# DB-UniStation
User Guide

Overview

Currently, operators have to use multiple keyboards and mice to manage multiple servers which significantly lower the efficiency, increase the labor cost and risk of misoperation.

To address the issues, DigiBird designed and manufactured UniStation, Unified KVM Solution for Work Stations, to enhance resources security and operators' collaboration between workstations, also provide comfortable and efficient user experience.

With UniStation, all resources including KVM and audio can be consulted, manipulated and displayed on the operator's monitors and video wall by one mouse and keyboard set.
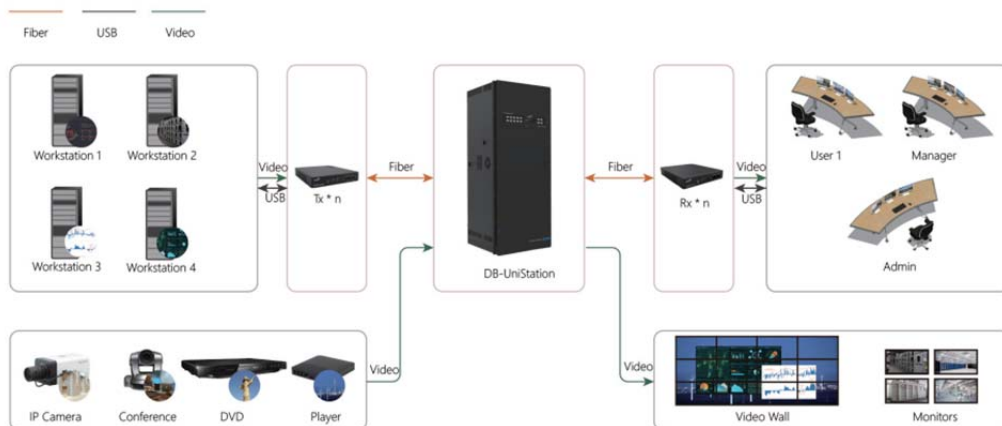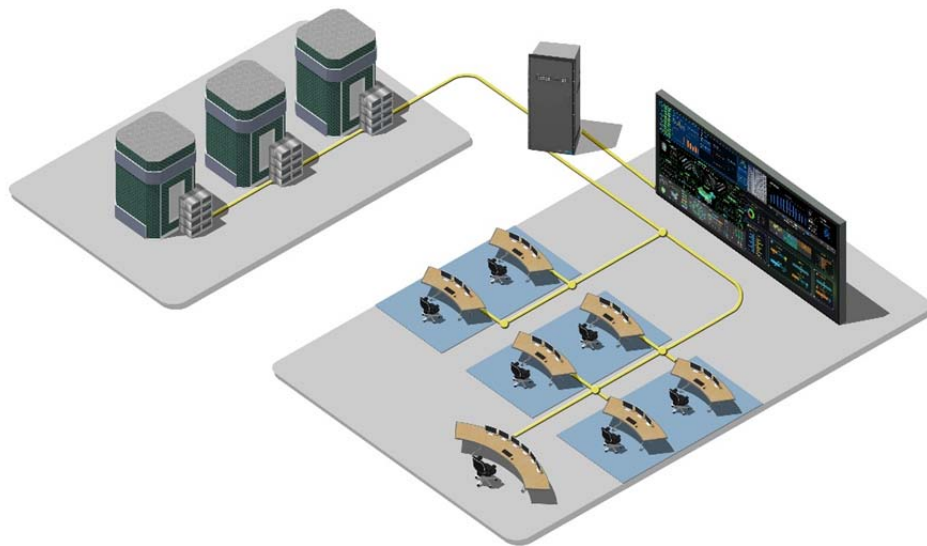
System Constituent

The system consists of fiber matrix switcher, transmitters and receivers.
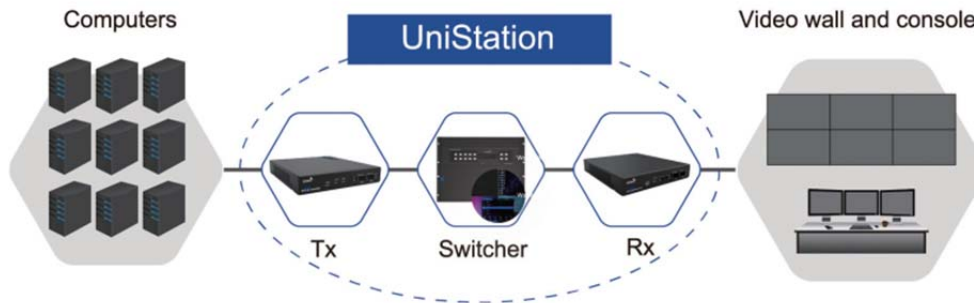
Chassis

Front panel

There are push-buttons and indicators on the front panel, the device IP can be viewed and revised via push-buttons.

4U Chassis

8U Chassis

15U Chassis

26U Chassis

Rear Panel

The chassis is modular designed, the vacant slot can be populated with different I/O cards, PSUs and

fans etc. It is easy for maintenance and future expansion.

4U Chassis

4U chassis including 10x I/O slots, 2x control card slots, 1x confidence monitoring slot and 2x PSU slots.

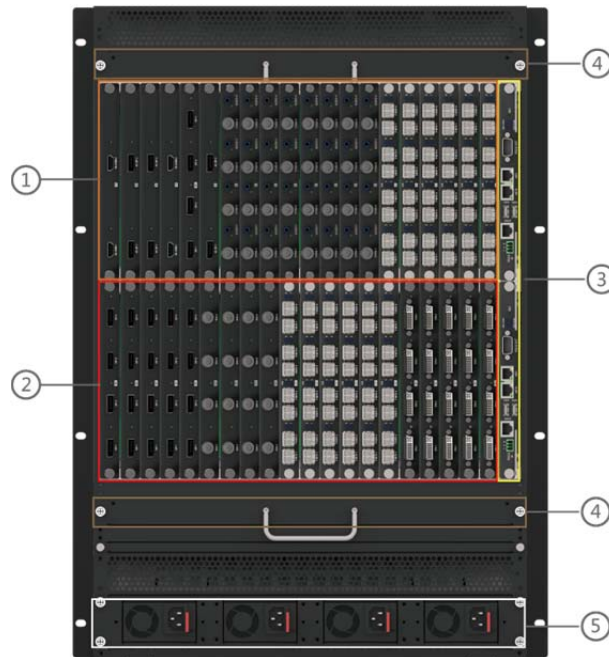| ①	I/O slots	Populate any I/O cards
②	Control card slot	Dedicated for control card
③	Monitoring card slot	Dedicated for confidence monitoring card
④	Fans Slot	For fans
⑤	PSU slot	For PSUs

8U Chassis

8U chassis including 20x I/O slots, 2x control card slots, 1x confidence monitoring slot and 2x PSU slots.
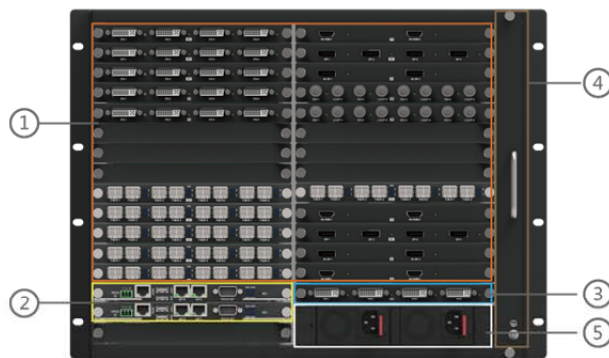
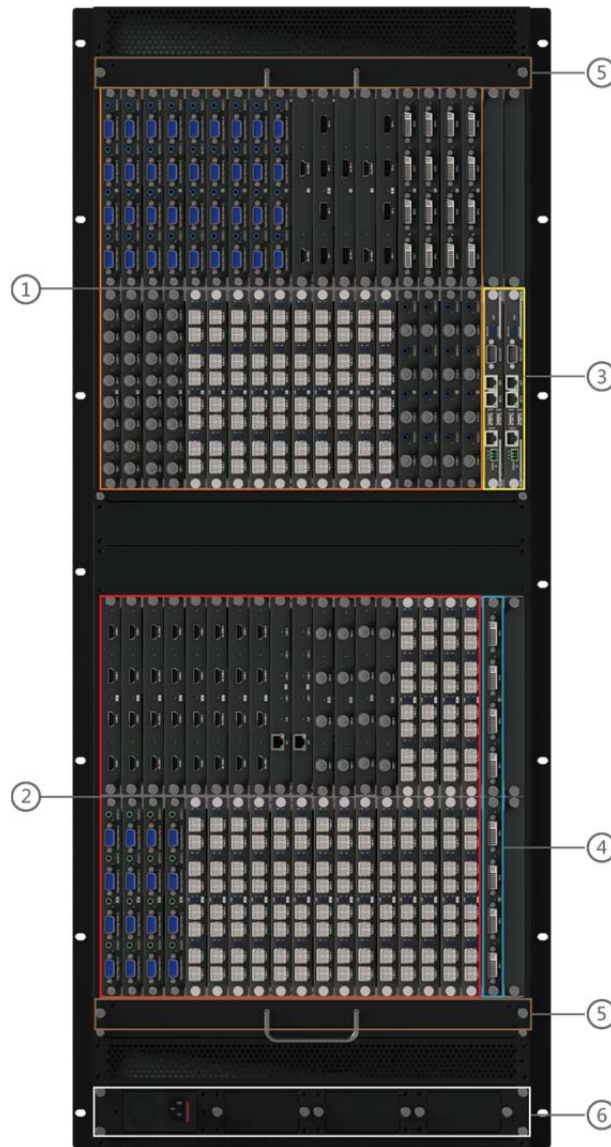| ①	I/O slots	Populate any I/O cards
②	Control card slot	Dedicated for control card
③	Monitoring card slot	Dedicated for confidence monitoring card
④	Fans Slot	For fans
⑤	PSU slot	For PSUs

15U Chassis

15U chassis including 20x input slots, 20x output slots, 2x control card slots and 4x PSU slots.

①	Input slots	Populate any input cards
②	Output slots	Populate any output cards
③	Control card slot	Dedicated for control card
④	Fans Slot	For fans
⑤	PSU slot	For PSUs

26U Chassis

26U chassis including 36x input slots, 36x output slots, 2x control card slots, 2x confidence monitoring card slots and 4x PSU slots.

①	Input slots	Populate any input cards
②	Output slots	Populate any output cards
③	Control card slot	Dedicated for control card
④	Monitoring card slot	Dedicated for confidence monitoring card
⑤	Fans Slot	For fans
⑥	PSU slot	For PSUs

Cards

Chassis can populate video input cards, video output cards, fiber input cards, fiber output cards and functions cards etc. Fiber cards require work with DigiBird fiber optical transmitters and receivers to transfer video and control signal via fiber optical cable.

