USER GUIDE

LG Digital Signage

(MONITOR SIGNAGE)

Please read this manual carefully before operating your set and retain it for future reference.

Android 8.0

www.lg.com

ENGLISH

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INTRODUCTION

OS is an application operating system for intelligent tablet computers. You can instantly access the Launcher interface by opening the machine, as shown in Fig. 1-1.

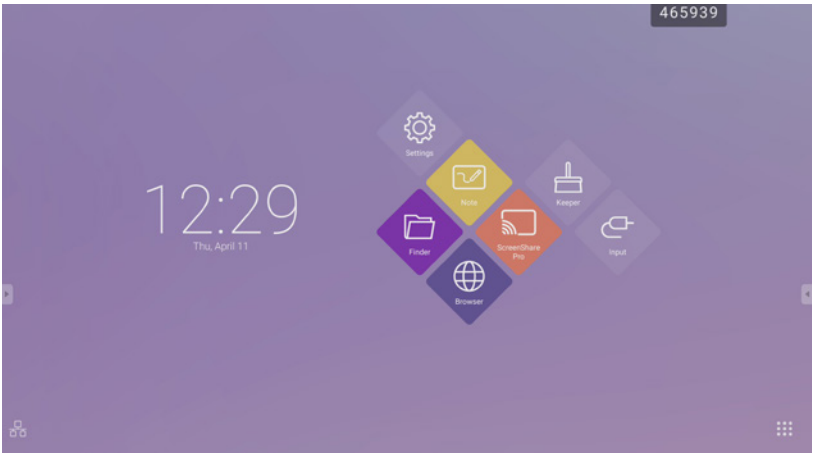


Figure 1-1 Launcher interface

Click the button on the bottom right to access the apps, as shown in Fig. 1-2.

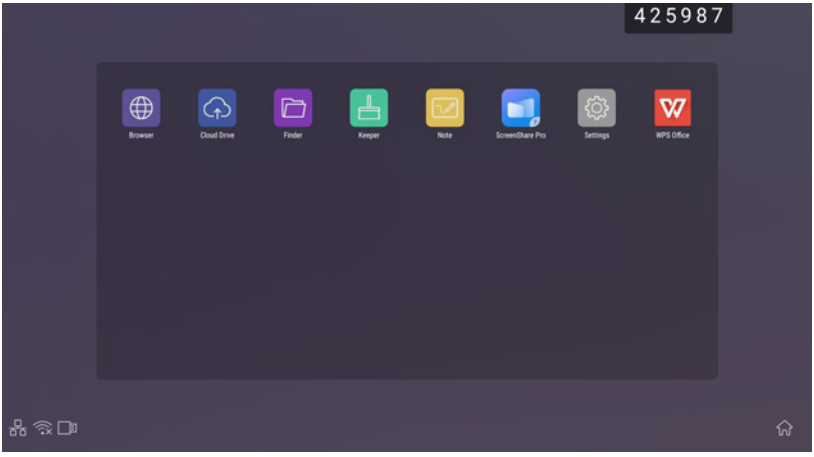


Figure 1-2 APPS

SIDEBAR

- Click the button with ▶ or ◀ on sidebar of both sides to call it out. For example, Fig. 2-1 is shown how to call out the sidebar on the right side. The functions of the sidebar include the Back Key, Home Key, Recent Tasks, Quick Note, Annotation Tools, Screen Freezing, and Small Tools.
- A valid path can be set for the sidebar on the Settings.

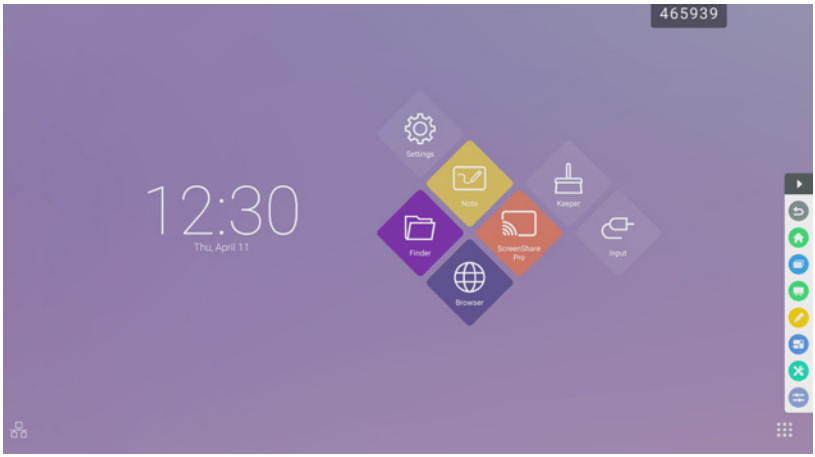


Figure 2-1 Sidebar button

Back Key

Click to return to the last operating interface.

Home Key

Click to return to the desktop.

Recent Tasks

Click to pop out the window and display the recently operated tasks. You can delete all the progresses by one key or delete progresses by dragging left or right.

Quick Note

Click to open Note. You can write, erase, select objects, etc. For details, please see “3 Note”.

Annotation Tools

Click to pop out the annotation tools as shown in Fig. 2-5-1. The tool includes such functions as annotation, gesture erasing, screenshot, and exit. When the quick note is being used, this function is unavailable.

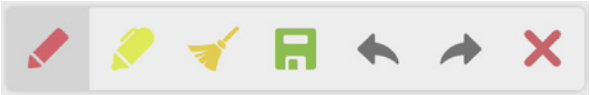


Figure 2-5-1 Annotation tool

- Annotation: After accessing this mode, you access the annotation mode completely, and you can directly write and note on the interface. You can switch the pen color by clicking it.
- Clean: Click to clean the whole screen
- Screenshot saving: Click to save the current screenshot.
- Exit: Click to exit the annotation mode.
- Cancel input: Click to cancel the last input of the annotation.
- Rerun input: Click to rerun the input of the annotation which has been cancelled.

Screen Freezing

Click the button to pop out the screen freezing tools. You can freeze the screen, and at the same time zoom in or out the current screen.

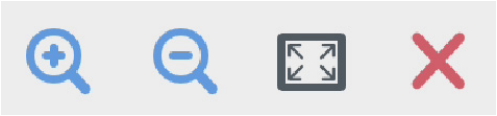


Figure 2-6-1 Screen freezing tools

- Zoom in: Click to zoom in the current screen.
- Zoom out: Click to zoom out the current screen.
- Return: Click to return to the original size of the screen.
- Exit: Click the button to exit the screen freezing.

Small Tools

Click to pop out the tool choice box, including spotlight, count down, stop watch, and air class.

Spotlight

- Click the icon to open the spotlight, as shown in Fig. 2-7-1-1. The spotlight can be used to make audience focus their attention on the location you need to emphasize
- Drag in the black area to move the location emphasized by the spotlight.

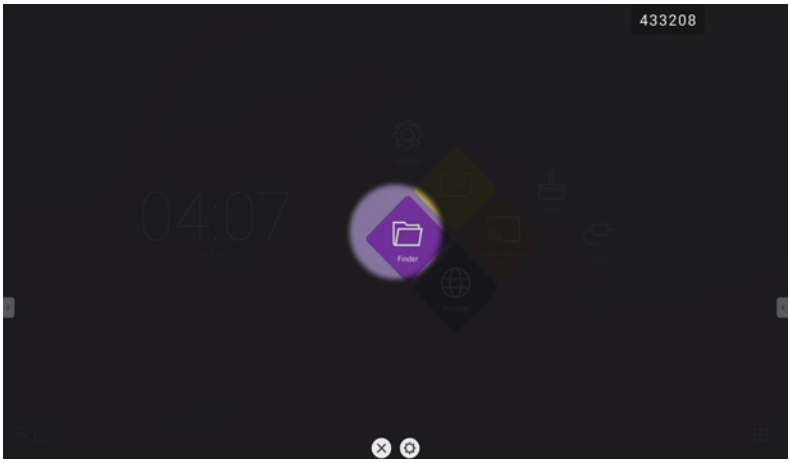


Figure 2-7-1-1 Spotlight interface

- [Settings] Click to pop out the window, as shown in Fig. 2-7-1-2.
  - [Scale] Drag the slider to adjust the range of the spotlight. You also can adjust the range of the spotlight by two fingers.
  - [Alpha] Drag the slider to set the transparency of the part sheltered by the spotlight.
- Turn off the spotlight. Click to turn off the spotlight.

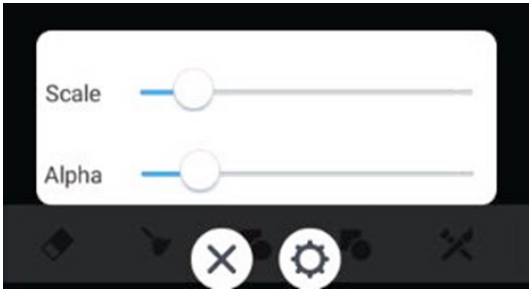


Figure 2-7-1-2 Spotlight interface

[CountDown]

- Click the button to pop out the countdown small tool, as shown in Fig. 2-7-2-1.
- Click the [START] button to start the count down, as shown in Fig. 2-7-2-2.
- Click [PAUSE] to pause the count down. Click the [RESET] button to reset the count down to the initial status.

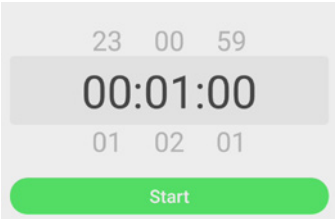


Figure 2-7-2-1 Initial interface of the countdown

Figure 2-7-2-2 Countdown interface

Stop Watch

Click the button to start the stop watch, as shown in Fig. 2-7-3-1. Such functions as stop watch, pausing the stop watch, continuing the stop watch, and reset are included. When you touch the other area, the Stop watch will move to the bottom of the window.

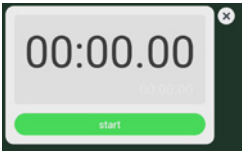


Figure 2-7-3-1 Stop watch

Air Class

- Click and enter the class. After students scan the QR code to join the class, a teacher clicks [ENTER THE CLASS].
- Please make sure you are in the same LAN with the IFP.

Fig 2-7-4-1 QR code

Fig 2-7-4-2 Menu bar

Voter&Judge

Click the button or button, and the answer bar appears on the lowest corner of the teaching interface. Click [Single choice] or [Multiple choice] to select the question type.

