depending on model)

- The screen is displayed abnormally.
  - Connect the signal cable that matches with the source input signal.
  - Condensation may appear on the screen. It will disappear in a certain period of time after the product is powered on.
  - The condensation formed inside the product is a natural phenomenon and is not covered under warranty. (IPX6 is a standard to protect the product from 100L of water per minute and not from infiltration of moisture in the air into the set.)
  - When connecting the panel and the Signage box, check their serial numbers and make sure they match. If the serial numbers match, unplug the power cord and plug it in again to run the Clear Panel Noise feature. (The system will reboot automatically after running the feature.)
    You can also run the feature in ⚙ **(Settings)** → [Display] → [Advanced Settings] → [OLED Panel Settings] → [Clear Panel Noise] menu.
- The PC BIOS configuration screen is not displayed correctly.
  - On some PCs, the BIOS configuration screen may not display correctly because the atypical aspect ratio is not supported before the graphics card driver is configured. This is not a problem of the product; it is due to the design of the graphics card's BIOS configuration screen aspect ratio. To access the PC BIOS configuration screen, please connect a standard aspect ratio (4:3 or 16:9) monitor, then perform the BIOS configuration.
- Images are flickering or fluttering on the screen.
  - If you turn the monitor on when it is cold, the screen may flicker. This is normal.
  - Make sure that the current resolution and frequency settings of the graphics card are supported by the monitor.
- Stripes appear in the background.
  - D-Sub analog signal - Press the **AUTO** button in the remote control to automatically select the optimal screen status that fits into the current mode. If the adjustment is not satisfactory, adjust the display settings manually in the OSD menu. (Depending on model)
- Horizontal noise appears or the characters look blurred.
  - D-Sub analog signal - Press the **AUTO** button in the remote control to automatically select the optimal screen status that fits into the current mode. If the adjustment is not satisfactory, adjust the display settings manually in the OSD menu. (Depending on model)
- The image is not displayed.
  - Check that the cable is properly connected between the panel and the Signage box.

Issues Related to Screen (Color)

- Screen has poor color resolution (16 colors).
  - Use PC settings to set the color to 24 bits (True Color) or above.
- Screen color is unstable or mono-colored.
  - Check the connection status of the signal cable. Or, re-insert the PC graphics card.
- Black spots or bright spots appear on the screen.
  - Some pixels (red, green, blue, black) are visible on the screen due to the unique characteristics of the display panel. This is not a malfunction of the product.
- The screen's brightness seems dark.
  - Adjust brightness and contrast again.
  - Backlight may need repair.
  - If the internal temperature of the enclosure rises, the screen's brightness may darken. Clean the heat exchanger or filter in the enclosure periodically.

Issues Related to Sound

- There is no sound output.
  - See if the audio cable is connected properly.
  - Adjust the volume of the product or external device.
  - See if the sound is set properly.
- Sound is too dull.
  - Select the appropriate equalizer sound.
- Sound is too low.
  - Adjust the volume of the product or external device.
- For some models, you will need to purchase external speakers separately since they do not have speakers built-in.

Other Issues

- The power suddenly turned off.
  - Check if the auto-off function is activated on the settings related time.
  - Power source has not being supplied properly. See if the product power cord is connected properly.
  - Check the power control settings.
  - If the internal temperature of the enclosure rises, the power may shut down. Clean the heat exchanger or filter in the enclosure periodically.
  - Check if the fan is working properly.
    View the fan status in ⚙ (SETTINGS) → [General] → [System Information] → [Fan Status].

⚠ CAUTION

- Since afterimage can occur when a specific fixed screen is used for a long time, To reduce after-images, it is recommended not to exceed the recommended daily operation time set for the screen size and to display the video content with a small number of fixed characters or logos.