Input Cards

1) 8 channels Fiber input card

Connecting with fiber transmitter to transmitte video, audio and K&M signal.

2) 4 channels HDMI input card

Connecting with local input devices to capture audio and video, support up to 1920x 1080/60Hz, embedded audio supported. Compatible with HDCP and DVI 1.0.

3) 2x channels 4K HDMI input card

Connecting with local input devices to capture audio and video, support up to 3840x 2160/30Hz, embedded audio supported. Compatible with HDCP and DVI 1.0.

4) **4x channels DVI input card**

Connecting with local input devices to capture audio and video, support up to 1920x 1080/60Hz, independent audio supported with additial convertor. Compatible with DVI 1.0.

5) **2x channels DL-DVI input card**

Connecting with local input devices to capture audio and video, support up to 3840x 2160/30Hz, independent audio supported with additial convertor. Compatible with DVI 1.0.

6) **4x channels VGA input card**

Connecting with local input devices to capture audio and video, support up to 1920x 1080/60Hz, independent audio supported.

7) **4x channels DP input card**

Connecting with local input devices to capture audio and video, support up to 1920x

1080/60Hz, embedded audio supported. Compatible with HDCP and DP 1.0.

8) **2x Channels 4K DP input card**

Connecting with local input devices to capture audio and video, support up to 3840x 2160/30Hz, embedded audio supported. Compatible with HDCP and DVI 1.0.

9) **4x channels CVBS input card**

Connecting with local input devices to capture audio and video, support up to 720x480@60Hz(NTSC)/720x576@50Hz(PAL), independent audio supported.

10) **4x channels SDI input card**

Connecting with local input devices to capture embedded audio and video, support up to 1920x 1080/60Hz. Loop out supported for each input source.

11) **2x ports IP decoding card**

IP decoding card is compatible with H. 264 and H.265, each port is capaple to decode up to 32x 1280x 720/30Hz, or 16x 1980x 1200/30Hz, or 8x 1920x 1080/60Hz, or 4x 3840x 2160/30Hz. The card can output 4x channels to chassis at the same time, each channel can be single view, quad view, nine view or sixteen view, maximum support 1920x 1080/60Hz.

12) **2x ports 4K IP decoding card**

IP decoding card is compatible with H. 264 and H.265, each port is capaple to decode up to 32x 1280x 720/30Hz, or 16x 1980x 1200/30Hz, or 8x 1920x 1080/60Hz, or 4x 3840x 2160/30Hz. The card can output 4x channels to chassis at the same time, each channel can be single view, quad view, nine view or sixteen view, maximum support 3840x 2160/30Hz.

Output Cards

13) **8x channels fiber output card**

Connecting to fiber receiver to transmitte audio, video and K&M to receiver. Each card

support 8x channels, each channel support single view without preview.

14) 4x channels fiber

output card

Connecting to fiber receiver, transmitteaudio, video and K&M to receiver. Each card support 4x channels, each channel support single view with preview.

Port 1, 3, 5, 7 is available, port 2. 4, 6, 8 is duplication of video content without KVM.

15) 2x channels fiber

output card

Connecting to fiber receiver to transmitte audio, video and K&M to receiver. Each card support 2x channels, each channel support quad-view with preview.

Port 1, 5 is available, port 2, 6 is duplication of video content without KVM. Port 3, 4, 7, 8 do not work at current stage.

16) 4x channels HDMI

output card

4x channels output support up to 1920x 1080/60Hz, embedded audio supported. Compatible with HDCP and DVI 1.0.

Each port support 2x layers per screen. Or port 1 and port 3 support 4x layers while port 2 and port 4 are not working.

17) 4x channels 4K

HDMI output card

4x channels output support up to 3840x 2160/30Hz, embedded audio supported. Compatible with HDCP and DVI 1.0.

Each port support 2x layers per screen. Or port 1 and port 3 support 4x layers while port 2 and port 4 are not working.

18) 4x channels DVI

output card

4x channels output support up to 1920x 1080/60Hz, independent audio supported with additional adapter.

Each port support 2x layers per screen. Or port 1 and port 3 support 4x layers while port 2 and port 4 are not working.

19) 2x channels DL-DVI output card

2x channels output support up to 3840x 2160/30Hz, independent audio supported.

Each port support 2x layers per screen. Or port 1 support 4x layers while port 2 not works.

20) 4x channels VGA output card

4x channels output support up to 1920x 1080/60Hz, independent audio supported.

Each port support 2x layers per screen. Or port 1 and port 3 support 4x layers while port 2 and port 4 are not working.

21) 4x channels DP output card

4x channels output support up to 1920x 1080/60Hz, embedded audio supported. Compatible with HDCP and DP 1.0.

Each port support 2x layers per screen. Or port 1 and port 3 support 4x layers while port 2 and port 4are not working.

22) 4x channels 4K DP output card

4x channels output support up to 3840x 2160/30Hz, embedded audio supported. Compatible with HDCP and DP 1.1.

Each port support 2x layers per screen. Or port 1 and port 3 support 4x layers while port 2 and port 4 are not working.

23) Network preview card

Support preview up to 32x local input source per card.

Function Card

24) Control card

Serves to manage UniStation system, to ensure the collaboration among different cards by

sending commands.

25) OSD Card

Serves to achieve system management via OSD menu.

26) Confidence

monitorig card

It serves to duplicate video wall display and output to a independent monitor to monitor video wall display.

Each port can monitor one video wall. It is available for 4U, 8U and 26U chassis.

Transmitter & Receiver

Audio, video and KVM is transferred over fiber optic, with high security and interfere-resistance capability, and no compression and latency meanwhile.

Transmitter

Unistation transmitter will distribute computer video source over fiber optical, while taking the KVM signal from receiver and send back to computer. This ensure the long-distance transmission of audio, video and KVM.

Front Panel

Introduction

No.	Item	Description
①	Configuration	USB Type B, for configuration
②	RST	Hold 4x seconds for reset
③	Indicators	POWER, keeps on during working VIDEO, keeps on if input source detected USB, keeps on if connecting USB to computers LOOP, keeps on once loop out conducted
④	IR Input	Reserved, not available yet
⑤	IR output	Reserved, not available yet
⑥	Fiber port	Connect to UniStation fiber input card

| ⑦	Fiber port	Connect to UniStation fiber input card
⑧	Fiber indicator	1：FIBER1 status indicator, keeps on if working well 2：FIBER2 status indicator, keeps on if working well

Rear Panel
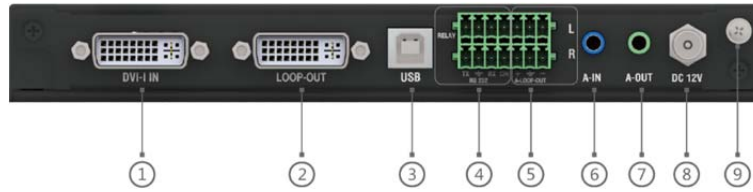
Introduction

No.	Item	Description
①	Input	Connect to computer
②	Loop out	Loop out for local monitoring
③	USB Type B	Connect to computer to transfer KVM
④	Phoenix	Revered, not available yet
⑤	Audio loop out	6 Pin balanced audio loop out
⑥	Audio input	3.5mm port
⑦	Audio loop out	3.5mm port
⑧	Power	12V
⑨	Ground	/

Available transmitter

HDMI Transmitter

4K HDMI Transmitter

DP Transmitter

4K DP Transmitter

SDI Transmitter

UniStation Receiver

Front Panel

Introduction

No.	Item	Description
①	Mini USB	To configure the receiver
②	RST	Hold 4x seconds to reset
③	USB	To connect keyboard and mouse
④	USB	To connect USB HID devices, i.e. memory stick, printer etc.
⑤	Indicators	POWER, keeps on during working VIDEO, keeps on once connected IN1, keeps on once connected IN2, keeps on once connected
⑥	IR input	Revered, not available yet
⑦	IR output	Revered, not available yet
⑧	Fiber 1	Connect to fiber output card
⑨	Fiber 2	Connect to fiber output card
⑩	Indicators	FIBER1 status indicator, keeps on if working well FIBER1 status indicator, keeps on if working well

Rear Panel

Introduction

No.	Item	Description
①	DVI output	DVI-I output
②	Phoenix	Reserved
③	Balance audio	6 Pin balance
④	Audio Input	3.5mm
⑤	Audio output	3.5mm
⑥	Power	12V DC
⑦	Ground	/

Available receiver

HDMI Receiver
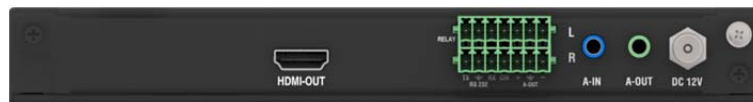
4K HDMI Receiver
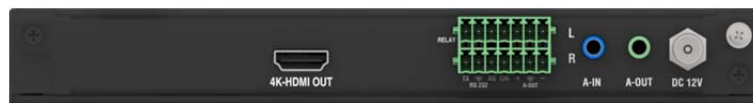
DP Receiver

4K DP Receiver

SDI Receiver

Receivers support embedded audio from computers.

System Connection

Hereby, we take below case as example to build the system.

1) 2x work stations, each work station with 3x monitors, one keyboard and mouse set and one flash disk. There is one set of 3x 5 video wall and one control PC also.

2) Resources, one set quad-head server, 10x data server, 4x media players, 2x operating PC, 5x CCTV camera.

3) One UniStation chassis, 18x transmitters, 6x receivers and fiber optical cables correspondingly.