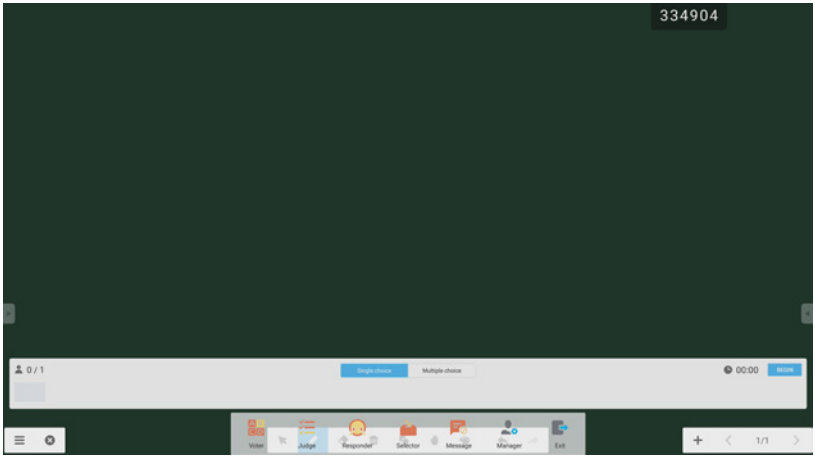


Fig 2-7-4-1-1 Voter

Answer: Click [Begin] to start answering question. After students answer the question, their names turn blue.

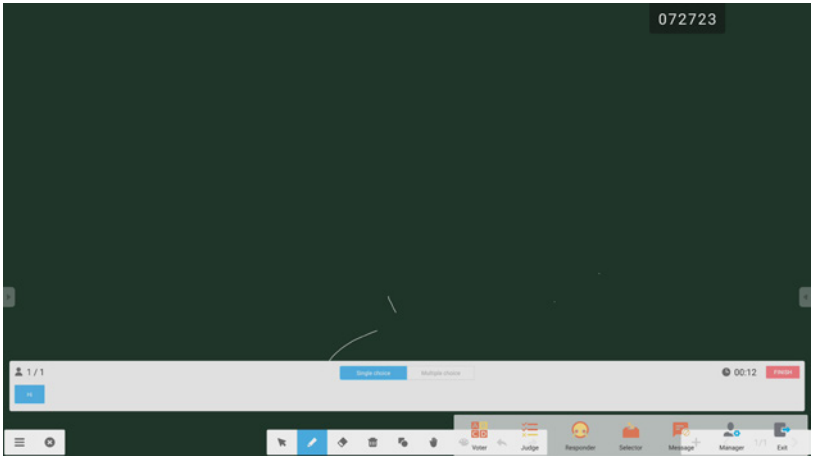


Fig 2-7-4-1-1 Voter

Answers statistics: Click [Finish] to finish answering questions, and you can access the answers statistics page.

Fig 2-7-4-1-3 Answers statistics

Choose the right answer(s), and calculate the accuracy.

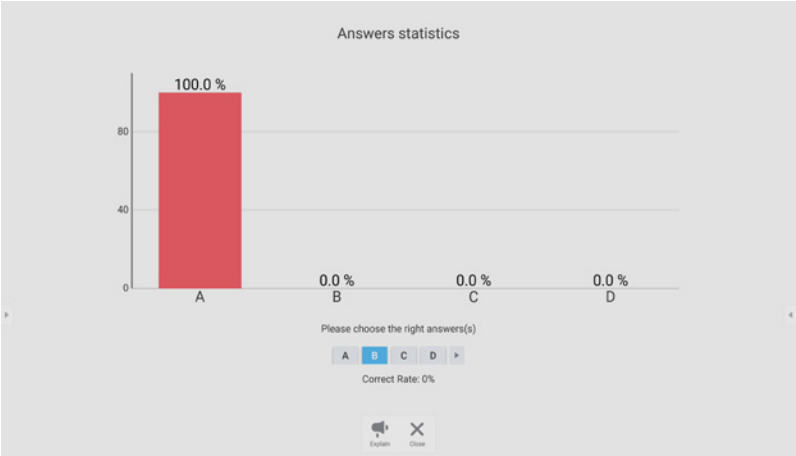


Fig 2-7-4-1-4 Answers statistics

Explain: Click the [Explain] button on the answers statistics to access the teaching page. Users can view the question explanation while checking the answers situation.

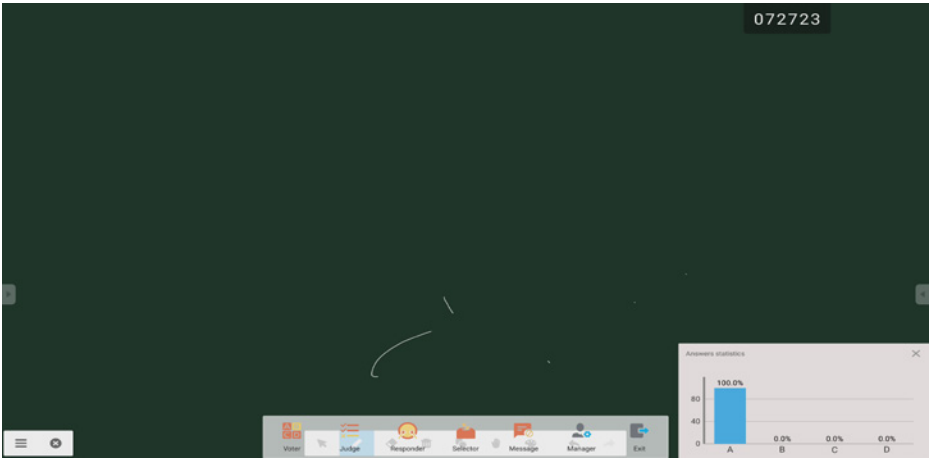


Fig 2-7-4-1-5 [Explain]

Responder

Click the button to access the responder part. Students can responder by pressing the [OK] key.

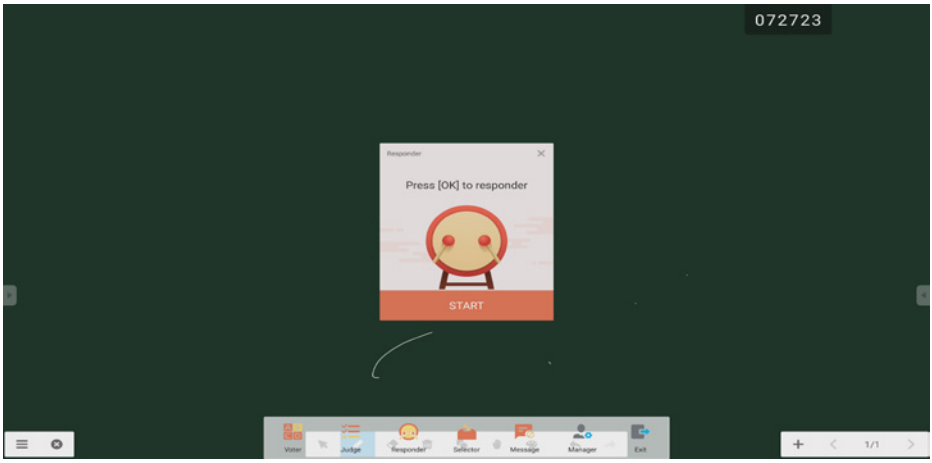


Fig 2-7-4-2-1 Responder

Selector

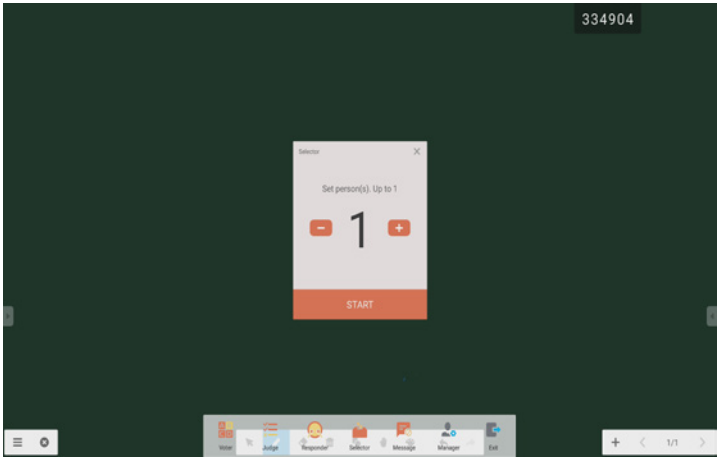


Fig 2-7-4-2-1 Selector

Click the button to choose students to answer the questions.

Message

After activating the message, students can publish the message comments on the mobile phone. The message comments are updated on the tablet computer in real time.

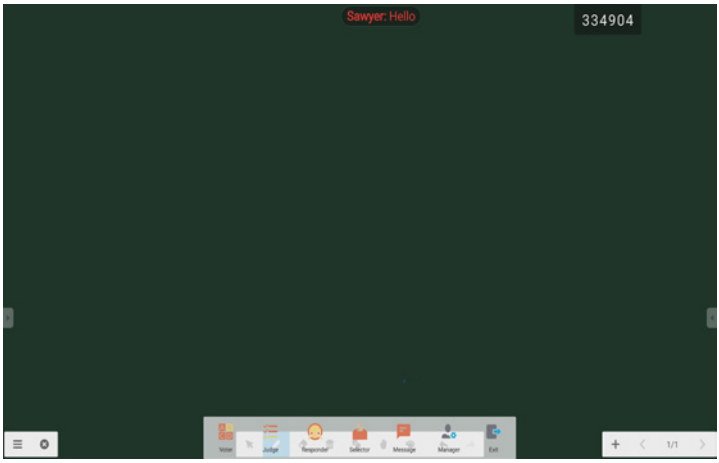


Fig 2-7-4-4-1 Message

[Manager]

Click the [Manager] button to pop out the QR code, for ease of students in the class to join in the class.

Fig 2-7-4-5-1 [Manager]

Touch Menu

Click to access the Touch Menu.

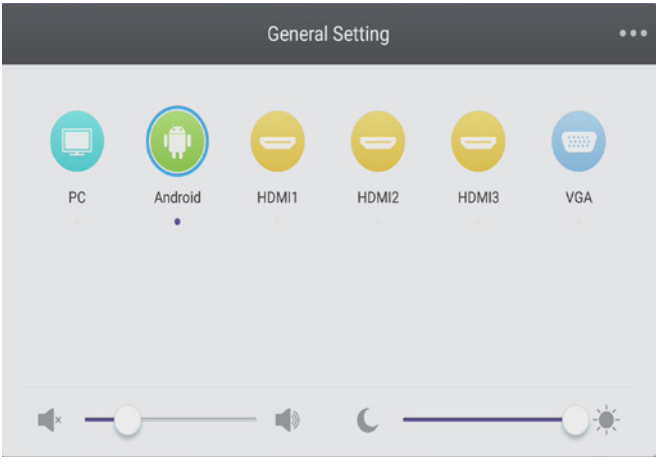


Fig 2-8-1 [General Setting]

NOTE

Click to open the Note, as shown in Fig. 3-1.

