5 Port USB HDMI Multi-View KVM Switch
(MH2415)

User Manual

Contents

Overview
Product Description

MH2415 is a 5-port multi-view KVM switch, it supports USB 2.0 HUB. Users can simultaneously monitor the screens from multiple computers on one screen use a set of keyboard and mouse. Control and switch between computers/video sources are very convenient by using the keyboard to select the target computer screen, providing real-time screen updates, which effectively improve the efficiency of real-time monitoring of application scenarios.

The MH2415 allows users to access 5 computers/devices from a single console, consisting of a USB keyboard, USB mouse, and HDMI / DP monitor. With the MH2415, you can connect up to two monitors – one acts as the main control and supports all the display modes, and the other acts as a secondary display that only shows a channel selected from the main monitor in full-screen mode. The MH2415 providing different display modes including Quad View, Triple View, Dual View, Full Screen, and Picture in Picture (PiP). Video switching for the   second monitor is easy with Boundless Switching which allows you to switch channels simply by moving the console mouse to the desired channel on the main display.

The MH2415 supports Daisy Chain and Cascade connection. In a daisy chain setup, you can control and monitor up to 10 computers via a single set of keyboard and mouse. This enables the use of only one keyboard/mouse over several computers by switching the console keyboard and mouse focus to the monitor of each secondary station. You can also choose to have all sources displayed on one monitor by cascading, where MH2415 units are connected to one another via its KVM Ports. In a cascade setup, you can control and monitor up to 20 computers (4 additional MH2415 Switches) using a single console.

Setup is fast and easy; simply plug cables into their appropriate ports. There is no software to configure, no installation routines, and no incompatibility problems. Since the MH2415 intercepts keyboard input directly, it works on Microsoft Windows, Linux, Unix and Mac platforms.

Features

- A single multi-view console controls up to 5 video sources on one screen. Support display modes including Quad View, Triple View, Dual View, Full Screen, and Picture in Picture (PiP).
- Support dual output on console side – a multi-view output and a full screen output.
- Switch the display mode and computer port via front panel pushbuttons, OSD, keyboard/mouse hotkeys.
- Easily resize the screen view in Triple View mode, Dual View mode, and Picture in Picture (PiP) mode.
- Supports reposition the screen view in PiP mode.
- Select optimum EDID settings to ensure high-quality resolution between different screens and provide a high-quality picture display.
- Daisy Chain Control – Controls up to 1 additional MH2415 from a single console.
- Cascade up to 2 levels – Controls up to 20 computers (up to 5x 4 multi-view mode).
- Supports PCM2, 5.1, 7.1 channel, Dolby 5.1 and DTS5.1 audio output and Mic input.
- Supports USB HUB 2.0
- Supports HDMI digital display-fully compatible with HDMI2.0 and HDCP, whether it is in single-screen mode or multi-screen mode, resolutions of all window view up to 4K (3840×2160@60Hz), YCbCr4:4:4
- Boundless switching in the multi-screen mode – simply move the mouse cursor across windows and switch automatically.
- Mulit-platform compatible – Windows, Linux, Mac, Unix
- Compatible with wireless USB keyboards and mice of major well-known brands, and multimedia USB keyboards (PC, Mac, and Sun).
- Complete keyboard and mouse signal simulation to ensure error-free power-on and switching.
- Hot pluggable-you can add or remove servers at any time without turning off the power.