Connection diagram as below:
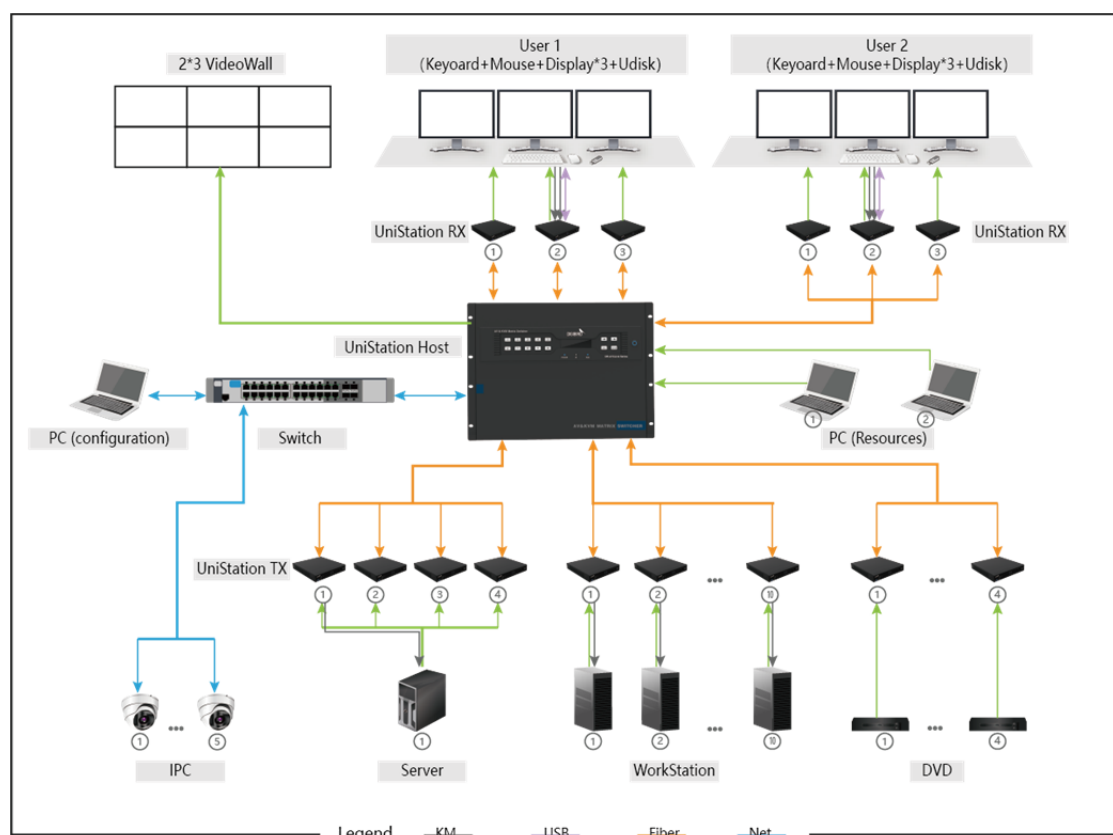
System Configuration

After physical connection was done, the system need to be configured based on demand. i.e. workstation layout, video wall, access level.

Web-based Management

UniStation system is managed by web-based control interface, we recommend below browsers by considering compatibility.

Name	Version
Google Chrome	Version49 and above

IP Configuration

To manage the UniStation, control PC and UniStation chassis should be within same LAN and same subnet. Default IP is 192.168.1.200 and can be revised via push-buttons.

	Operation	LED Screen
①	Initial	
②	ENTER	
③	ENTER	
④	◁ ▷ Select	
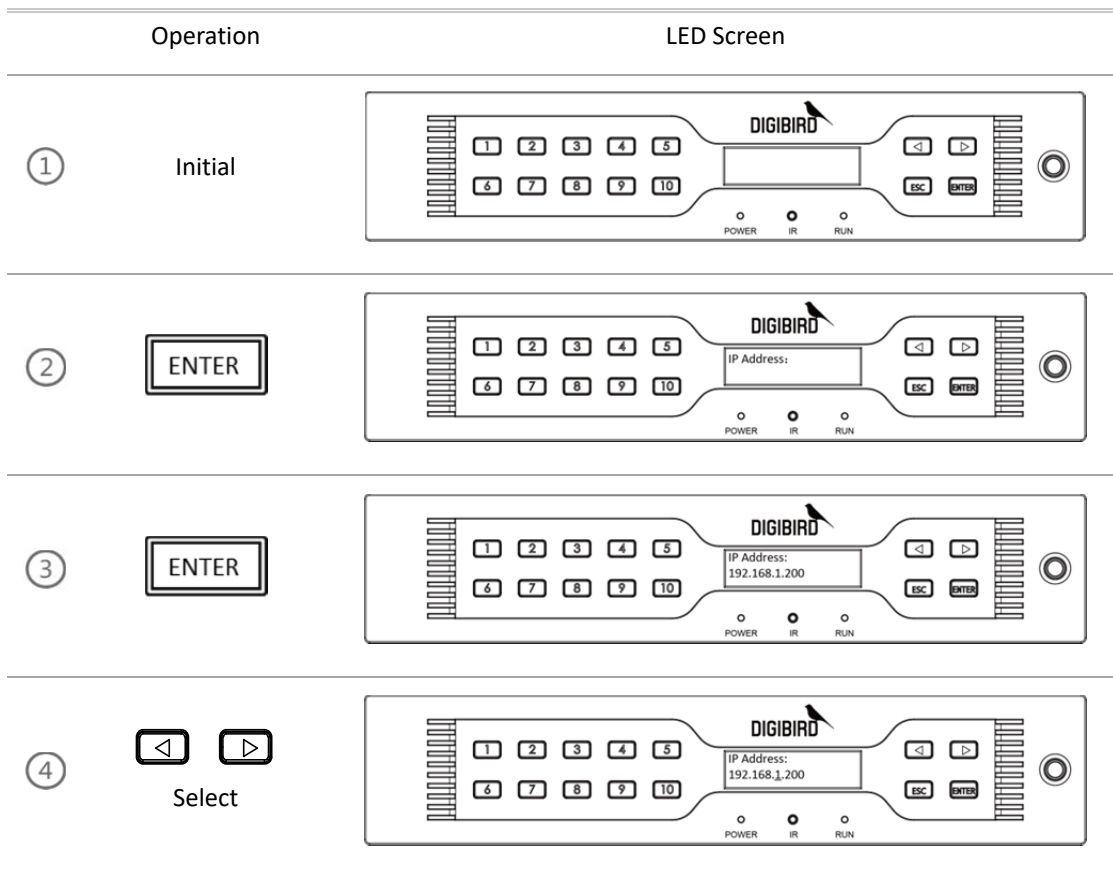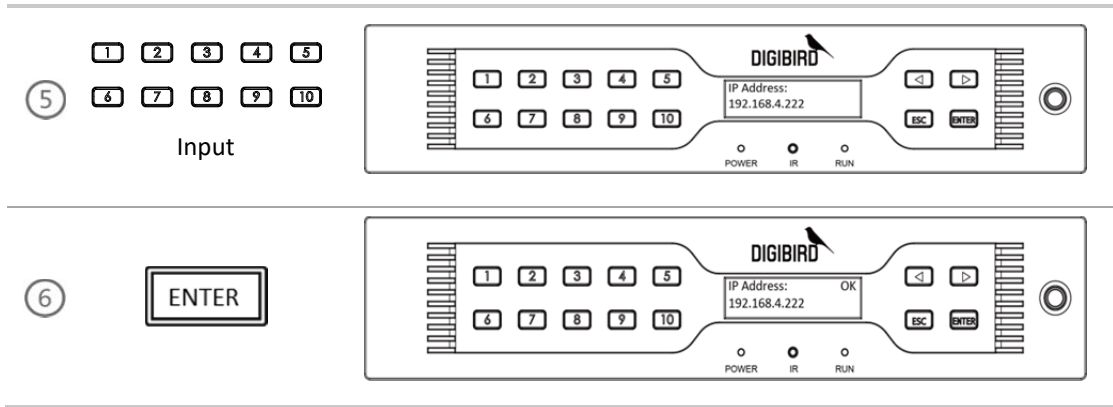
Indicators：

①	POWER	Keeps on during working
②	IR	Not available yet
③	RUN	Keeps flashing during working

Login

Control PC and chassis should be within same LAN and subnet for communication. We take Google Chrome browser as reference here.

1. Run Chrome and input IP dress at address field.

   - Revise the IP address to 192.168.4.222.
   - Input the IP address, and press <Enter> to execute.

2. Default user name is "admin", password is "123".
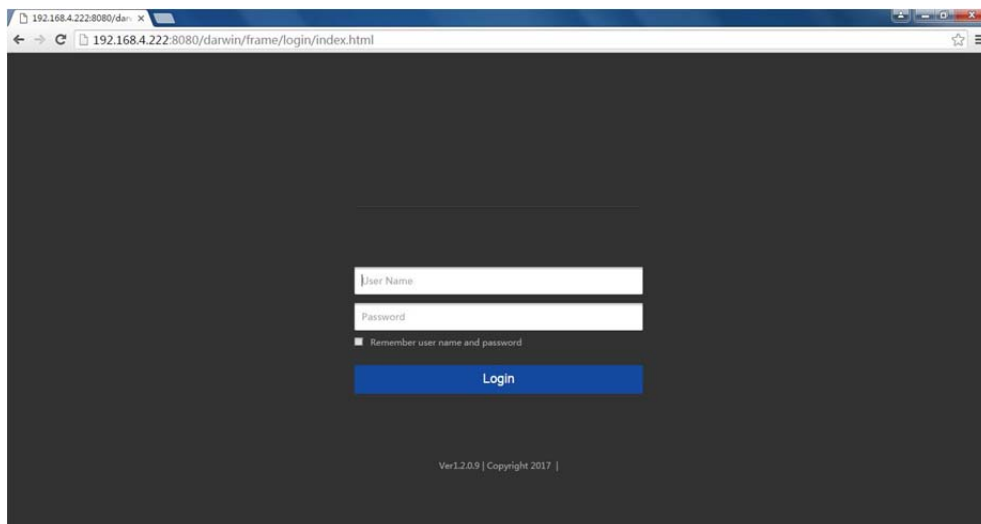
3.   After login, the control interface prompts up.
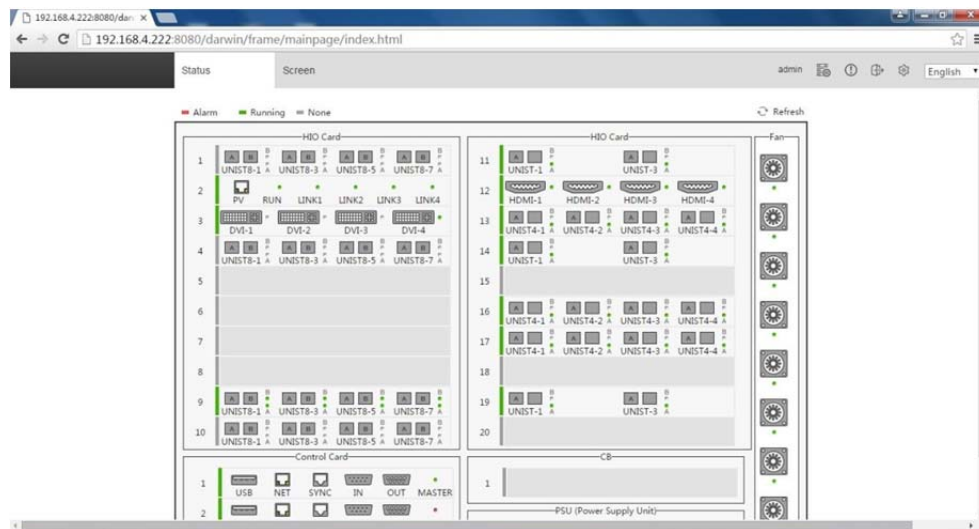
Configuration

To configure workstation monitors, keyboard & mouse and video wall etc.