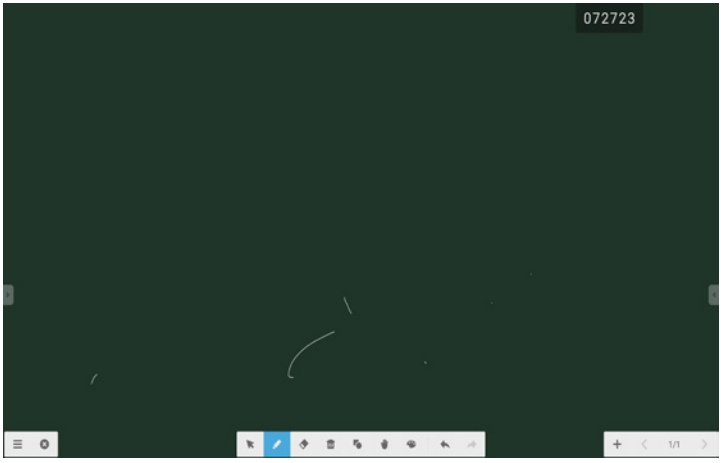


Fig 3-1 Note

Menu

Click to pop out the menu as shown in Fig. 3-1-1. The menu provides background switch and saving options for users.

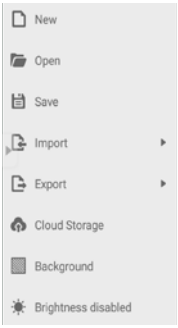


Fig 3-1-1 Start menu

- [New] Click the button to create a whiteboard file.
- [Open] Click the button to pop out the file selection window. You can open the local .enb or .iwb format file.
- [Save] Click the button to save the current document to the file browsing in .enb format.
- [Import] Click the button to import the IMG, PDF, SVG file to the whiteboard courseware.
- [Export] Click the button to export the current whiteboard courseware in IMG, PDF, SVG, or IWB format.

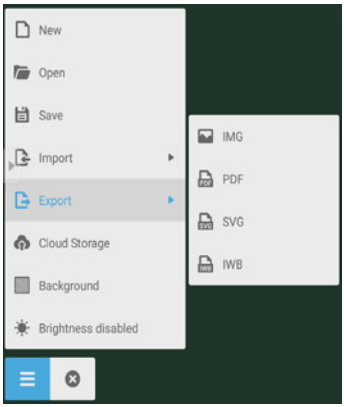


Fig 3-1-2 [Export]

- [Cloud Storage] Click the button to export and upload the current file to Google Drive and OneDrive.
- [Background] Click to switch the current page background color, which is dark green by default. Click any color to switch the page background color to the color you select.
- [Brightness disabled] Click to activate the automatic brightness adjustment, which is disabled by default.

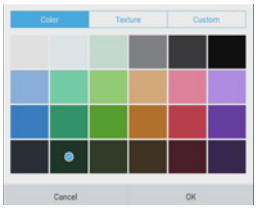


Fig 3-1-3 Color Background

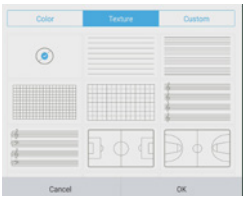


Fig 3-1-4 Texture Background

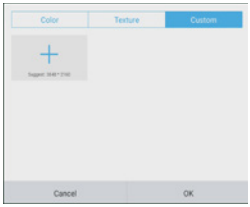


Fig 3-1-5 Custom Background

Exit

Click the close button to return to the main interface. If the current document is not saved, the saving prompt window is popped out, and users can enter the file name and save the current document; if the current document is saved, then you do not need to save it again. You can directly exit the software and return to the main interface.

Selection

- Click the button to perform selection operation on the objects of the page. By drawing any close figure or clicking the object on the interface, you can move or zoom in or out the object you select, as shown in Fig. 3-3-1.
- Separation of hand and SmartPen: When the toolbar corresponding to the Note software is selection function, users can directly write by using the SmartPen on the Note without switching the toolbar to the writing state.

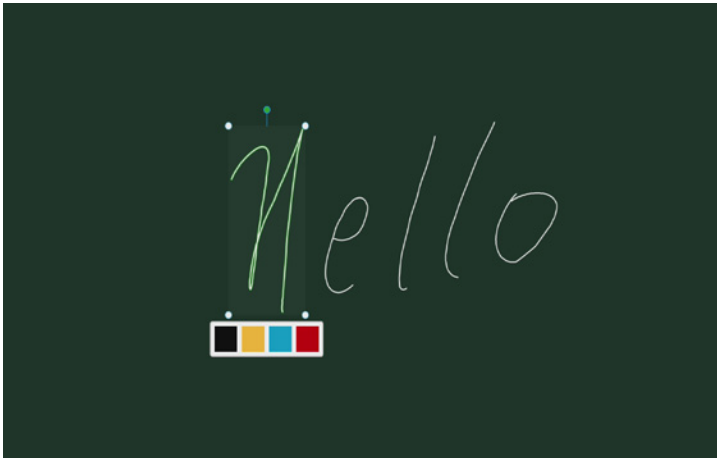


Fig 3-3-1 Selection

1) Move: Select by circling and drag the selected object to move the current object to any location.

2) Zoom in or out.

   a. Select by circling and operate the selected object by two points to zoom in or out the current object, and change the color of the current object to black, yellow, blue or red.

   b. Operate the page by two points to globally zoom in or out the current page.

Pen

Click the pen button to pop out the pen setting window. After setting the handwriting size and color, the handwriting will appear on the place you need to write when you slide.

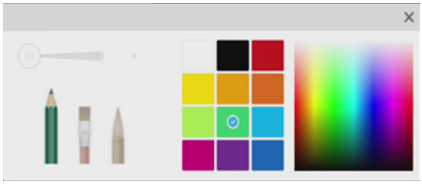


Fig 3-4-1 Pen setting

- Pen: Including pencil and a row of brushes. Pencil is set by default.
- Handwriting size: Slide the handwriting size slide bar to change the handwriting size.
- Handwriting color: Click the color of the color disk on the right side to change the handwriting color as required.

Eraser

Click to select the eraser. Select by circling the object you need to erase.

Clean

Click to clean the whole screen.

Shape

- Click the shape button to pop out the shape window.
- We provide 2D and 3D shapes you can choose.

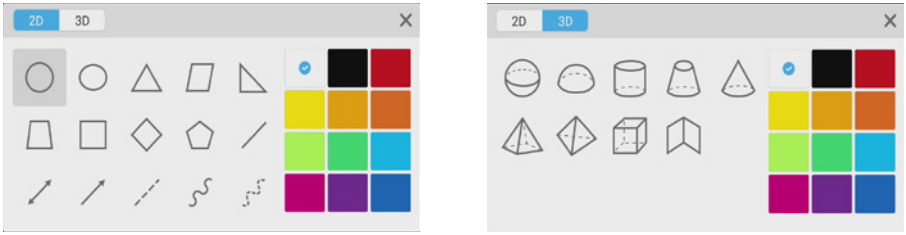


Fig 3-7-1 Shape window

Roaming

Click to select the roaming mode. You can move the whole screen with sliding

Drawing Board

Click the button to call out the drawing board, as shown in Fig. 3-8-1.

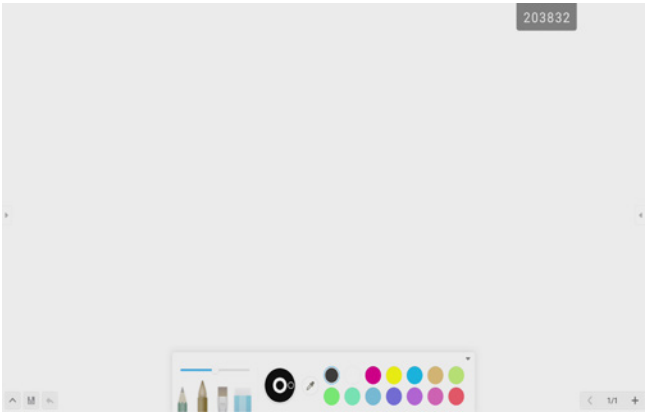


Fig 3-8-1 Drawing board interface

- Pen: Pencil is selected by default, including pencil, writing brush, a row of brushes, eraser.
- Palette: Select the color and click the palette to color in the form of rotating.
- Color picker: Click to activate the color picker and the round color picker appears on the drawing board area. Drag it to the color you want and click to finish the color picking. In this case the pen color is the selected color.
- Color disk: Users can change the color of the color circle by changing the color of the color disk.

Withdrawing

Click the withdrawing button to withdraw the previous operation.

Adding Page

Click the button to add new page.

Previous Page

Click the < button to return to the previous page. If the current page is the first page, then you cannot click this button.

Pagination

Click 2/7 pagination to load the thumbnail of all pages. You can also directly click the thumbnail to display.

Next Page

When the current page is not the last page, click the > button to switch to the next page of the current page.

FINDER

Click to pop out the file browsing as shown in Fig. 4-1. It can browse the files saved in the system such as document, whiteboard writing, video, picture, and audio. In addition, it can automatically identify external USB device, browse files according to category, search for the files, etc.

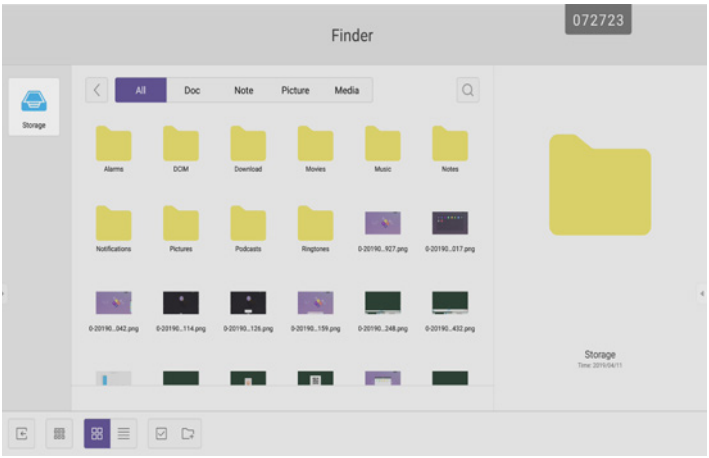


Fig 4-1 File browsing

Browsing according to Category

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

- [All]: When accessing internal storage module, all resources are displayed by default.
- [Doc]: Click Doc to browse PPT, Word, Excel, PDF documents.
- [Note]: Click Note to browse files and quick screenshot saved by the whiteboard.
- [Picture]: Click Picture to browse the stored pictures, formats like .jpg, .jpeg, .png, .bmp, and .gif are supported.
- [Media]: Click Media to browse the stored videos. Formats such as .avi, .mp4, .vob, .mkv, .mov, .mpeg are supported.
- 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”.

Resource operation

Users can edit the resources stored in the system, including creating, selecting, selecting all, cancelling selecting, copying, pasting, cutting, deleting, renaming, and more.