Dimensions
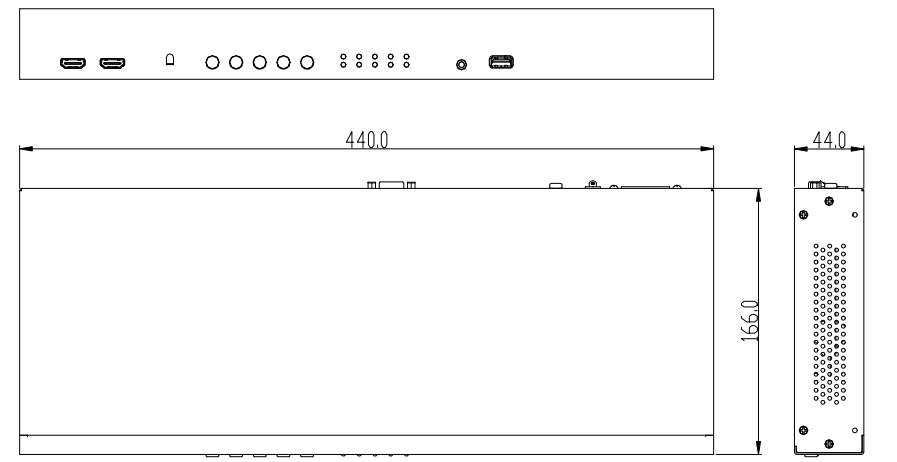
Rear View
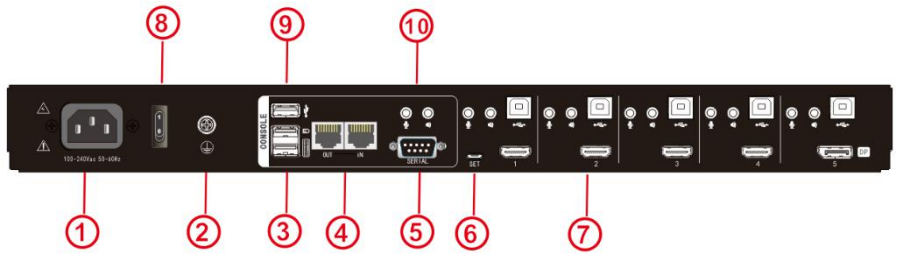
| No.	Component
1	Power Socket
2	Grounding Terminal
3	Console USB Ports
4	Daisy Chain Control Port
5	RS232 Port
6	Upgrading Port
7	KVM Port
8	Power Switch
9	USB2.0 Port
10	Console Microphone and Speakers Ports

Installation

1. To prevent damage to your installation from power surges or static electricity. It is important that all connected devices are properly grounded.

2. Make sure that the power to all devices connected to the installation is turned off. You must unplug the power cords of any computers that have the Keyboard Power On function.
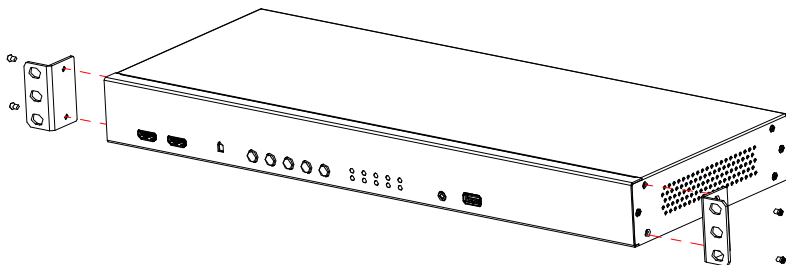
Rack Mounting

For convenience and flexibility, the MH2415 Switch can be mounted on

system racks. To rack mount a unit, do the following:

1. Remove the screws attached to the unit as shown in the diagram below:
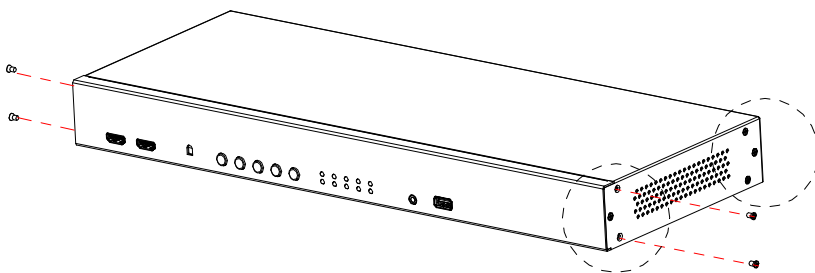
> ***Note:*** *You can remove the screws on the front side panels or the back-side panels. The succeeding diagrams show the rack mounting steps for the back panel.*

2. Using the screws provided in the Mounting Kit (not included with this package), screw the mounting bracket into the side of the unit as show in the diagram below:

3. Screw the bracket into any convenient location on the rack.
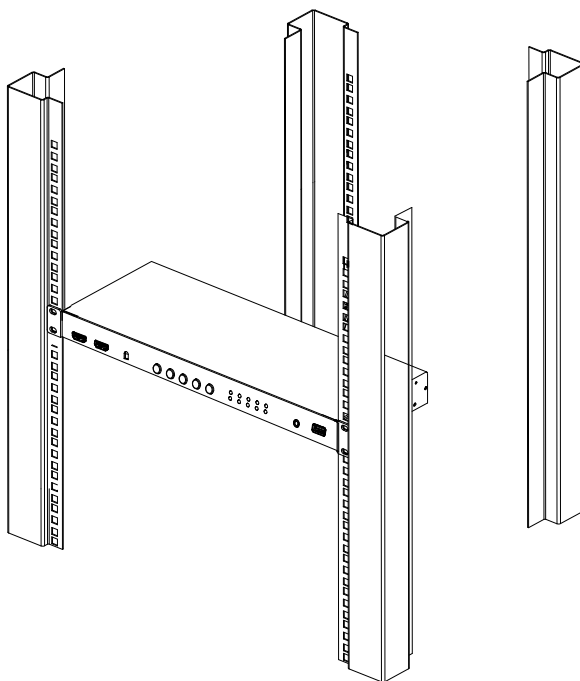
Note: These screws are not provided in the Mounting Kit. We recommend that you use M5 x 12 Type I cross, recessed type screws.

Single Station Installation

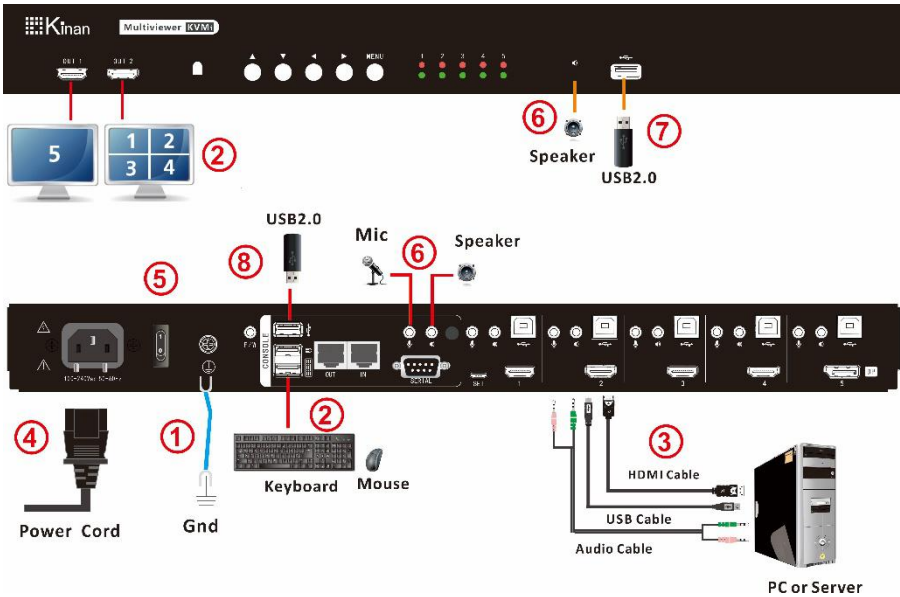Before starting the installation, please make sure that the power of all the devices you will connect is turned off.

1. To prevent damages from power surges or static electricity, ground the MH2415 by connecting one end of a grounding wire to the grounding terminal, and the other end of the wire to a suitable grounded object.

2. Plug your USB keyboard and USB mouse into the USB Console Ports located on the unit's rear panel. (Refer to② in the following installation diagram)

3. Plug your HDMI display into the Console Port located on the unit's front panel. (Refer to② in the following installation diagram)

4. Plug the HDMI,USB, and Audio Cable into the corresponding ports on the rear panel to connect the servers with the MH2415. (Refer to③ in the following installation diagram)

5. Plug the power cord into the MH2415 power socket, and then plug the other end of the power cord into an AC power source. (Refer to④ in the following installation diagram)

6. Power on the KVM switch, the display, and the computers/devices. You can easily switch between multiple computers and select the display modes by pressing the pushbuttons or keyboard hot key [Win]

+ [Alt].
7.   To use separate microphone and speakers, plug them into the analog audio ports on the unit's front or rear panel. (Refer to ⑥ in the following installation diagram)
8.   Plug your USB peripherals into the Type A ports (one easy-access port is located on the front for portable devices; the second is located on the rear). (Refer to ⑦ in the following installation diagram)

Note: If the console monitor has built-in speakers and supports audio through the HDMI interface, there is no need to use a separate speaker.