Add Monitors

The workstation consists of monitors, one keyboard and mouse set. There are dozens of monitors with different sizes and resolutions; user is able to add monitor information to the library in advance. Hereby the operation sequence：

1)   Click ⚙ icon to enter into setting page, select

2)   [Monitor settings].
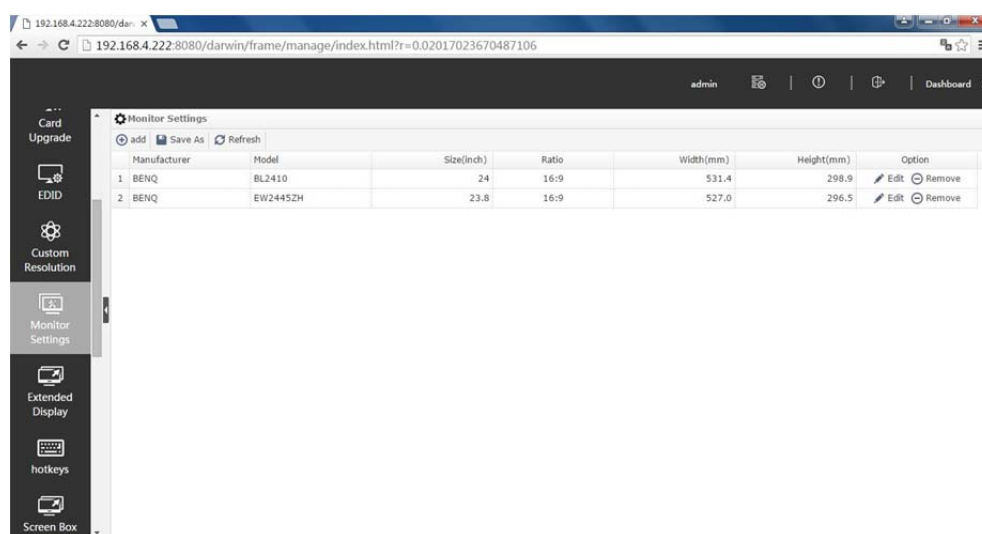
3)   Click ⊕ add to input monitor brand, model, size and aspect ratio etc.
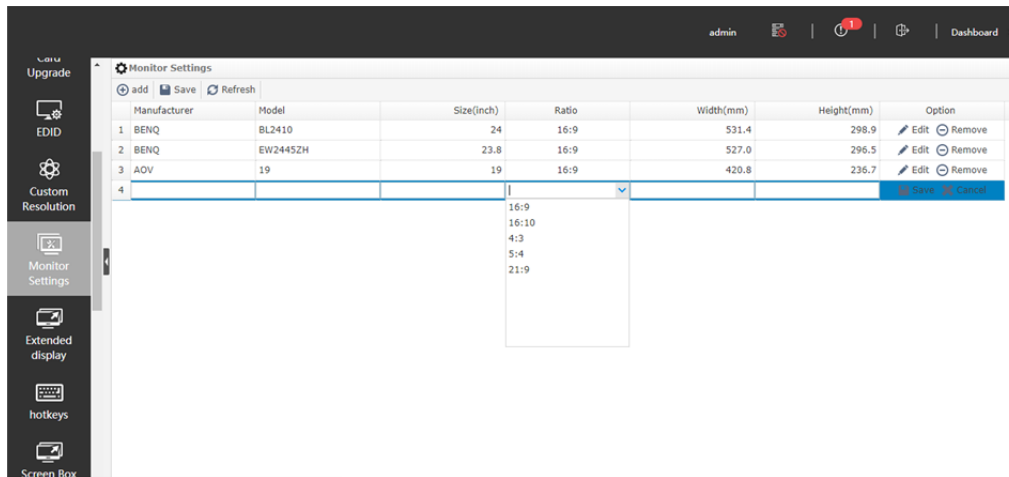
4)   By [EDIT] or [DELETE] can edit or delete monitor information.

Add Workstation

Based on actual application, user need to configure monitors layout, master screen, receiver screen, and mapping relationship between monitors and fiber output card.

Hereby the operation sequence：

1)   Select [UniStation Config] at setting page,
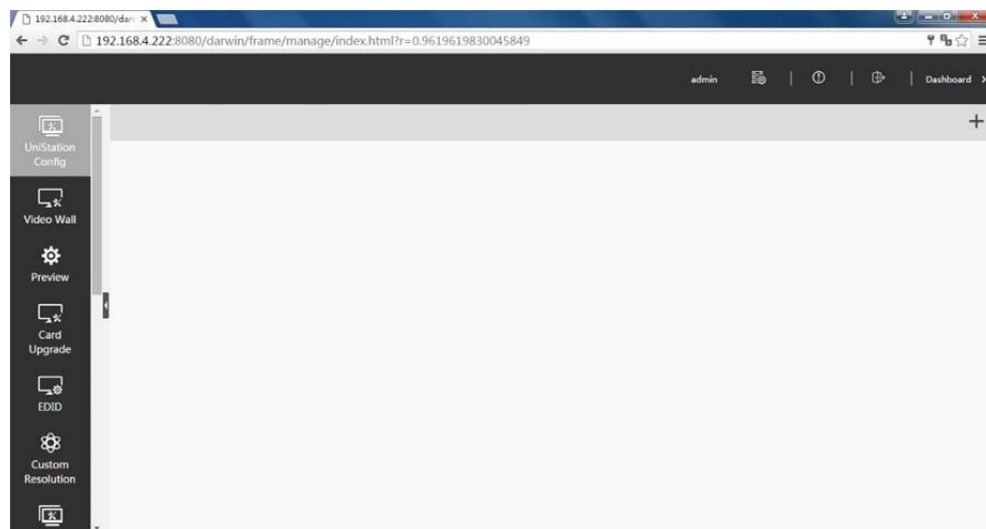
2)   Click + to add workstation.

3)   Input workstation name, output resolution. If no available resolution in the list, user is able to customize resolution.

4)   Click [Add Screen] to add monitors.

•   Select manufacturer, model in the library. If no available, please add monitor information to library.

- Select output port, to establish the mapping relationship between monitor and fiber output port.

- Master screen, there is only one master screen at one workstation, it serves as the most common used working area.

- Receiver screen; there is only one receiver screen at one workstation, it serves to receive content pushed from another workstation during collaboration.
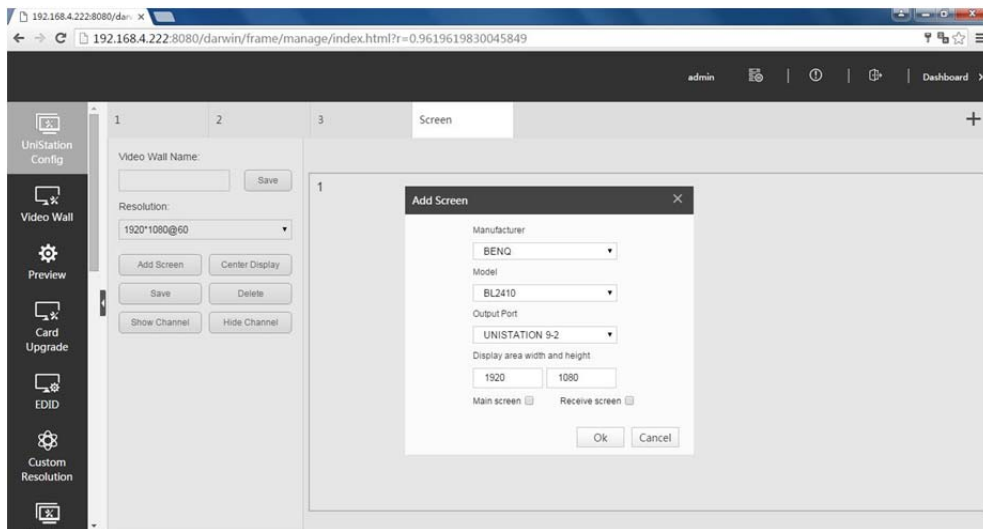
5) Add all monitors based on actual quantity and layout.
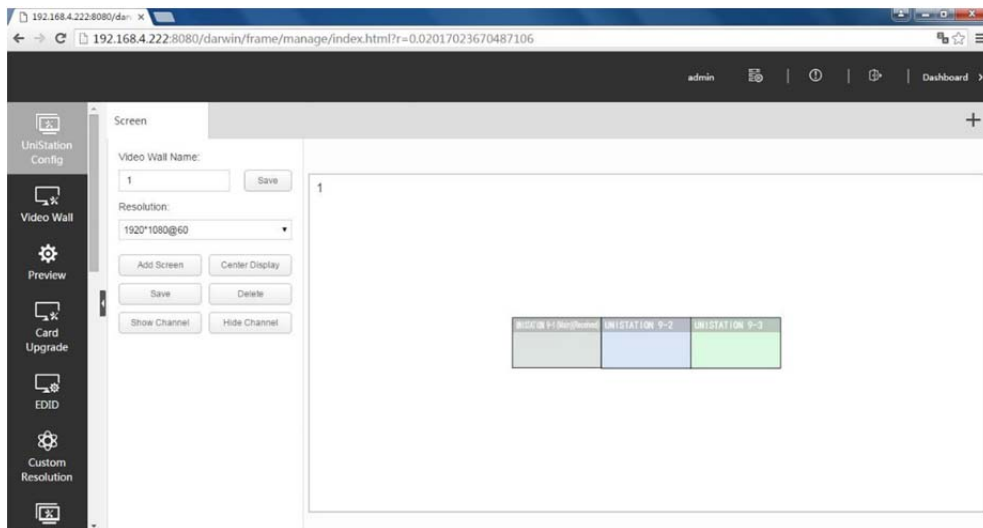
6) Click ➕ to add more workstation if necessary.