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

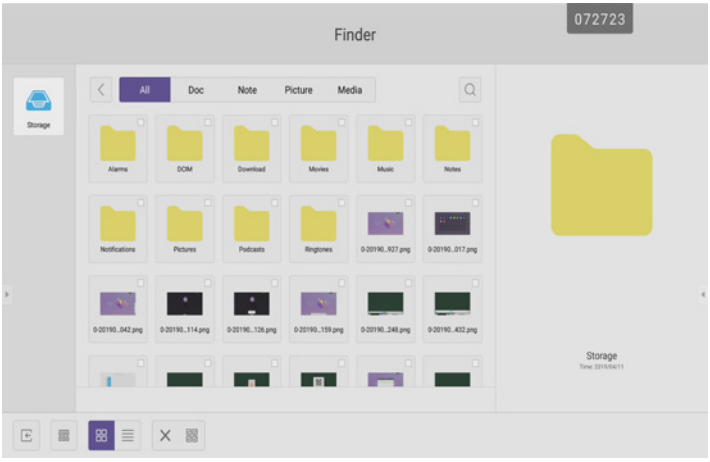


Fig 4-2-1 Selecting interface

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

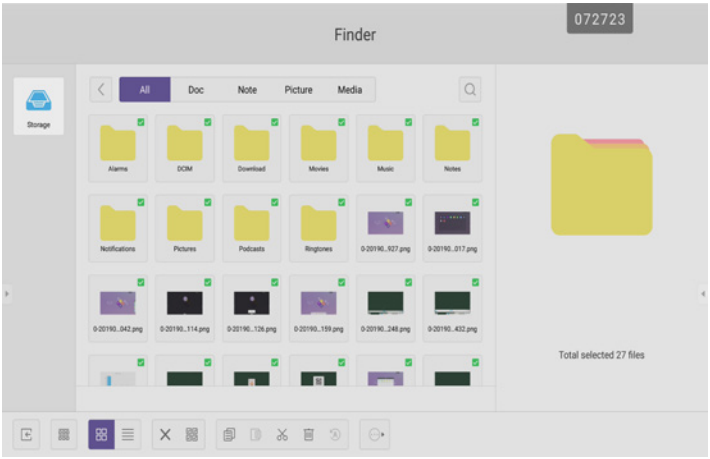


Fig 4-2-2 Selecting all interface

- Cancelling selecting: Click to cancel all resources that have been selected currently.
- Creating: Click to create new folders under the current directory.

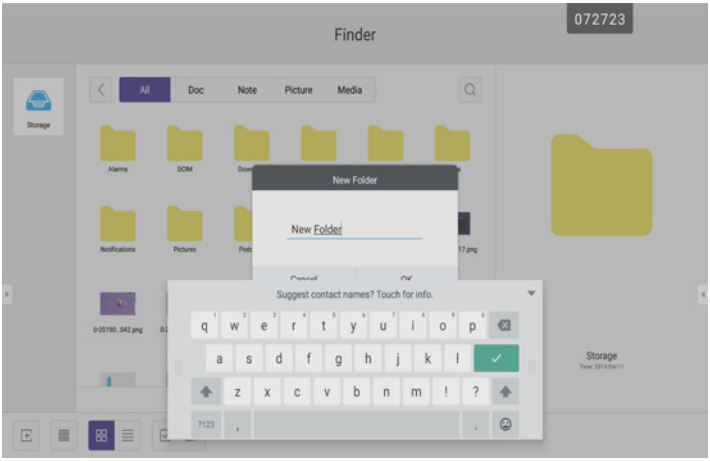


Fig 4-2-3 New Folder

- Copying: When the resource is selected, the copy button will appear. Click to copy the currently selected resource.
- 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.
- 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.
- 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.
- Click a certain resource, the resource operation menu will pop out at the bottom of the window. You can perform operations such as deleting, copying, cutting, pasting, and renaming on the current resource.

Ordering menu

Click the ordering button to pop out the menu as shown in Fig. 4-3-1. You can order the resources, including ordering according to the name, type, size, and time. Resources are ordered according to name by default.

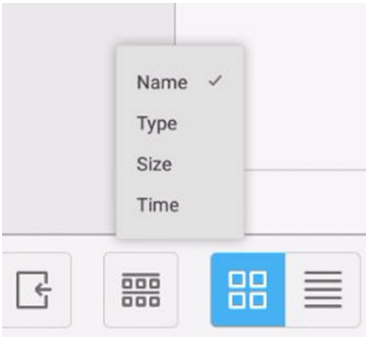


Fig 4-3-1 Ordering menu

- [Name]: When [Name] is selected, the displayed resources will be ordered according to resource name.
- [Type]: When [Type] is selected, the displayed resources will be ordered according to resource type.
- [Size]: When [Size] is selected, the displayed resources will be ordered according to resource size.
- [Time]: When [Time] is selected, the displayed resources will be ordered according to resource time.

Tile: Click to display the resources in the form of icon. The resources are displayed in the form of icon by default, as shown in Fig. 4-3-2.

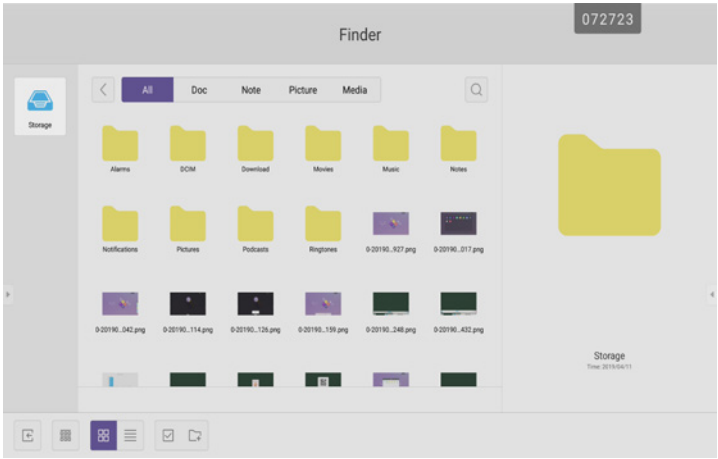


Fig 4-3-2 Tile display

List: Click to switch to display the resources in the form of detailed information, as shown in Fig. 4-3-3.

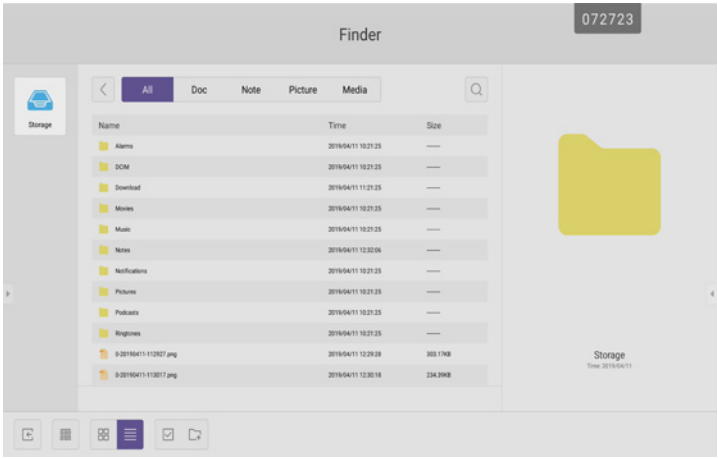


Fig 4-3-3 List display

Exit

Click to exit the file browsing, and return to the homepage.

SETTINGS

Click the button to open setting, as shown in Fig. 6-1. You can tap to click and select the setting option, including [Wireless & networks], [Device], and [Personal].

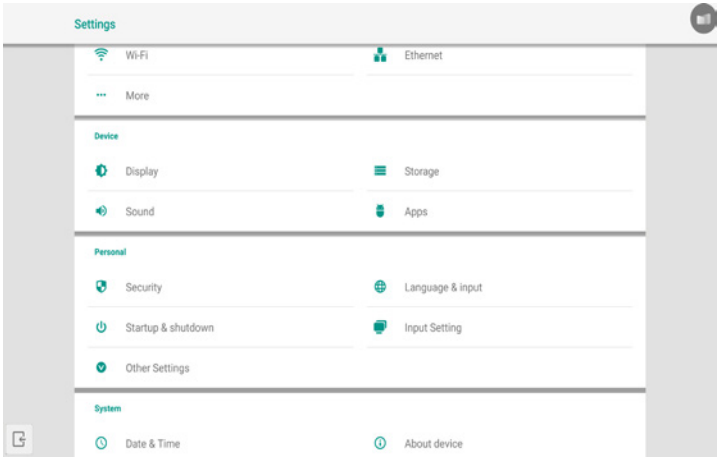


Fig 6-1 Setting menu

[Wireless & networks]

You can set whether to enable the network, and view the network, including the MAC address, IP address, mask, and gateway.

* Wi-Fi Direct and Bluetooth are not supported.

[Device]

Display: setting wallpaper, and Pixel shift.

[Personal]

- Security: All the CA certificates you have trusted, setting USB Lock
- Language & Input: Setting language and input method
- Startup and shutdown: Setting On/Off, automatically shutting down when there is no signal, setting DPM
- Input Setting: Setting labels for each external input
- Other Setting: Setting the slide bar and float bar, Single Finger and Multi-finger modes, setting the security mode

[System]

Setting Date & time, and About Device.

BROWSER

When the network is normally connected, click the button and enter the website to access the web page.

[KEEPER]

- Click to pop out the [Keeper] interface as shown in Fig. 8-1. You can perform memory optimization, garbage clean, and hardware checking on the intelligent tablet computer.

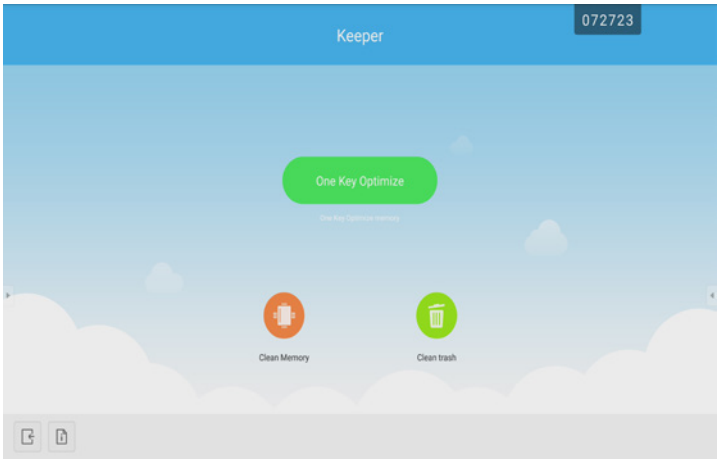


Fig 8-1 [Keeper]

- [One Key Optimize]: Click to optimize memory, clean the disk garbage and check hardware problem in one key.
- [Memory Clean]: Click to optimize the memory.