To ensure signal integrity and simplify cable layout, we strongly recommend you using high quality cables with different length as shown in above table.

Daisy Chaining

To display even more source devices, up to 2 additional MH2415 units can be daisy chained from the original MH2415. As many as 10 source devices can be controlled from a single console in a complete daisy chain installation. Each MH2415 in a daisy chain requires its own monitor as the video signals cannot be passed through to other units on a daisy chain.
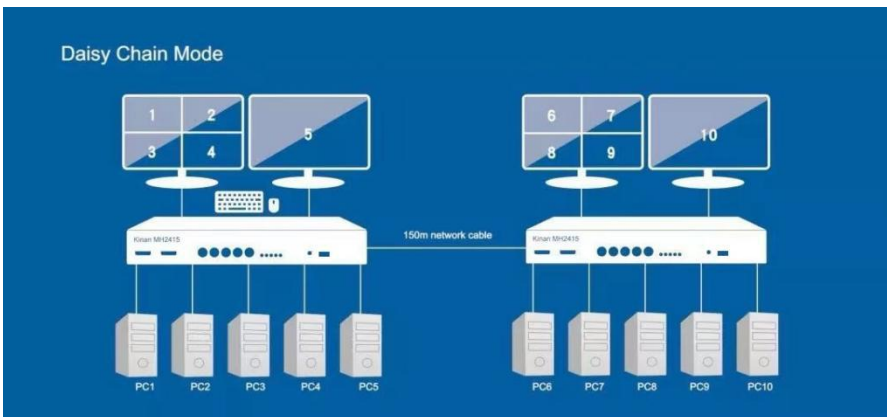
To set up a daisy chain installation, make sure that the power to all devices has been turned off, and do the following:

1. Use a Cat 5 cable to connect the Out port of the primary MH2415 to the In port of the secondary MH2415 unit(s) (first station out to second station in).
2. Plug an HDMI display into the Console HDMI OUT 2 port and another HDMI display into the HDMI OUT 1 port, both HDMI out ports are located on the unit's front panel.
3. Cable up the computer and the switch according to the information provided under Single Station Installation.
4. Power on the installation: plug in the power cord for the first station, then power on the second station. After all the stations are up, power on the computers video source devices.

    Note: Make sure the computers and devices that the MH2415 connects to are also properly grounded.
5. To switch to a computer in a daisy chain, press hotkey 【Win】+【Alt】, and then press【TAB】. When switching to a computer, only the keyboard and mouse signals are connected.

Daisy Chain Installation Diagram

Cascading

The MH2415 supports centrally control up to 4 MH2415 units by cascading 4 additional MH2415 units. As many as 20 source devices can be controlled from a single MH2415 console in a complete cascade installation. (It only support video cascade, keyboard and mouse signals are not shared).

To set up a cascade installation, make sure that the power to all devices has been turned off, and then do the following:

1. Connect the console ports of a secondary MH2415 to any of the HDMI KVM Ports on the primary MH2415 using the provided KVM cables.
2. To cascade another MH2415, repeat step 1.
3. Connect the secondary MH2415 units with sources. For detailed steps, see Single Station Installation, page5.
4. Connect the primary MH2415 with a USB keyboard and a USB mouse.
5. Power on the MH2415 unit and the secondary MH2415 units. After all the stations are up, power on the connected source devices.

   *Note: Make sure the computers and devices that connected the MH2415 are also properly grounded.*

6. Each secondary MH2415 unit is recognized as an input source (port 1 ~ 4) to the primary MH2415. To only display the sources of a particular secondary MH2415, use any of the following methods:

   ◆ Keyboard mouse hotkeys
   ◆ To invoke the OSD

Cascade Installation Diagram
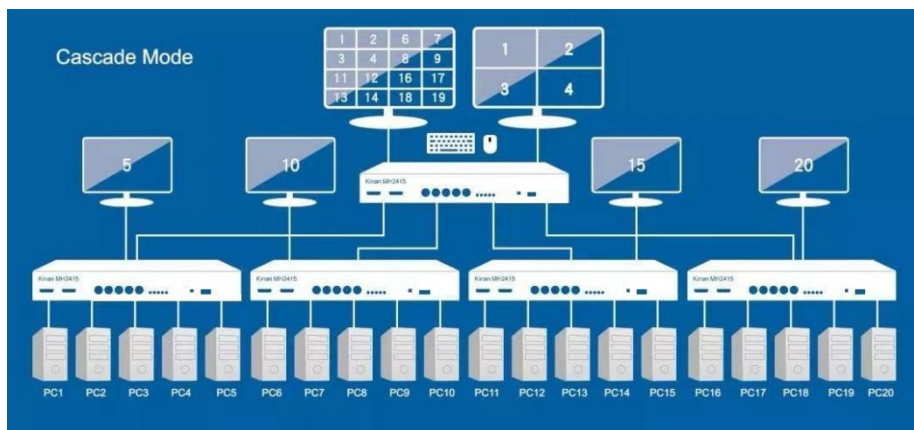
Operation

Front View
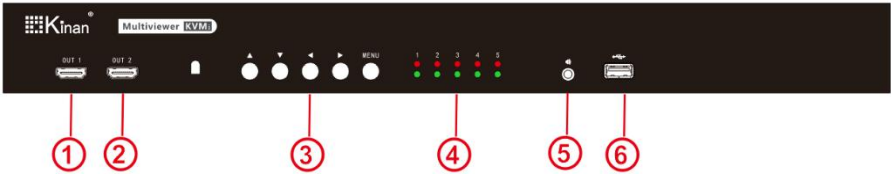
No.	Component	Description	
1	OUT1	Console HDMI secondary display interface	
2	OUT2	Console HDMI main display interface	
3	MENU	Press this to invoke the on-screen display (OSD) Menu.	
	△	Previous menu	Press the two buttons at the same time to return to the previous menu
	▽	Submenu	
	▷	Next option (OSD menu)	Press the two buttons at the same time to reset the device
	◁	Previous option (OSD menu)	
4	LEDs	Red: the computer is connected to the device Green: keyboard and mouse current port	
5	Audio Ports	Audio output	
6	USB 2.0 Peripheral Port	USB 2.0 peripherals (printers, scanners, etc.) plug into this port.	

Hot Key Operation

Hotkey List

| Hotkey		Function
Display Modes Selection	[Win] [Alt] [F1]	Mode1: Full Screen Mode (when switching from multi-picture mode to full screen mode, the screen is displayed as the window where the mouse is located).
	[Win] [Alt] [F2]	Mode2: Dual View Mode
	[Win] [Alt] [F3]	Mode3: Triple View Mode
	[Win] [Alt] [F4]	Mode4: Quad View Mode
	[Win] [Alt] [F5]	Mode5: Picture in Picture (PiP mode)
	[Win] [Alt] [F6] ~ [F12]	Custom Mode
Main screen port switch	[Win] [Alt] [1] ~ [5]	Switch from 1~5 ports of the main screen (in the multi-screen mode, switch the screen of the window where the mouse is located).
Secondary screen port switch	[Win] [Alt] [1] ~ [5] on the number pad	Switch directly to port 1~5 of the secondary screen.
Screen sync	[Win] [Alt] [0] on the number pad	Synchronize the secondary screen with the main screen display.
Swap locations of video sources in PiP mode	[Win] [A lt] [F5]	Press the hotkeys to swap locations of video sources in PiP mode.
Resize windows	[Win] [Alt] [PgUp]	Zoom in the window

	[Win] [Alt] [PgDn]	Zoom out the window
Lock audio	[Win] [Alt] [A]	Lock / Unlock the audio focus of the current port / window.
Lock USB2.0	[Win] [Alt] [U]	Lock / Unlock the USB2.0 focus of the current port/window.
Reset the device	[Win] [Alt] [R]	Press this hotkey to reset the device.
Lock / Unlock keyboard/mouse	[Win] [Alt] [K]	Lock / Unlock the keyboard/mouse in the current window in the multi-screen mode.
Lock / Unlock Audio	+ 【M】	Turn off / on audio on all ports.
Turn on/off keyboard/mouse broadcast	+ 【B】	In multi-screen mode, broadcast the keyboard and mouse to all windows (press this hotkey to turn off the broadcast if the broadcast function is on)
Get information about each window	+ 【I】	Get the current display information of each window
Change the display resolution	+ 【Print Screen】	Change the display resolution of all input signals
Switch to the next level	+ 【TAB】	Switch the keyboard and mouse to the second level of the daisy chain cascade