Add extension screen

Hereby the operation sequence：

1) Click [Extended Display] to configure
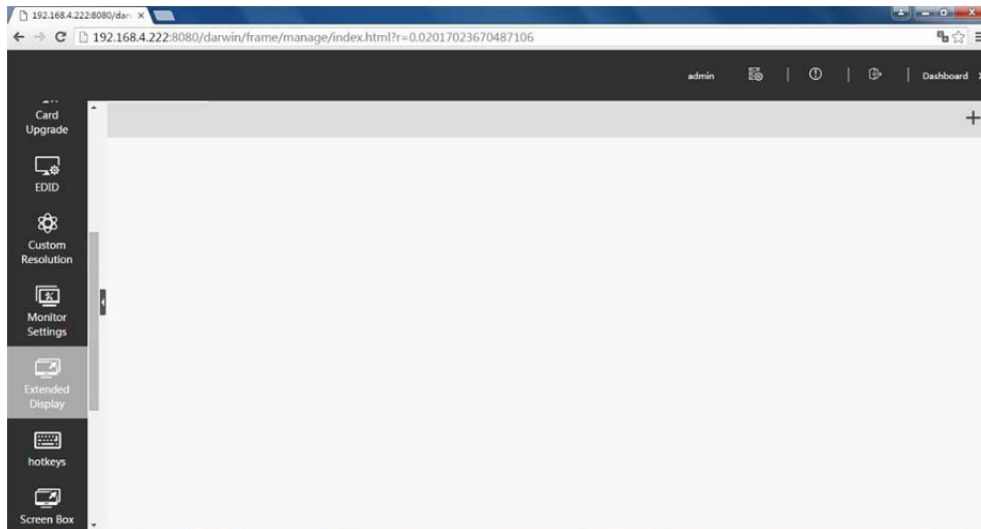
2) Click ➕ to add new

3) Input extension screen name, quantity etc. The row and Colum should be kept as same to graphic cards setting. Click [Save] to save configuration.
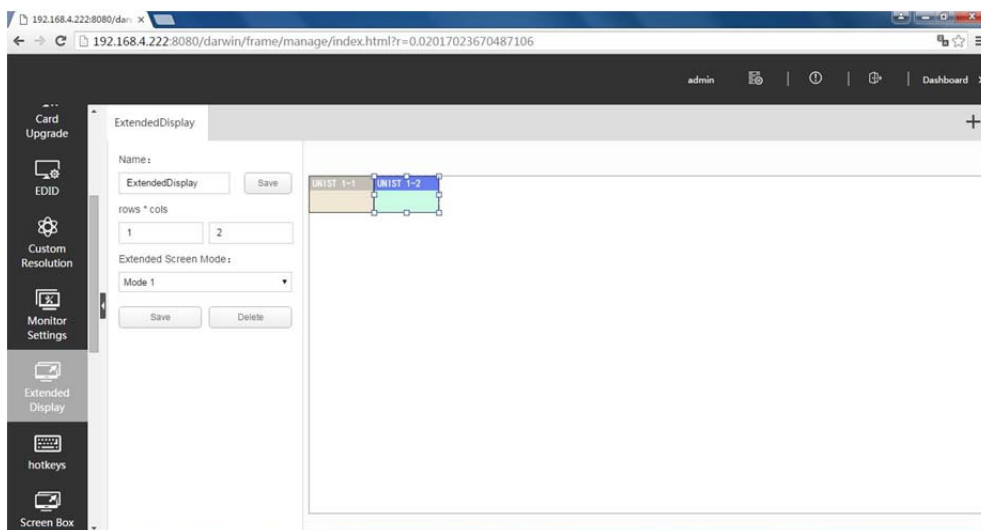
4) Each graphic head needs to be connected to UniStation system as one input, and the mapping relationship need to be allocated respectively.

Select the extension screen, right click to select [EDIT], set up input channel and valid resolution.
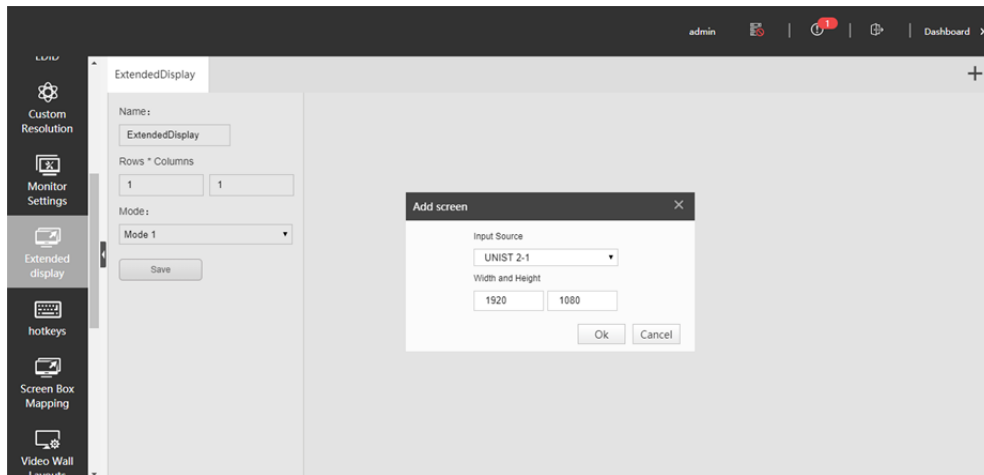
5) Able to add more extension screen if required

Add video wall workstation

1) Click [Screen Box Mapping] to configure.
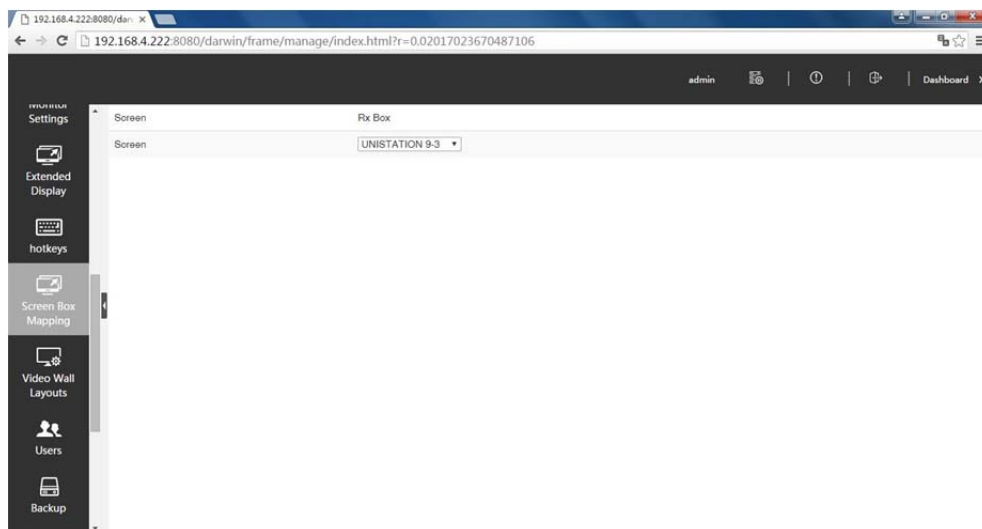
2) Select the corresponding out port for the video wall at 'Rx Box', if create several video walls then user has to choose different 'Rx Box' for those video walls.
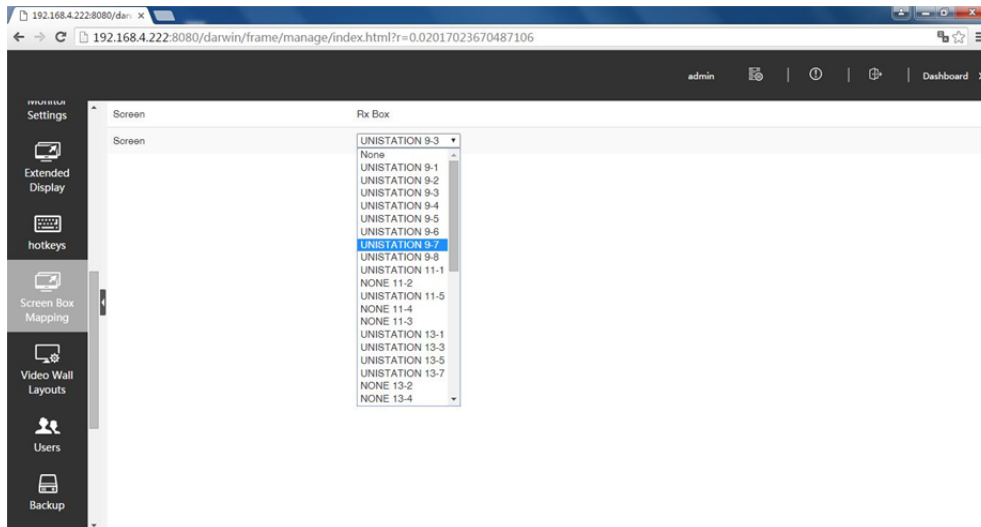
3)   After finish adding the video wall, user is able to operate the video wall by mouse such as create window, zooming and switching etc.

Video Wall

With built in video wall function, UniStation is capable to manage video wall display.

1） Click ⚙ to enter into setting page.

1)   Click ➕ to build video wall.
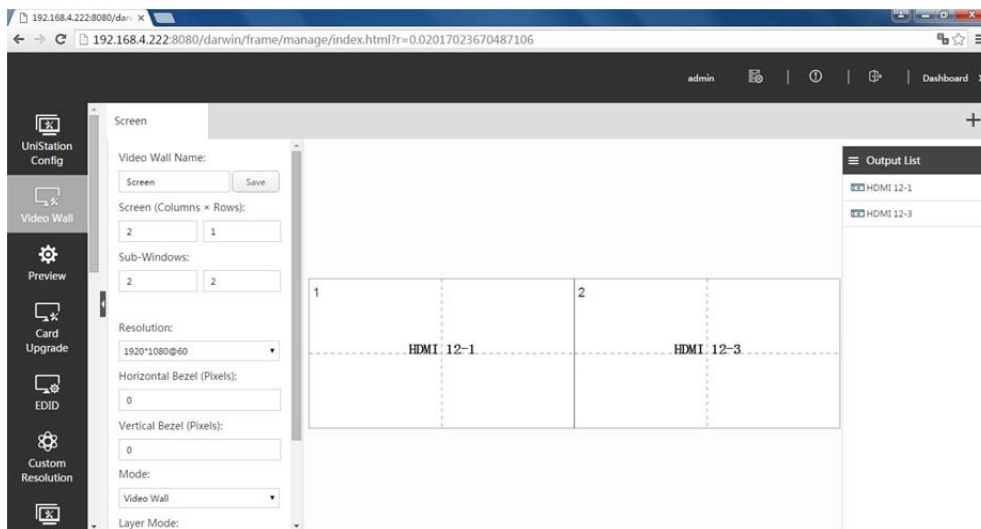
①	Name	Video wall name
②	Layout	Video wall layout
③	Sub-window	Virtual sub-window, default is 2x 2, assist to position windows

4	Resolution	Set up screen resolution.
5	Bezel	Input screen bezel for compensation
6	Layers	Layers per screen, default is 2, with options for 4 and 8.
7	Channel ID	Display output channel ID on screen

2) Output Mapping

The mapping relationship between screen and output port can be adjust via the control interface, not necessary to physically change cable order.
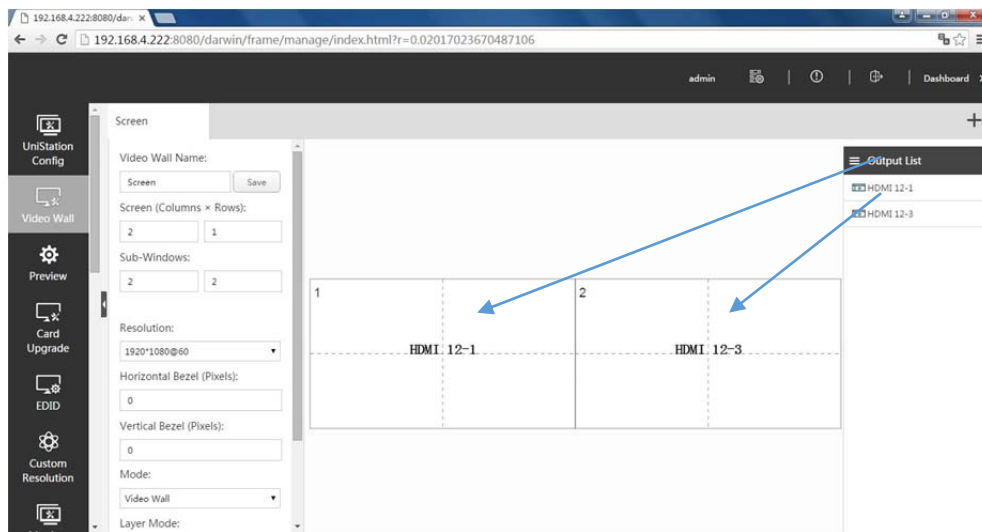
By setting up correct mapping relationship between output port and display, display device can be connected to any output port of video output card.