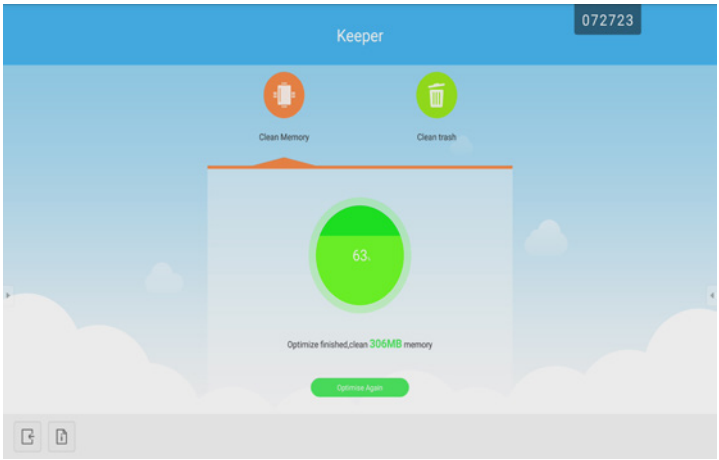


Fig 8-2 [Memory Clean]

- [Garbage Clean]: Click to clean the disk garbage.

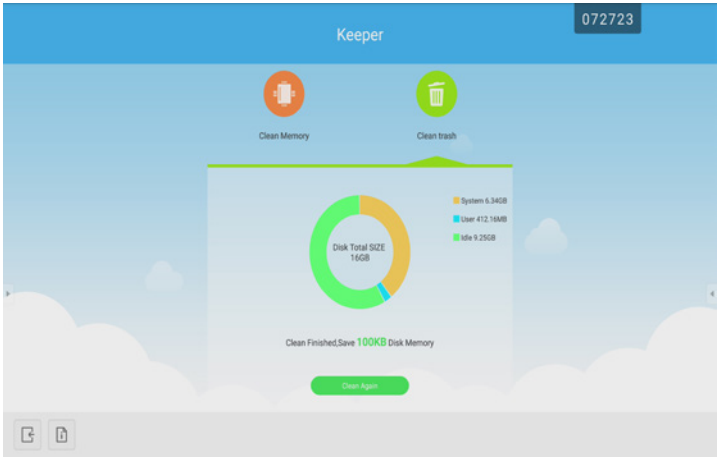


Fig 8-2 Garbage Clean

- Version information: Click to view the system version information of the machine.
- Exit: Click to exit the [Keeper] and return to the main interface.

TOUCH MENU

Click the button, or Finger sliding upwards from the bottom of the screen to access the Touch Menu.

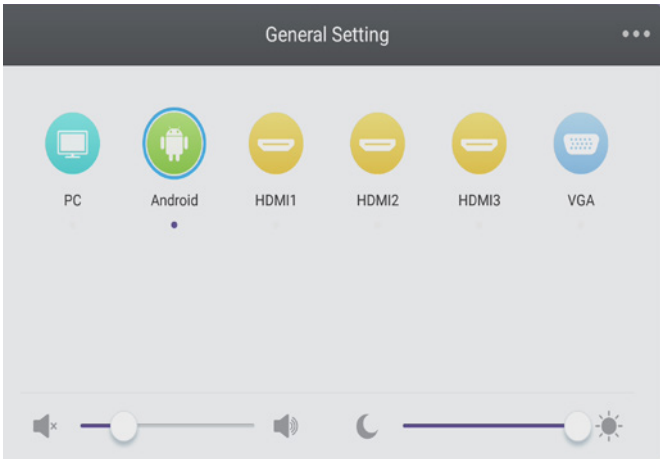


Fig 9-1 [General Setting]

- PC: Select the PC input.
- Android: Select the Android input.
- HDMI: Select the HDMI input.
- VGA: Select the VGA input.
- AV: Select the AV input.
- DVI: Select the DVI input.

* The switching of the signal input will take a few seconds.

CLOUD DRIVE

Click the button to connect to the Cloud Drive.

SCREEN SHARE PRO MANUAL

Software Introduction

Screen Share Pro is a Wi-Fi-based software for multiple devices to simultaneously interact with IFP (short for “interactive flat panel”).

1 Once connected to Wi-Fi, users can transmit files (including audio, video and photos) from devices to IFP for demonstration.
2 Users can mirror IFP on their mobile devices, and control IFP via mobile devices.
3 With Screen Share Pro, IFP can reversely control Windows and Mac.
4 Users can cast screen on IFP via the camera on devices.

Installations

Operating Environment

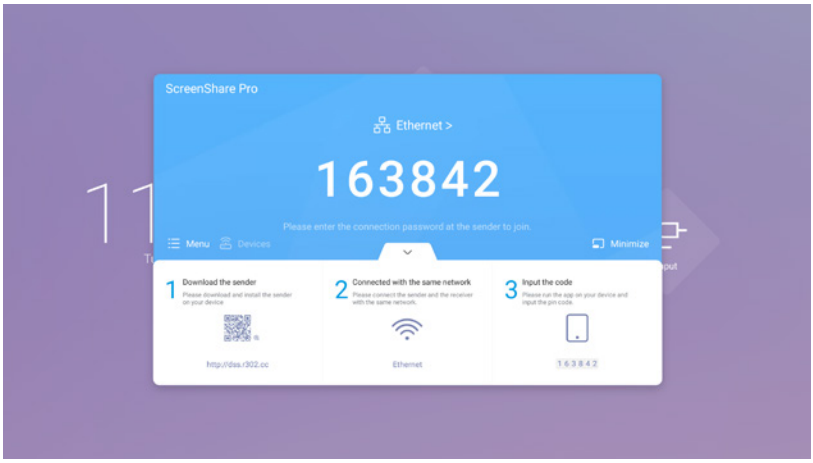
- Server (also called “receiver”)
  - Android 5.0 or later designed by the manual provider
- Client (also called “sender”)
  - Android 5.0 or later
  - iOS 8.0 or later
  - Windows 7/8/10
  - MacOS 10.10 or later
  - Chrome OS (only version 1.0.7 of SSP can work on Chrome OS)

Server Installation

Enable third-party app installation on Android; Choose Android Server portfolio, double click to install application.

Client Download & Installation

- After the software is installed, click the icon on the desktop. Enter the main interface.



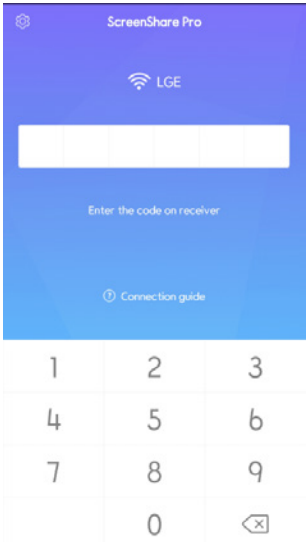
Picture 2-3-1 Server Main Interface

Install the software in Android, iOS, Windows, and MacOS clients as follows:

- Scan the QR code with mobile devices or enter the address in your PC web browser to download APK (application kit). It will automatically recognize different types of devices and thus provide the correct APK.
- In the case of iOS (iPhone OS) client, after scanning the QR code, it will lead to the app store, where you can download the app.

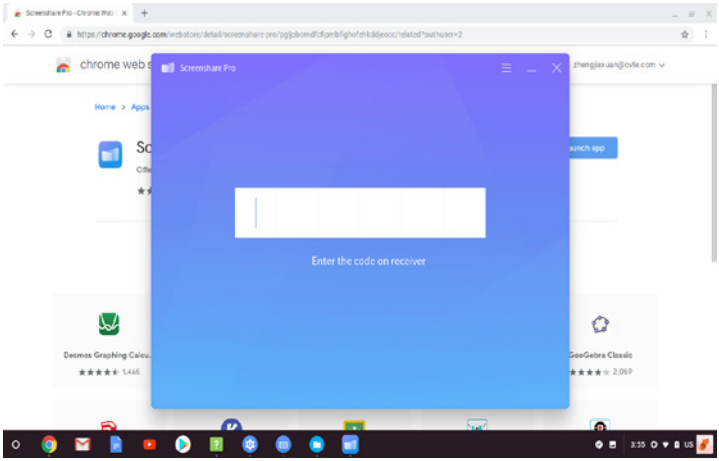
Picture 2-3-2 Client Download

- Install the app on your mobile devices. Enter the interface.



Picture2-3-3 Installation Completed

- Enter the code on receiver and start sharing screens.



Server Introduction

After installing server application, follow the user guide to connect devices to IFP.

Picture 3-1-1 Server Interface

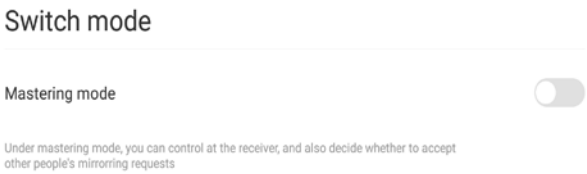
1 Download client application either by scanning QR code or
2 Entering address in web browser.
3 Make sure client devices are connected to the same network as IFP.
4 Enter the same code on devices to connect with IFP.

Permission Mode

Click [Switch mode] in [Menu] column.

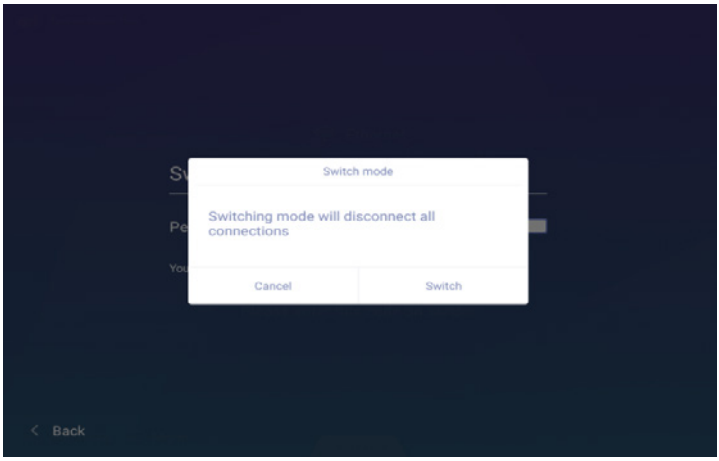
Picture 3-1-2 [Menu]

Switch mode by clicking the button. Please activate software before using switching to master mode.



Picture 3-1-3 [Switch mode]

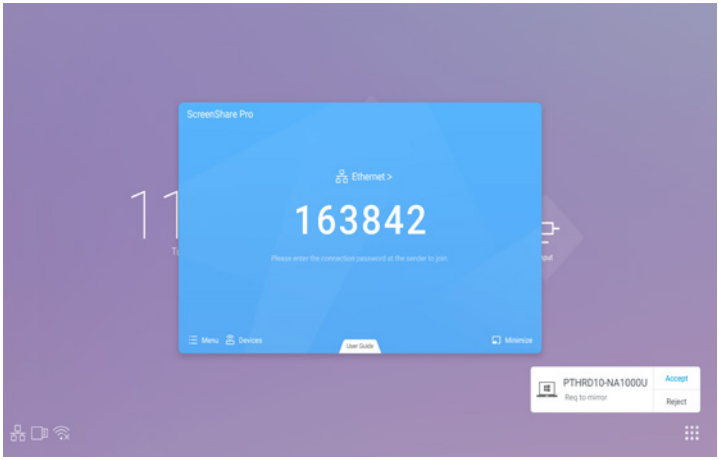
When choosing master mode, you will be reminded that all connected devices would be disconnected.