OSD Operation

The OSD menu contains all the display settings and system settings of the
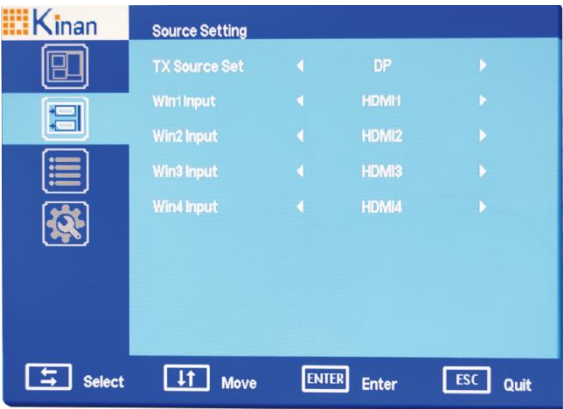MH2415. To access the OSD menu, do the following:

- ◆ Press the MENU button on the unit's front panel
- ◆ Press keybord hotkeys

Multi Window Setup
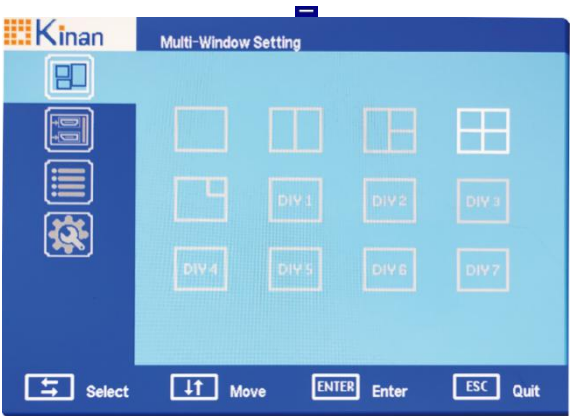
In this menu, you can switch display modes, the MH2415 supports display
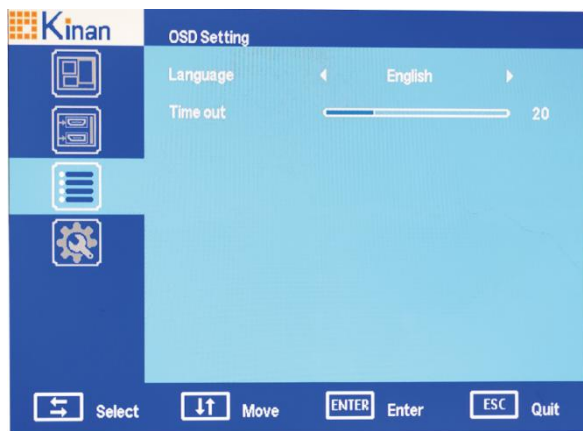modes including Quad View, Triple View, Dual View, Full Screen, and Picture in
Picture (PiP).

Signal Settings

1) TX Source Set: select the port displayed in the secondary display screen.
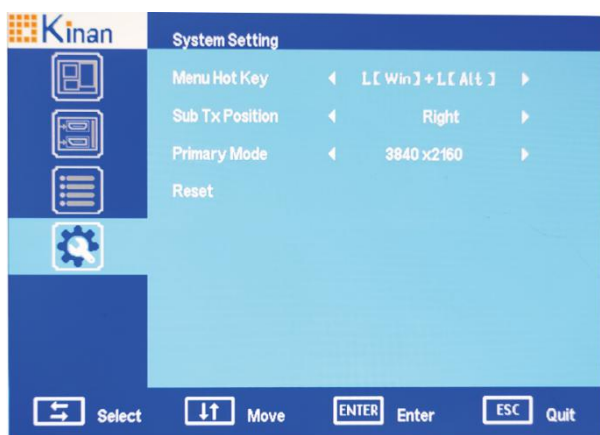
2)   Display 1-4 input: Select the input signal source of each display.