3) Click 💾 to complete configuration.
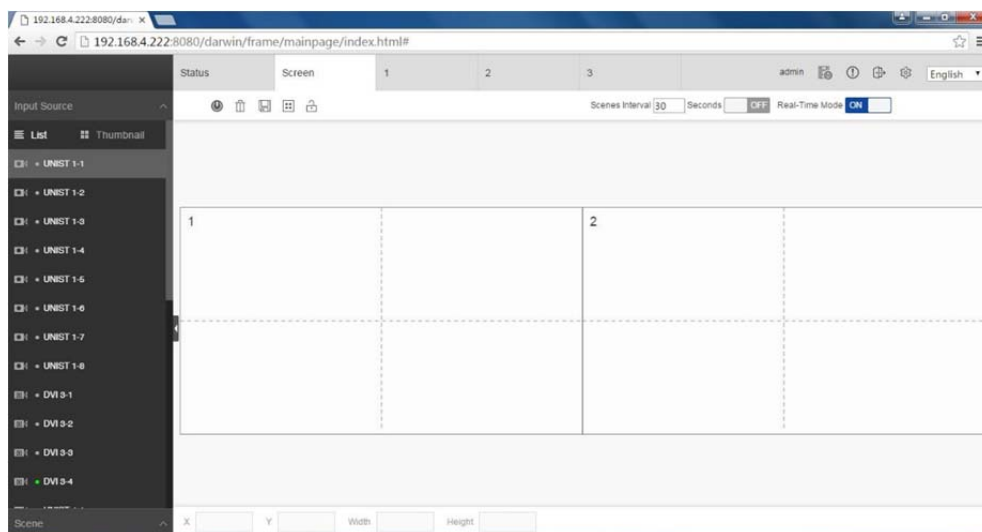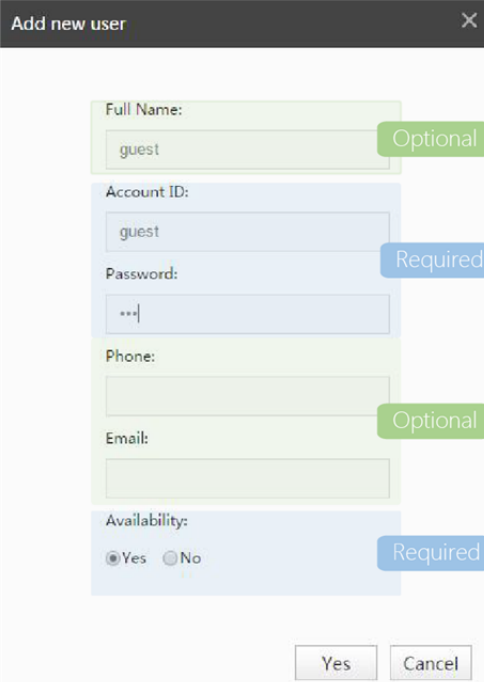
User Management

The system allows having multiple users at the same time, each user can be allocated specific access level based on role.
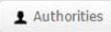
Add User

1. Click [Users] to enter into user account management page.

2. Click [⊕ Add] to add new user.

3. Input required user information.
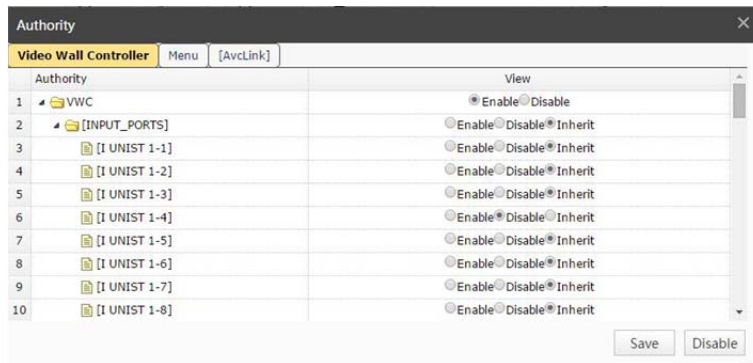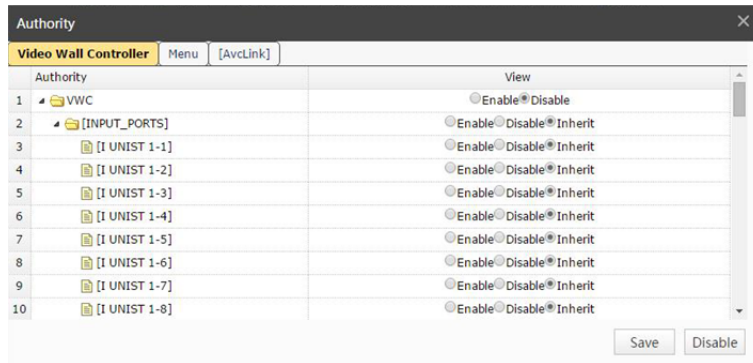

4. Able to check user information in the list.

Access Level Management

1. Select user account, click [👤 Authorities] to set up access.

2. Video wall function access.

   ● Input & output access

   Admin is capable to enable or disable access for each input or output.

For example, if intend to disable 'user' access to input source [I UNIST 1-4], can enable [Video Wall] and disable [I UNIST 1-4].
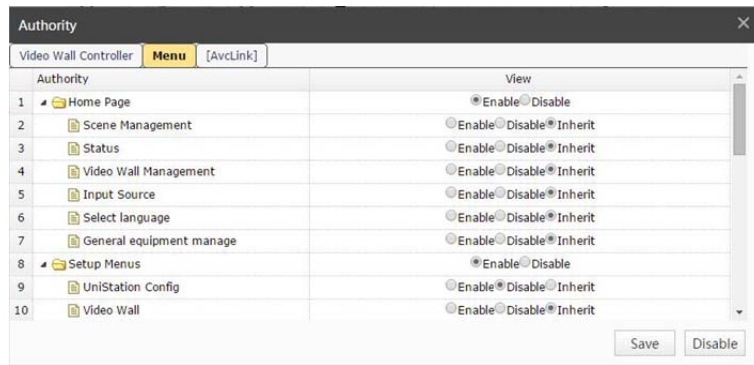

Inherit indicates flow the access of upper level, for example, if [I UNIST 1-3] status is "Inherit", if [Video Wall] status is "Enable", then [I UNIST 1-3] is "Enable", if [Video Wall] status is "Disable", then [I UNIST 1-3] is "Disable".

● Function Access

Select [Menu], there is list of functions, admin is able to enable or disable each function.
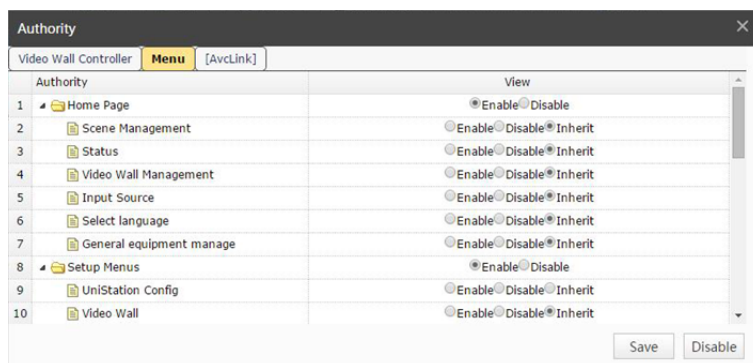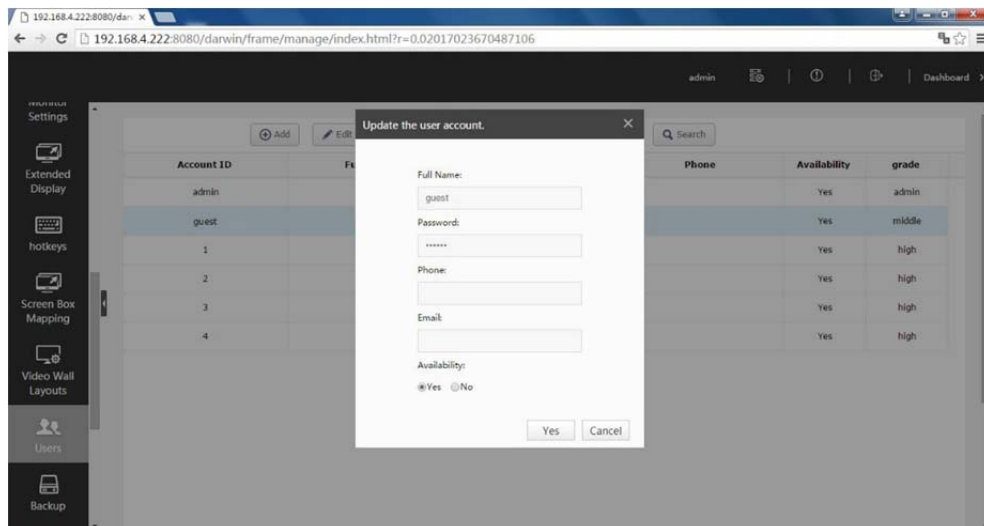
3.　After setting, if log in system with the user account, the user is not able to view disabled input source and not able to switch either.
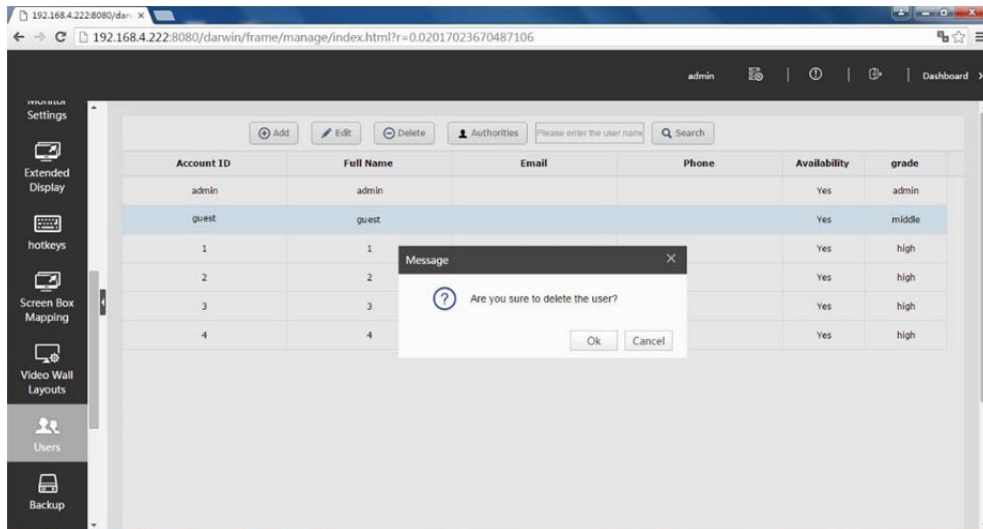
Edit Account

1、Select the account and click ![Edit] to edit account information.