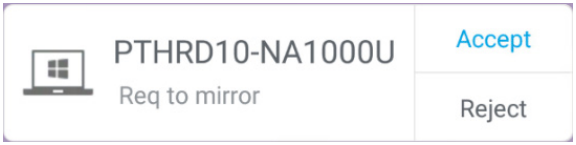
Picture 3-1-4 Switch Mode Reminder

In master mode, all clients need to be accepted by IFP server before they could share screen. There are two admitting ways.

1 Requests could show in a pop-up window. Click [Accept] to approve or [Reject] to disapprove devices.

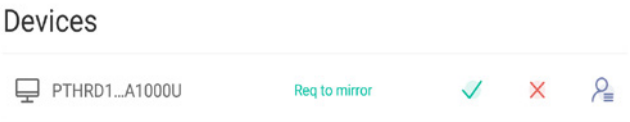


Picture 3-1-6 Request Pop-up Window



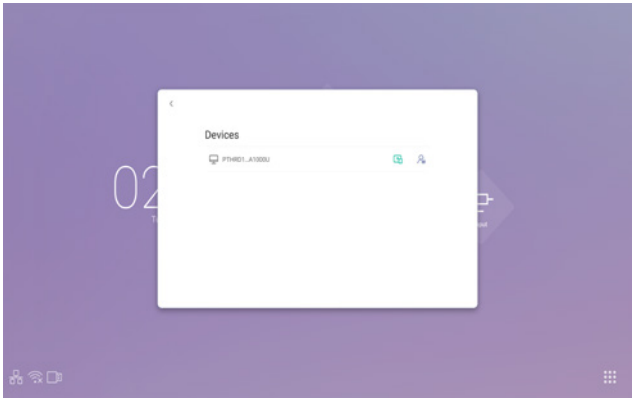
Picture 3-1-7 Click [Accept] or [Reject]

2 Click devices column to see requests. Choose ✓ to accept or ✕ to reject them.



Picture 3-1-8 Devices List

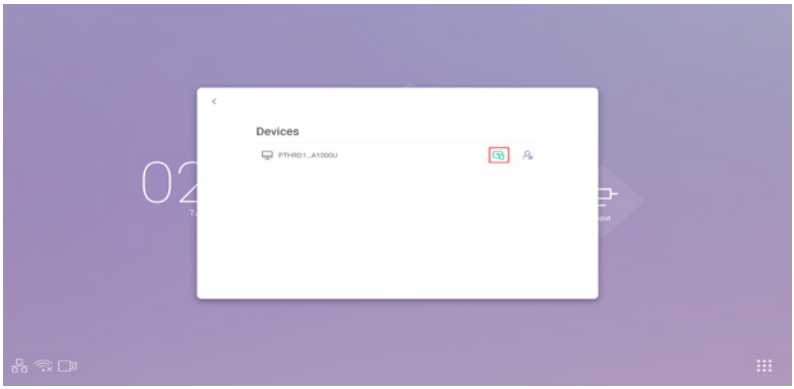
3 After accepted by server, client devices could start screen share by either operating on client devices or clicking on IFP. Also, server could end screen share anytime.



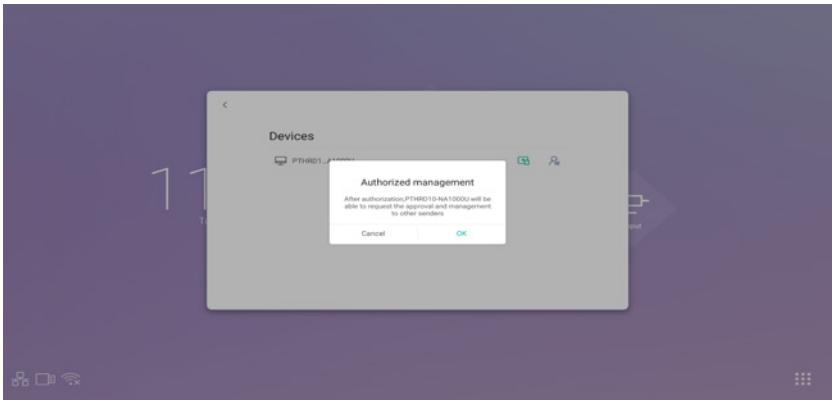
Picture 3-1-9 Devices Status

Screen Share from Server

All connected devices would be listed in column. Click to authorize devices to approve requests from others.



Picture 3-2-1 Authorize Devices



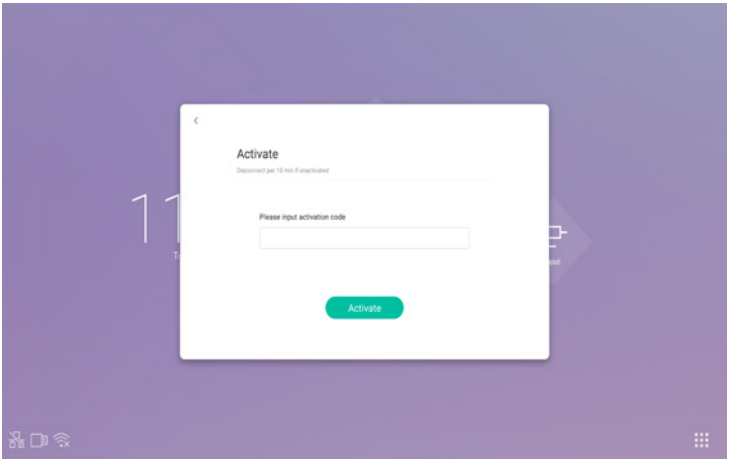
Picture 3-2-2 Authorize Devices Reminder

Server Activation

1 Click [Activation] in [Menu] column.

Picture 3-3-1 [Activation]

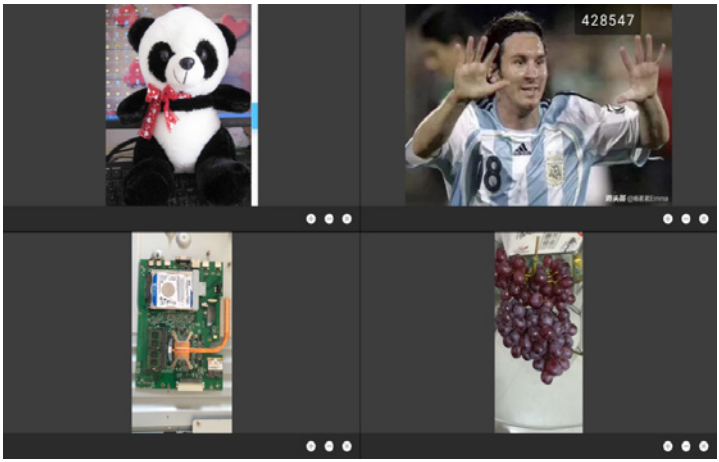
2 Enter activation interface, input code, then click [Activation].



Picture 3-3-2 Input Code

Screen Splits

Four devices could share screen at the same time.

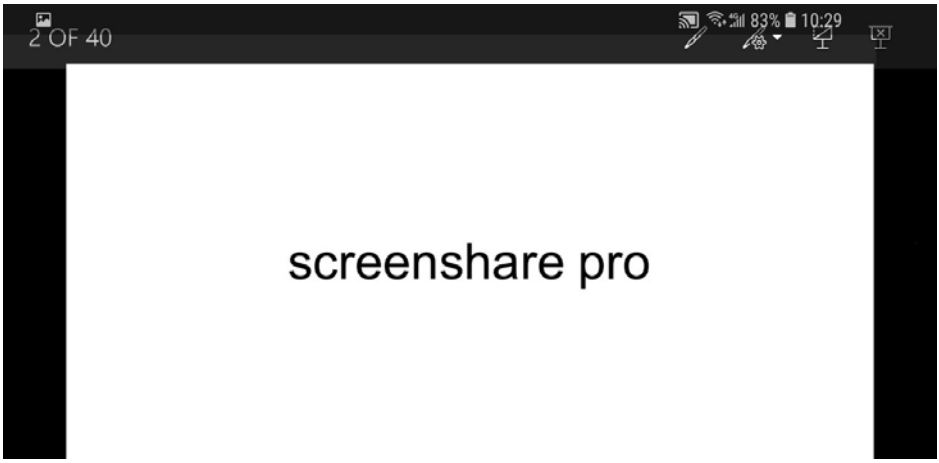


Picture 3-4-1 Screen Share Split

Click +/- to zoom in/out; click X to exit screen share.

Files Demonstration

Supports Power Point Slides, Keynote etc.



Picture 3-5-2 Playback, Annotations & Full Screen Mode

- Swipe from left to right to play last page, from right to left to access next page.
- Users can make annotations, play slides and exit full screen mode on their devices.

Client Introduction

Clients include mobile devices (Android & iOS), PC and Mac.

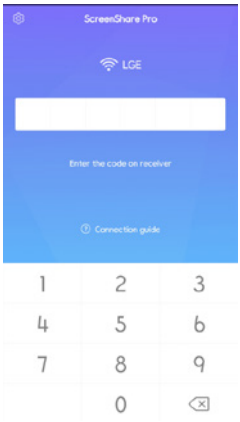
Mobile Device Operation

- Mobile devices include Android devices and iOS devices. App functions are similar for both, with micro difference in UI (user interface).
- These functions include media (audio & video) upload, photo upload, camera, remote and desktop. The following instructions are in the case of iOS mobile devices.

* Tips: The software only supports vertical screen.

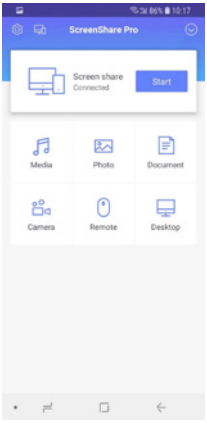
Start up

Click to enter the interface as follows.



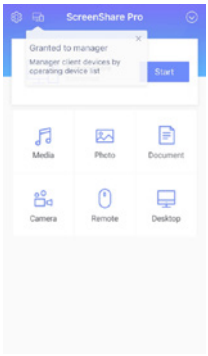
Picture 4-1-1-1 Connection Interface

Enter the code on IFP to connect devices and enter the interface as follows.