Menu setting

In this menu, you can change the display language and display time of the OSD.

System Setting

1. Menu hotkey: change keyboard hotkey.
2. Sub TxPosition: change the relative position of the secondary display screen and the main screen.
3. Best resolution: set the best resolution of each signal source.
4. Reset: restore the device to factory settings.

Display Modes

You can view multiple computers connected to the MH2415 in different layouts on the same screen by setting the display mode. This section introduces you to different display modes, and ways of switching to them.
Note: In an MH2415 system, the Display connected to OUT1 supports full-screen mode only or displays the same contents of the display that connected to OUT2.

Full Screen

| OUT2 | OUT1 |

Method	Description
Keyboard hotkeys	【Win】 + 【L_Alt】 + 【F1】
OSD Menu	Multi-window setting —— ▢

Dual View

OUT2   **OUT1**

Method	Description
Keyboard hotkeys	【Win】＋【L_Alt】＋【F2】
OSD Menu	Multi-window setting ——

Triple View

OUT2   **OUT1**

Method	Description
Keyboard hotkeys	【Win】＋【L_Alt】＋【F3】
OSD Menu	Multi-window setting ——

Quad View

OUT2   **OUT1**

Method	Description
Keyboard hotkeys	【Win】＋【L_Alt】＋【F4】
OSD Menu	Multi-window setting ——

Picture in Picture (PiP)

OUT2   **OUT1**

OUT2   **OUT1**

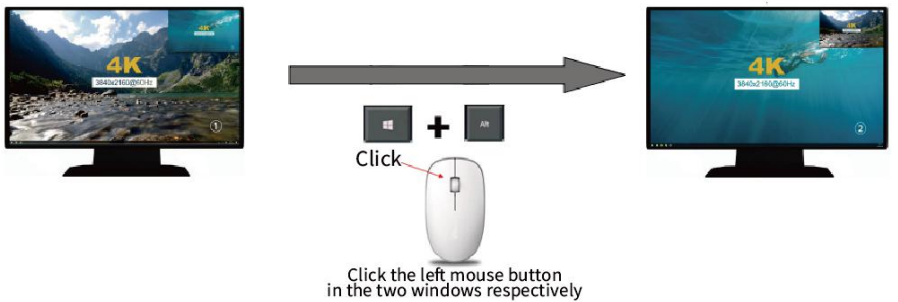| Method	Description
Keyboard hotkeys	【Win】+【L_Alt】+【F5】(Press this hotkey in the picture-in-picture mode to adjust the position of the picture-in-picture)
OSD Menu	Multi-window setting ——

Mouse switch

In the multi-screen mode, you can press and hold the hotkey (the default is [Win] + [Alt]) and then click the left mouse button in any two windows to swap the displayed images.

Appendix
Specifications

Model No.			MH2415
Computer Connections			5
Port Selection			Front panel pushbuttons, keyboard hotkeys, mouse wheel, On-Screen Display (OSD)
Display Mode			Quad View, Triple View, Dual View, Full Screen, Picture in Picture (PiP)
Connectors	Console Ports	Display	2x HDMI type A
		Keyboard/ Mouse	2x USB type A (White)
		Mic	1x Min Stereo Audio Jack (Pink)
		Speaker	2x Min Stereo Audio Jack (Green)
	KVM Ports	Display	4x HDMI type A, 1x DisplayPort
		Keyboard/ Mouse	5x USB type (White)
		Mic	5x Min Stereo Audio Jack (Pink)
		Speaker	5x Min Stereo Audio Jack (Green)
	USB2.0 Port		2x USB type A (White)
	Upgrade Port		1x Micro-USB
Switch	Selected		5x Pushbuttons
LEDs	Online		5 (Red)
	Selected		5 (Green)
Input Power Rating			100V-240Vac, 50-60Hz, <1.5A
Video			3840×2160 @ 60 Hz
Power Consumption			10W
Environmental	Operating Temperature		0-50℃
	Storage Temperature		-20-60℃
	Humidity		0-80%RH, Non-condensing
Physical Properties	Housing		Metal
	Weight		2.35kg
	Dimensions (L x W x H)		440 mm x 166 mm x 44mm