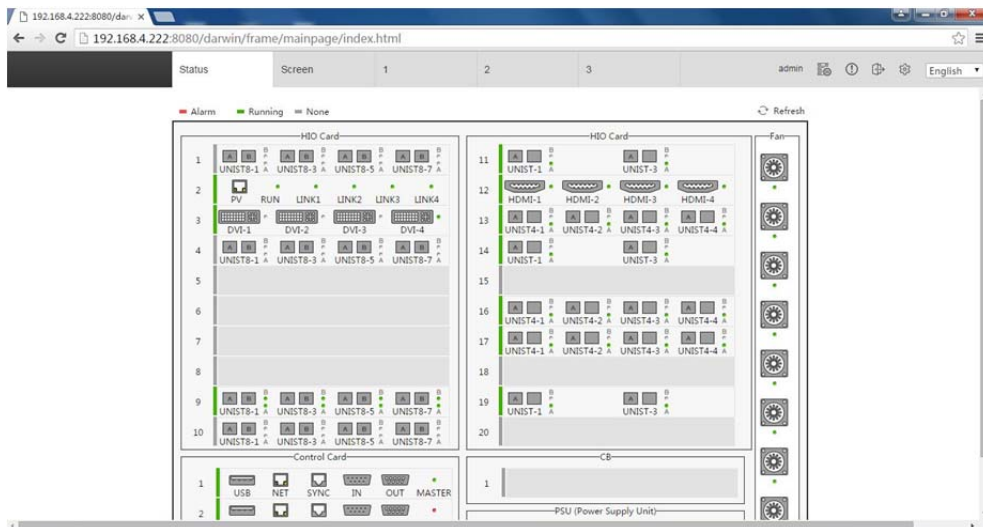
Delete Account

1、Select target account, click ![Delete] to delete.

Status

GUI status

Click the [Status] at dash board to get status monitoring page.

Status introduction

1. System will auto detect chassis size and configuration.

2. System will auto detect I/O cards and function cards in the Chassis

3. Green bar in front of card indicates running normal

4. Red bar in front indicates running abnormal

5. Grey bar indicates no cards or inserted cards non-configured yet.

6. Green indicator in I/O cards stands for available input or output, grey indicator stands for un-available input/output or output port not configured yet.

7. Click cards, PSU and Fans, user is able to get real time running status.

|	
Refresh	Refresh device status
Manufacturing Info	Manufacturing information including hardware version, serial number etc.
Running Status	Display normal or abnormal running status.
Temperature	Display card ambient temperature and chips temperature
Input resolution	Display actual input resolution
Fans	Display fans rotation speed in real time
PSU	Display current power consumption
Alarm	Alarm should be any abnormal

8. Input Status

In the input source list, there are indicators in the front of each resource. Green light indicates input source connected, grey light indicates no input connected or abnormal input.
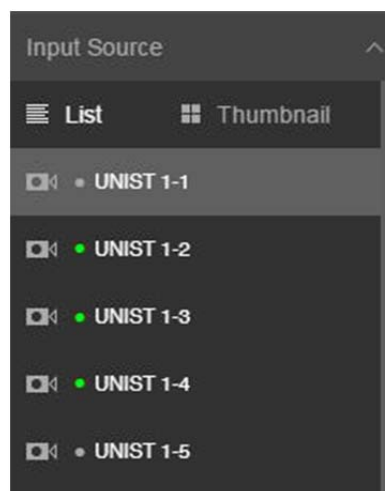
Workstation Operation

Login

After UniStation configuration, user is able to log in the system on master screen.
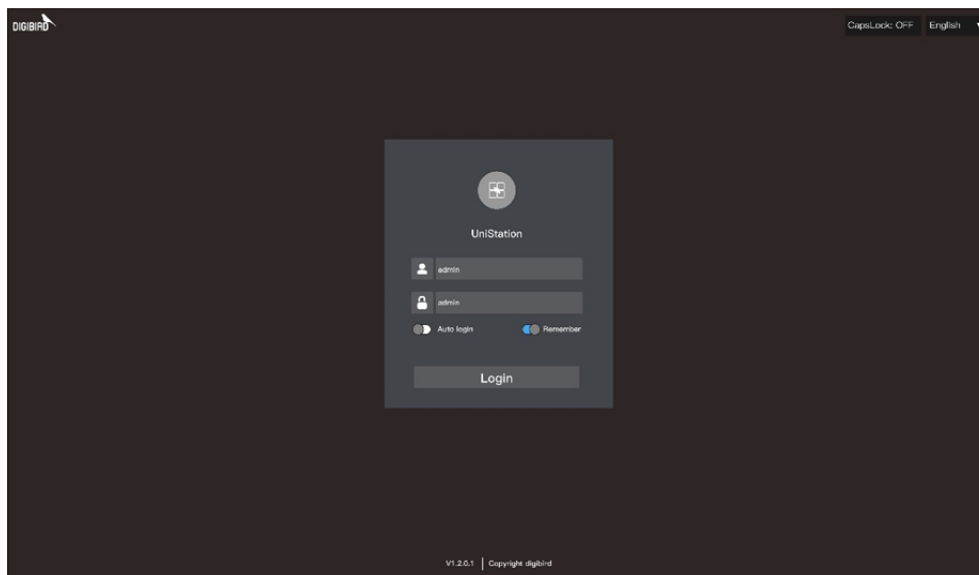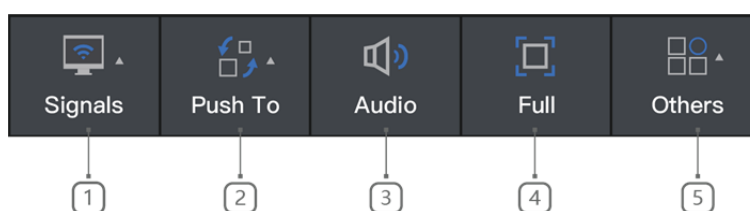

Interface Overview

There is window navigation bar at the top of each resource, to manage the resource. The monitor navigation bar at the bottom of each screen to manage layout and preset for each screen.

Window Bar

Move mouse cursor to click drop-down arrow▬▬▼▬▬, then window bar will prompt up

No.	Item	Description
1	Input source	To preview and switch sources
2	Push	Push resource to master screen, video wall or another workstation
3	Audio	Turn up/down audio volume
4	Max	Maximum the resource to full screen
5	Others	Lock, aspect ratio and USB-HID devices management

Monitor Bar

Move mouse cursor to click drop-up arrow [▲   ], then monitor bar will prompt up
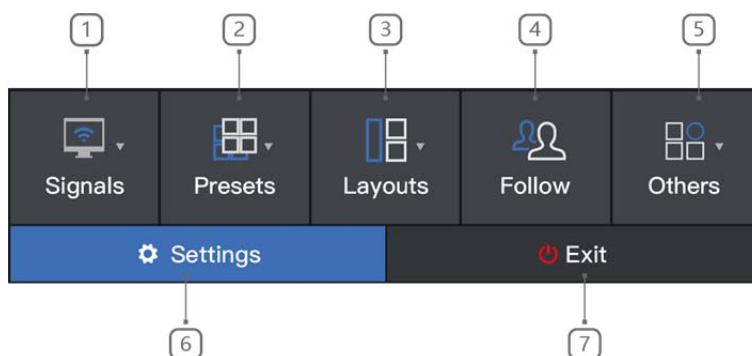
No.	Item	Description
1	Input Source	Preview resource content, or switch resource by drag and drop.
2	Preset	Including single monitor preset and workstation preset.
3	Layout	For each monitor, there is single view mode or quad-view mode (for options)
4	Follow	To apply for monitoring the operation of another workstation in real time.
5	Others	Including navigation bar management and video wall management
6	System Configuration	Customize interfaces, presets management, OSD setting, shortcuts and system status etc.
7	Exit	Exit system

Layout

Each monitor is able to display 4x sources by quad-view or single source by full screen.

To execute, call out monitor bar, click [Layout] to select [Single] or [Quad] view.
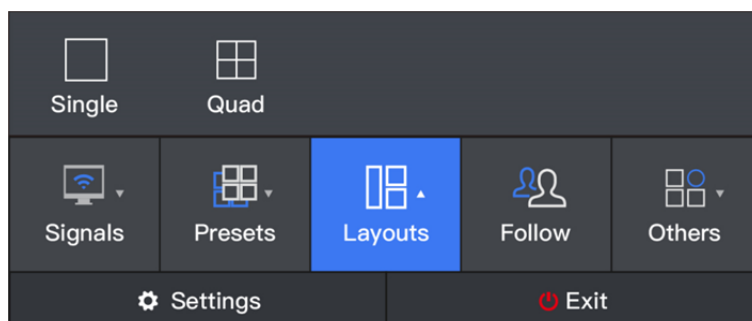
Single display performance as below reference, to manage and monitor details of information.

Quad-view mode is aimed to monitor more sources at the same time.

DB-AVCL-US-OC-F8, with 8x available port, each supports display single source per monitor without preview.

DB-AVCL-US-OC-F4, with 4x available port, each supports display single source per monitor with content preview.

DB-AVCL-US-OC-F2, with 2x available port, each supports display 4x sources per monitor by quad-view with content preview.