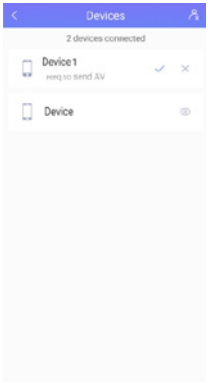


Picture 4-1-1-2 Main Interface

After authorized by server, there would be a new column in client interface, where the authorized device could see requests from other devices and to accept or reject requests.



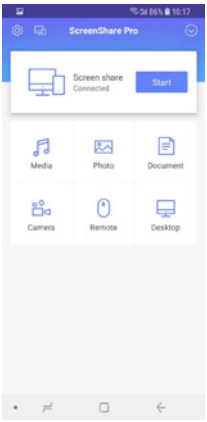
Picture 4-1-1-3 Interface after Authorized



Picture 4-1-1-4 Click to Accept/Reject

Screen Share

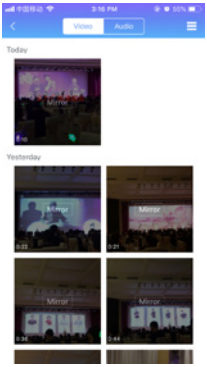
Click [Start] button to start screen mirroring.



Picture 4-1-2-1 Mobile Device Screen Share Interface

Audio/Video Upload

Click Media to upload audio/video.

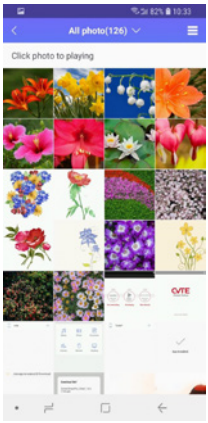


Picture 4-1-3-1 Audio/Video Upload

- Click the preview image of audio/video to play it on IFP.
- Click Audio to switch from defaulted video upload interface to audio one.
- Click to switch from defaulted preview image display to details display.

Photo Upload

Click to upload photos.



Picture 4-1-4-1 Photo Upload Interface

- Click the preview image of photo to play it on IFP.
- Click All Photos(519) to switch from defaulted camera photo preview to other albums.
- Click to switch from defaulted preview image display to details display.

Files Upload

Files Upload: Click to enter files upload mode.

Picture 4-1-5-1 Files Upload Interface

- Click Mirror to start mirroring files on IFP.
- Remote control. After accepted by server, client devices would enter remote mode automatically as follows. Instruction for this please see 4-1-7 Remote.

Picture 4-1-5-2 Remote Mode

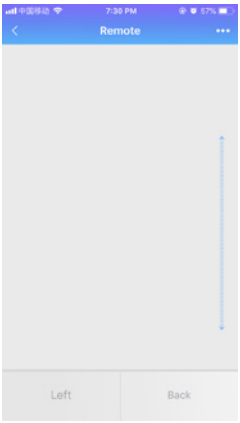
Camera

Click Camera to enter camera mode, click so that you can cast screen onto the IFP via the camera on your devices.

Picture 4-1-6-1 Camera Interface

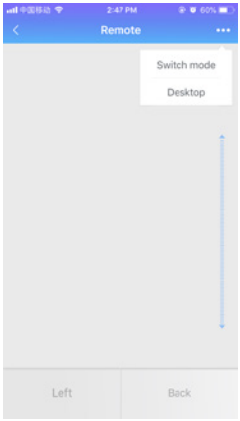
Remote

Click to enter remote-touch mode interface.

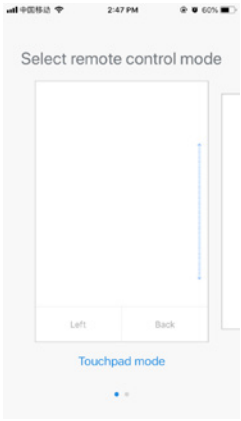


Picture 4-1-7-1 Remote-touch Mode Interface

• [Switch mode]: Remote includes touchpad mode and motion mode.
Click •••, choose [Switch mode], swipe to choose your desired mode.



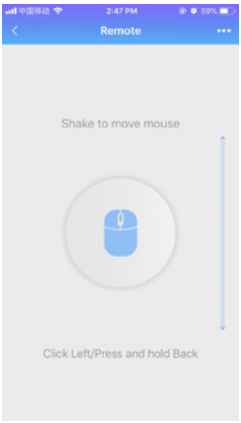
Picture 4-1-7-2 [Switch mode]



Picture 4-1-7-3 Swipe to Choose

- Touchpad mode: As is shown in picture 4-1-7-1, users can remotely control IFP by clicking on the touchpad. Two buttons are available.

Click [Left] to simulate the mouse left-click button; click [Back] to simulate the mouse right-click button. Move with one finger on touchpad and the mouse arrow on IFP will move simultaneously.

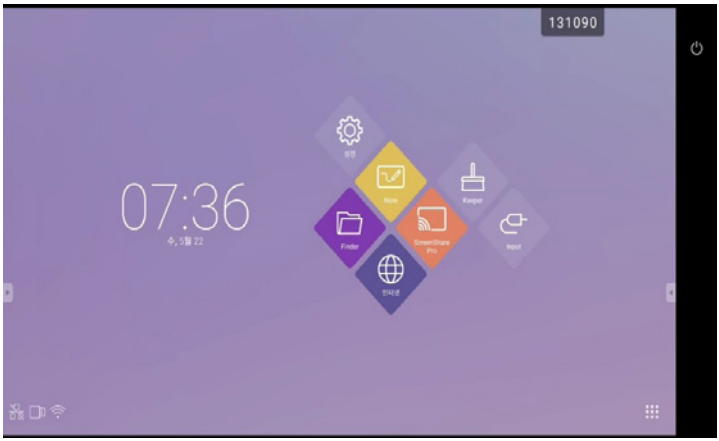


Picture 4-1-7-4 Motion Mode

- Motion mode: As shown in picture 4-1-7-4, tilt your devices to move the mouse. Click to choose.
- Back to desktop: Click Desktop to exit remote mode and go back to desktop.

Desktop

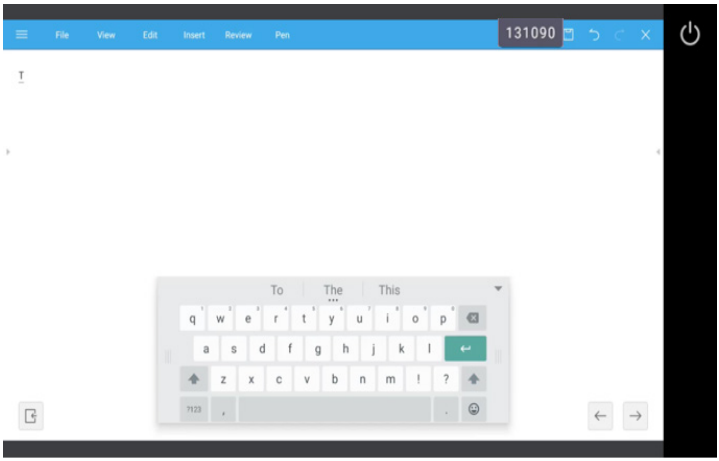
Click to enter desktop synchronization mode. In this mode, users can view IFP screen and remotely control IFP via mobile devices.



Picture 4-1-8-1 Desktop Synchronization Mode

Supported touchpad gestures are as follows:

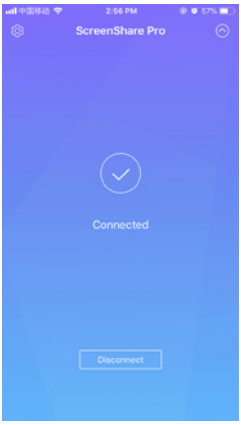
- One click to simulate mouse left-click button; long press to simulate mouse right-click button;
- Drag with one finger on the touchpad to move icons/windows;
- Place two fingers on the touchpad and pinch in to zoom out and stretch out to zoom in.
- Users could write on the mobile devices and send to IFP.



Picture 4-1-8-2 Desktop Synchronization

Disconnection

Click to enter disconnection interface. Click to disconnect client devices and go back to main interface.

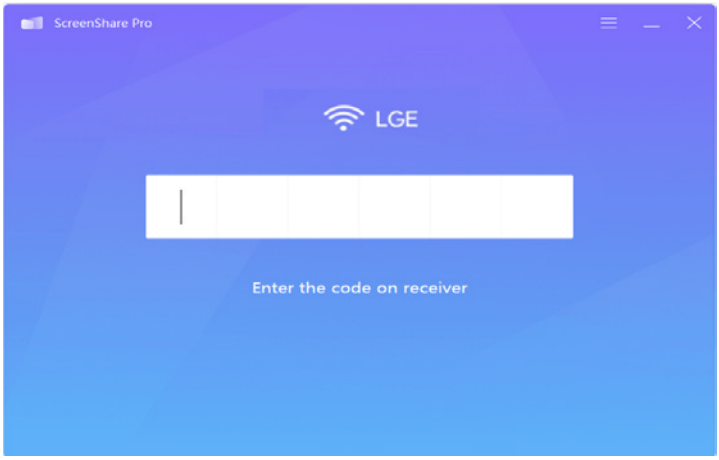


Picture 4-1-9-1 Disconnection

PC Device Operation

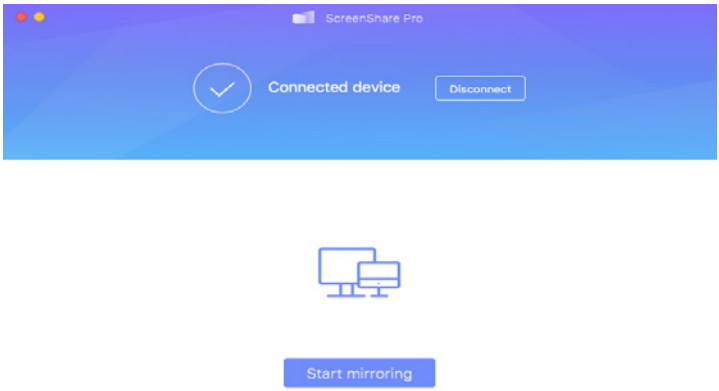
Windows, Chrome OS and MacOS have similar interface and operations. The followings are in the case of Mac.