  Recommended daily operation time (55 inches: 18 hours, 65 inches: 12 hours)
- A few horizontal lines may appear on the screens while running the [Clear Panel Noise] feature. This is normal, so there is no need for concern. If the power is turned on or a power failure occurs while the [Clear Panel Noise] feature is running, the feature may not work properly.
- Turn the power on five minutes after running the [Clear Panel Noise] feature.
- The external speakers connected to the product may make a sound while you are running the [Clear Panel Noise] feature.
- [Clear Panel Noise]: Correct issues that may arise on the screen when it is turned on for a long period of time.
- Use the [Screen Protection Mode Setting] feature in [OLED Panel Settings] to effectively prevent the formation of an afterimage.

Issues Related to Touch

- Touch does not respond.
  - This may occur when the USB cable between PC and product is not connected. Remove the USB cable and connect it again in 10 seconds.
  - Make sure that your PC's power cord is firmly plugged into a power outlet and restart your PC.
  - Touch may not respond when the system is down due to the unstable network. Reconnect the LAN cable or restart your PC.
  - If your PC and product are not connected using a signal cable, touch does not respond. Check the signal cable connection.
  - Touch may not respond when the product is powered off. Check the product power.
  - If you do not use a grounded outlet, it may cause a break or touch error. Always connect the power cord to a grounded outlet.
  - Check if the screen is currently on.
  - A break or touch error may occur as below case.

    If touching the screen only with nail or fingertip

    If holding the tip of the touch pen or near the tip of the touch pen

    If using the touch pen while pressing it with strong force on the screen
- The location of a touch does not correspond to the touch coordinates.
  - This may occur when the touch screen is not calibrated properly. Change your tablet PC settings.
- A touch is applied to a monitor other than the one I intended.
  - This may occur if the monitor is not set as the default monitor when you are using multiple monitors. Set the monitor as the default monitor.
  - This may occur when the touch screen is not calibrated properly. Change your tablet PC settings.
- Multi-touch does not respond.
  - The content played (e.g. Paint, etc.) may not support Multi-touch points. Make sure that you use a content that supports Multi-touch point.
  - Remove the USB cable and connect it again in 10 seconds.
  - Run the content (e.g. Paint, etc.) again.
  - Restart your PC.
  - On the edge of the touch screen, multi-touch may work unstably.
  - If the interval between two touches is too short, a touch error may occur.

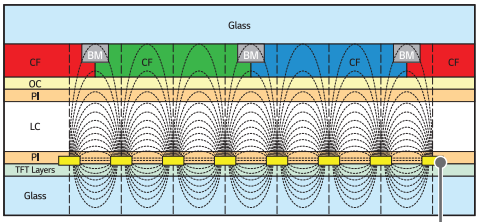
⚠ CAUTION

- Touch compatibility for OS
  - IOS: MacOS v11.5.1 or newer
  - Windows: Windows 10 pro 1803 or newer
  - Chrome: Chrome OS 92.0.4515.162 or newer

Image sticking

- After-image appears when the product is turned off.
  - If you use a fixed image for a long time, the pixels may be damaged. Use the screen-saver function.
  - When a dark image is displayed on the screen after an image with high contrast (black and white or gray), this may cause image sticking. This is normal for display products.
- When the LCD panel displays a static image for an extended period of time, it can cause a voltage difference between the electrodes that operate the liquid crystals. When the voltage difference between the electrodes builds up over time, liquid crystals have a tendency to remain aligned in one direction. During this process, a previously displayed image remains visible. This phenomenon is referred to as image sticking.
- Image sticking does not occur when using constantly changing images but may occur when using a fixed image for an extended period of time. Therefore, it is recommended that you use the instructions below to decrease the likelihood of image sticking occurring when using a fixed image. It is recommended that you change the screen at least once every 12 hours at the very minimum; if done more frequently, the prevention of image sticking is more effective.
- Recommended operating conditions

1 Change the background and the character colors using the same time interval.
- When changing colors, using complementary colors helps to prevent image sticking.



2 Change the image using the same time interval.
- Make sure that the characters or images before changing the image remain in the same location after changing the image.

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