Source Management

Via OSD menu, user is able to monitor all the sources in the system. Each resource can be renamed, starred as favorite and checked K&M status

View All

To show all available sources in the system with a list or by live preview.

If require preview, need to apply 4x ports fiber output card and 2x ports fiber output card.

Pushed

By click [Pushed] at windows bar, user is able to check sources have been pushed, also K&M status.

Extension

With regard to PC with multi-head, for example, quad-head PC, there will be 4x sources in the list under [Extension] menu.

Sources Switching

Follow below steps to switch sources.

1) Call out window navigation bar.

2) Click [Resources] to select the target source, click to switch or call out monitor navigation bar, select target source, drag and drop to switch.

3) If want to switch extension PC resources, select combined resources from extension list. If located by horizontal, extension resources will be displayed at current operating monitor and right-side monitor. If located by vertical, will be displayed at current monitor and the downside monitor. There will be no display if downside and right-side no monitor.

Push

The system support sources push between different workstations to conduct collaboration, and support push sources to video wall.

Master Screen Push

Any of the sources can be selected and pushed to master screen.

Call out window bar, select [Main screen] to conduct push.

Workstation Push

To push sources between workstations, the procedure as below:

1) E.g., workstation 1 try to push one source to workstation 2 receiver monitor. Workstation 2 will prompt up notifications.

2) If accept, then receiver monitor will display pushed source. Or click [Cancel] to reject.

3) If K&M pushed along with source, workstation 2 will have access to manage the source server.

4) Click the [icon] icon located right side of receiver monitor, to quit push and restore previous status.

5) The source can be pushed to multiple workstations at the same time, while the K&M access is only one workstation.
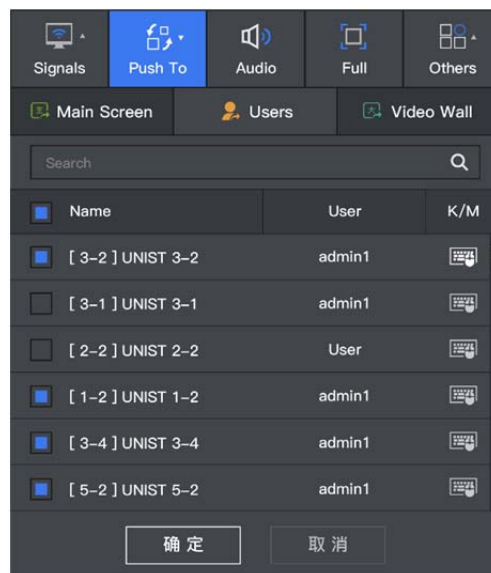
6) Here is reference.

Video Wall Push

User is able to push source to display on video wall by full screen, single screen, or window.

Full Screen

Push source to video wall and display one full image on whole video wall.

Video wall display as below

Single Monitor Push

Push source to one of screens of video wall.

Video wall display as below

Window Push

Push the source to one of windows on video wall.

Video wall display as below

Follow

Apply follow, user is able to monitor another user's operation upon certain source in real time.

1)   Call out monitor bar, select [Follow]

2)   Select target workstation and monitor, click to follow.

3)   Selected monitor will prompt up request, after approval, applicant workstation will display the

same content as selected monitor.

4)   The higher access level user is able to follow lower level user directly without application.

5)   If workstation 1's monitor is in quad-view and applying to follow a quad-view monitor, it will show the quad-view content.

6)   If workstation 1's monitor is in Single view and applying to follow a Quad-view monitor, it will show the up-left content of the Quad-view in a full screen.

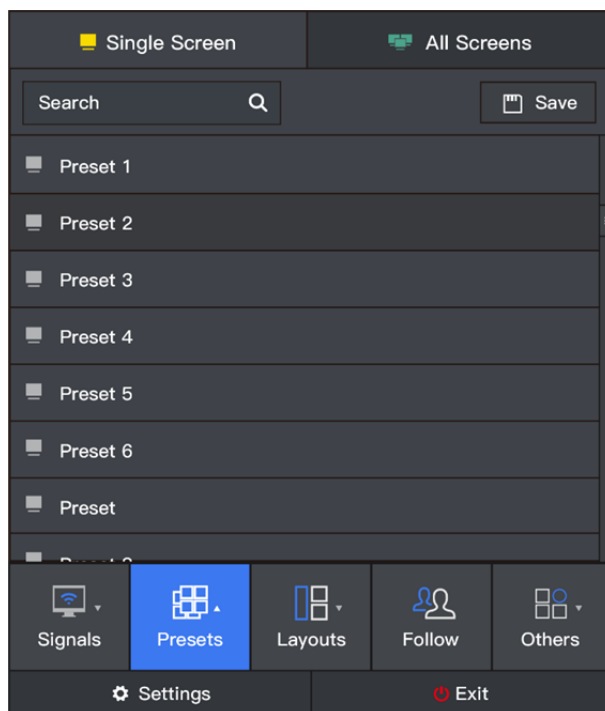7)   Click icon [icon] to quit follow.

Preset

User is able to create and save preset of the workstation, and able to recall saved preset to improve working efficiency.

Save Preset

The preset including sources layout and roaming relationship between monitors and fiber output port. User is able to save preset for certain monitor or whole workstation.
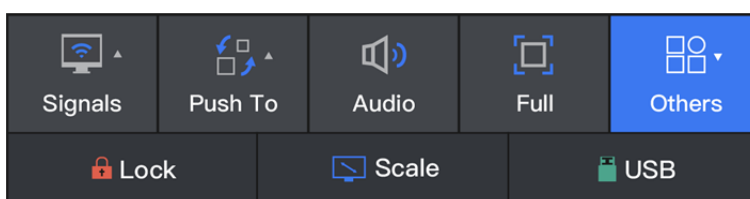
Preset Recall

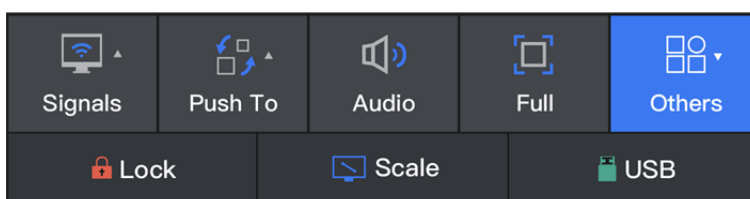User is able recall monitor preset or workstation preset.

Lock

To avoid misoperation, once the source was locked, source switching and pushing are disabled while the K&M access still valid.

1)   Call output window bar, [others] to select [Lock]

2)   To unlock by click [Unlock].

Aspect Ratio

To setup best fit aspect ratio of the monitor.

USB HID

To meet demand of USB HID device,

USB HID device are supported by connecting to master screen receiver, including flash disk, printer and scanner.

- Once USB device plugged in, call out master monitor OSD, [Others]>[USB] to enable connection.

- If source switched, need to repeat above operation to enable again. It is not allowed to switch source when USB device is working process not completed.
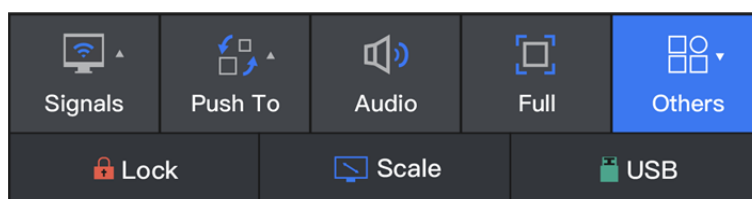
Only works with transmitters and receivers which support USB 2.0.

Audio Volume

Support turn up or turn down audio volume of the source. If the monitor is under quad-view mode, the audio adjust works only for left-up source as default no matter the operation is conducted via which window OSD.
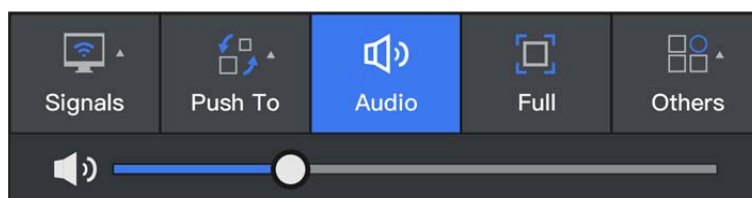
Video Wall Operation

By apply [others]-[Video wall] via monitor OSD, user is able to manage video wall by mouse.

There is video wall OSD at the bottom of video wall, which can be applied to preview source, save and recall preset, and clear video wall display.

1) Source Switching

Option 1, move mouse cursor to target window, double click to select, then move mouse to call OSD menu, select target source, single click to switch source. The selected window will be highlighted with color frame.

Option 2, mover mouse cursor to call out OSD menu, select target source, drag and drop to switch.
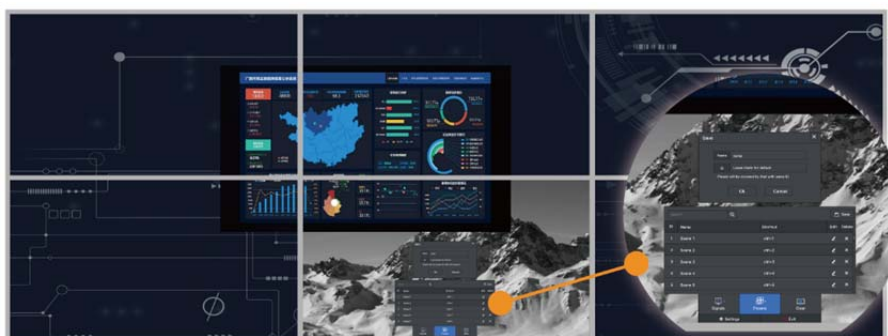

2) Create Window

Select one source via OSD menu, and move mouse cursor to expected position, hold left button and drag to create window.

3) Preset Management

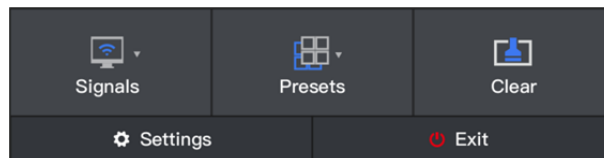Call out video wall menu, select [Preset] to save, recall and edit preset.

4)   Close Window

Option 1: Double click to select window, right click and select [Close].

Option 2：Move mouse cursor to menu bar; click **[Clear]** to close all the windows on video wall.

5)   Layers Order

Select one window, right click the mouse, and select [Bottom] or [Top] to adjust layer order.

6)   Zooming

Select one window, move the mouse to resize window by dragging the window corner.

7)   Window Properties Settings

Click [settings] on menu bar, user is able to customize the window's boundary color, size of mouse icon and language etc.

8)   Exit

Call out video wall OSD menu; click [Exit] to quit video wall operation, the K&M access will back to workstation.

Exit System

Call out OSD menu at any monitor click [EXIT]. After exit the system, the log in interface will be showed on master screen only.

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