1 Startup software in PC client device and enter the main interface.



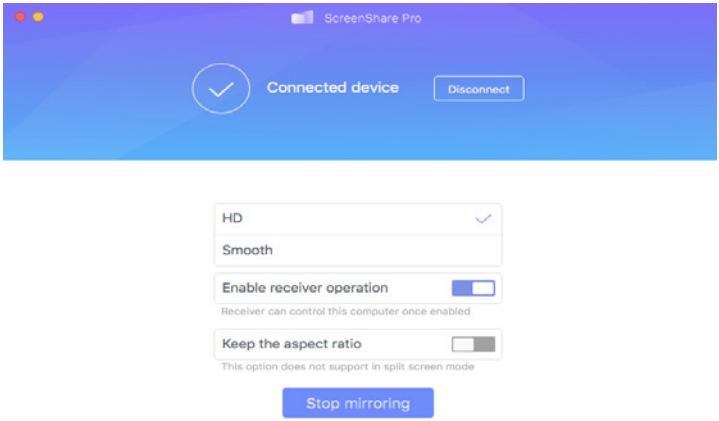
Picture 4-2-1 PC Client Device Interface

2 Enter code to connect with IFP. As is shown in picture 4-2-2, PC device is ready for mirroring.



Picture 4-2-2 PC Client Ready for Mirroring

3 Click Start mirroring to enter mirroring mode. Make adjustment if needed.



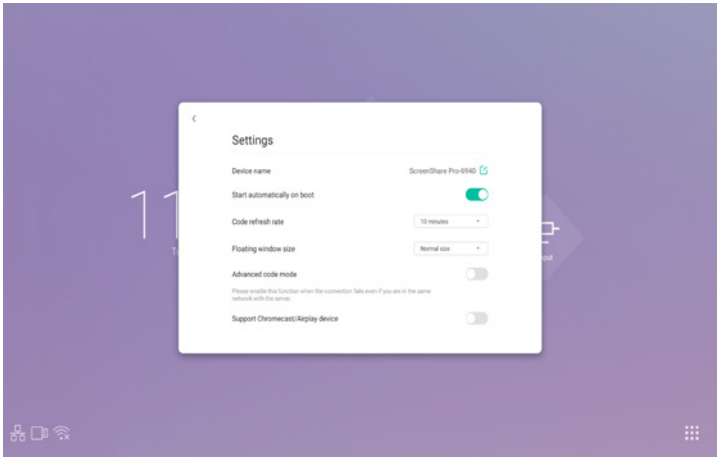
Picture 4-2-3 PC Client Device Mirroring Successfully

- Stop mirroring. Click Stop mirroring so that client devices will not mirror with IFP.
- Disconnect. Click Disconnect to disconnect client devices from server and go back to main interface.
- Adjust resolution. Click HD Smooth to switch between different mirroring resolution.
- Receiver operation. Click Enable receiver operation to enable server devices to remotely control client.
- Keep aspect ratio. Once enabled, only one client device could mirror with IFP in full-screen.

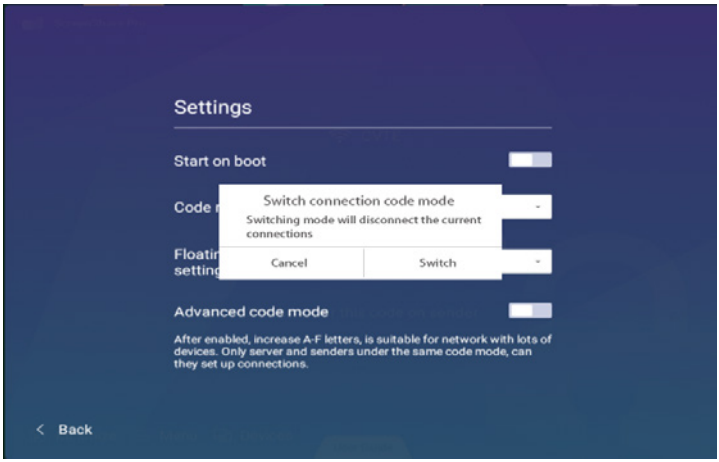
Advanced Connection Code

Apart from six pure digits, there is also a “digits+letters” connection code mode. Locate it in settings. Click to switch to advanced code mode.

Picture 5-1-1 Menu-Settings



Picture 5-1-2 Advanced Code Mode



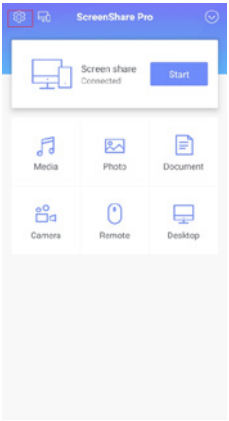
Picture 5-1-3 Switch Connection Code Mode Reminder

Picture 5-1-4 Advanced Code Mode-Server

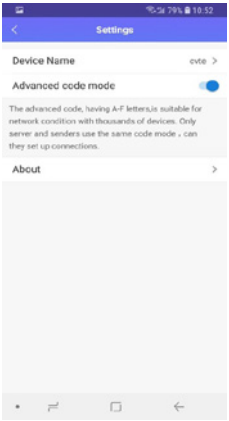
- To make sure of the operation of Screen Share Pro under different network situation, we have advanced connection code.

Adjust the settings on client devices, input new code after switching to advanced mode.

Step1



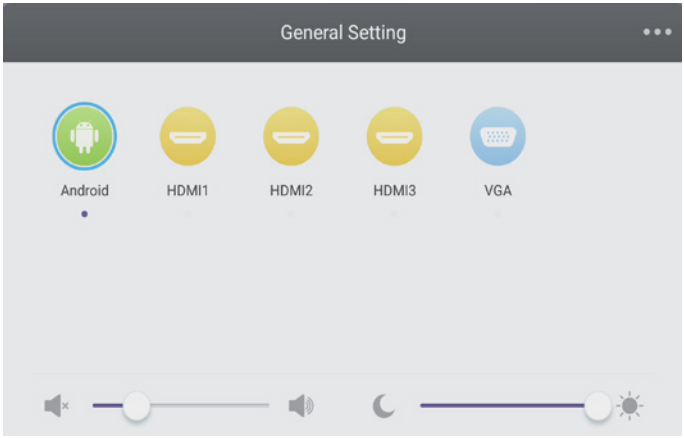
Step2



Step3

Setting Menu

[General Setting]



- Press **Input** button on remote control or via touch A method to call up [General Setting] menu.
- Press ▼/▲/◀/▶ button on remote control to select the channel you need.
- Press the **Enter** button on remote control or directly click with touch pen to confirm selected input channel.
- Press **Back** button on remote control or click blank area outside menu with touch pen to exit menu.
- Note: PC channel will only display when the equipment connects the built-in computer.

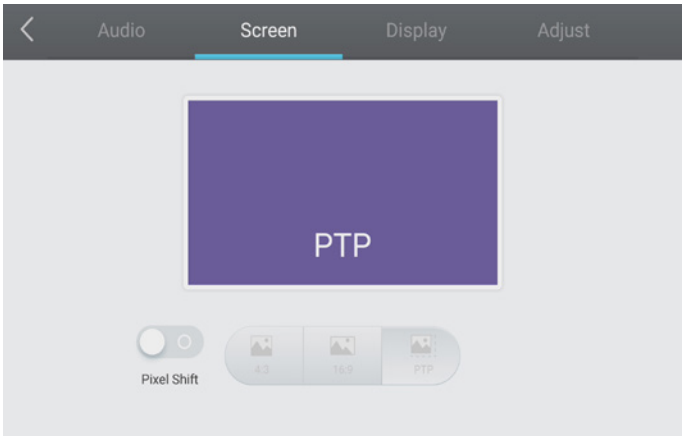
Detail Setting Menu

Press **Menu** on remote control or click the icon on [General Setting] menu with touch pen to call up detail setting menu. Detail setting menu includes [Audio], [Screen], [Display] and [Adjust].

[Audio]

- Press ▶ button on remote control to select [Audio] setting menu.
- Press ▼/▲/◀/▶ button on remote control or directly click with touch pen to select the option.
- Press **Enter** on remote control to enter adjustment mode, and press ◀ / ▶ button or directly click with touch pen to adjust each option. Press **Enter**/**Back** to exit adjustment.
- Press 🔇 on remote control or directly click with touch pen to open or close mute state.
- Press **Back** on remote control or click blank area outside menu with touch pen to exit menu.

[Screen]

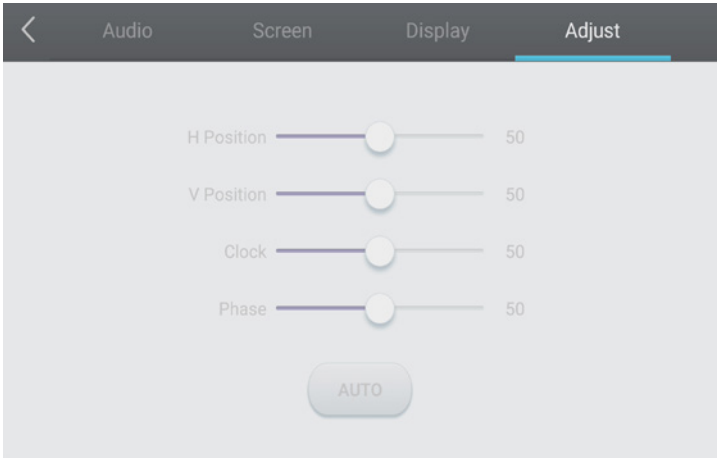


- Press ▶ button on remote control to select [Screen] setting menu.
- Press ▼/▲/◀/▶ on remote control or directly click with touch pen to select the option.
- Press **Enter** on remote control or directly click with touch pen to enter the selected mode.
- Press **Back** on remote control or click blank area outside menu with touch pen to exit menu.

[Display]

- Press ▶ button on remote control to select [Display] setting menu.
- Press ▼/▲/◀/▶ button on remote control or directly click with touch pen to select the option.
- Press **Enter** on remote control to enter adjustment mode, and press ◀/▶ button or directly click with touch pen to adjust each option. Press **Enter**/**Back** to exit adjustment.
- Press **Back** on remote control or click blank area outside menu with touch pen to exit menu.
- The display item is deactivated for the Android input.

[Adjust]



- Press ▶ button on remote control to select [Adjust] setting menu.
- Press ▼/▲/◀/▶ button on remote control or directly click with touch pen to select the option.
- Press **Enter** on remote control to enter adjustment mode, and press ◀/▶ button or directly click with touch pen to adjust each option. Press **Enter**/**Back** to exit adjustment. You can also click the [Auto] icon to adjust automatically.
- Press **Back** on remote control or click blank area outside menu with touch pen to exit menu.

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: 1920x1088 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	k	000 – 003
02	Treble	x	000 – 100
03	Bass	k	000 – 100
04	Balance	j	000 – 100
05	Contrast	d	000 – 100
06	Brightness	k	000 – 100
07	Sharpness	k	000 – 100
08	Sound Mode	k	000 – 004
09	Volume	k	000 – 100
10	Mute	k	000 – 001
11	Video Source	x	See Video Source
12	Aspect Ratio	f	000 – 002
13	Language	f	See Language
14	Picture Mode	f	000 – 003
15	Hue	j	000 – 100
16	Backlight	k	000 – 100
17	Color Temp	d	000 – 002
18	Remote Control	k	See Remote Control
19	IR	k	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.

Transmis sion
(3A)(30 31)(Type)(3F)(Data)(0D)

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

17. Color Temp (Command: 40)
Adjust the aspect ratio.

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 (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

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