TESmert TESmart

User Manual

4x3 Triple Monitor KVM Switch

HDC403 Prime 23

To Enjoy Smart

HDC403 Prime 23

English

English

Preface

It's our great honor that you have chosen the KVM Switch produced by our company, Tesla Elec Technology Co.,Ltd. In this user manual, you will learn how to operate and use this product. Please read this user manual comprehensively before use. If you have any questions, comments or suggestions, please contact us via the following email:

support@tesmart.com.

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Product Information

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www.tesmart.com

# Contents

1. Safety Tips and Warnings

Tips: Please read the safety tips and warnings for KVM Switch comprehensively before use. Use this produce in accordance with its instructions, safety tips and warnings to prevent unnecessary damage to the product and potential dangers to users.

⚠ Keep the product away from water.

⚠ Clean the product with dry cloth.

⚠ Use the product in accordance with its instructions and do not block its vents.

⚠ Keep the product away from ignition sources, such as heat sinks, heat accumulators, stovepipes and other heat production settings (including audio amplifiers).

⚠ Do not touch the product and the power cord with wet hands so as to lower the risk of electric shock and damage to the product. Do not let the product get wet or become damp.

⚠ Unplug the power supply of this product in thunderstorm days or when it has been not used for a long time.

⚠ Do not expose this product and its battery to open fire or overheating environment. Dispose the waste battery in accordance with instructions.

⚠ Users shall not remove and repair the product without authorization.

2. Battery Description
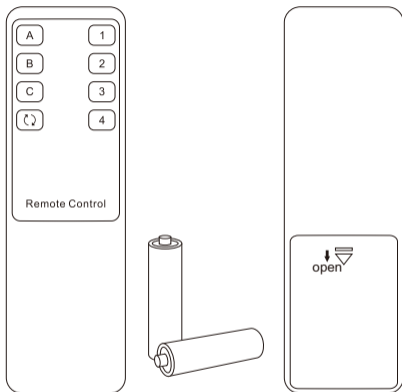
Tips: By default, the remote control is not equipped with batteries, due to the safety requirements of some express companies. Install AAA dry cells before use.

Caution: Improper disposal of the lithium battery may cause an explosion. Do not throw the battery into fire. Keep the battery away from children. Dispose the waste battery in accordance with local regulations.

3. Warranty Information

We warrant this product as free of defects in material and workmanship for a period of one (1) year from the date of shipment. If during the period of warranty this product proves defective under normal use, we will repair or replace this product, provided that this product has not been subjected to mechanical, electrical, or other abuse or modifications. If it fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for six (6) months from the day of reshipment to the buyer.

4. Preface

Dear Users,

Triple monitor KVM Switch can easily integrate cross-platform computer devices and greatly simplify the management of a triple-display multimedia workstation. With the MST technology and multiple interface type, if you connect PC to one group of input ports on the KVM, you will realize 3-screen extended display or copy display. It has the same effect as connecting the PC directly to 3 displays. The KVM also supports displaying different PCs on 3 monitors.

This KVM support USB 3.0 ports with superspeed data transfer rate. With 1 USB-C and 1 USB-A port on the front panel, which can be used as USB data transfer ports, and can also be used to charge your phone, tablet, etc. The USB-C port on the rear panel can provide power to the connected PC while displaying at the same time. With EDID emulators in each input port, it can keep PCs always having correct display information.

Tips: If you need to control more computers or conduct more complex and professional switching, you can also choose other products of our company. For more details, please visit our official website: www.tesmart.com.

5. Features

- Using 3 monitors, 1 set of keyboard and mouse to control 4 computers
- Support resolution up to 3840x2160@60Hz 4:4:4
- Support MST(Multi-Stream Transport) technology
- Support 2 display modes
- Support Unix/Windows/ Debian/ Ubuntu/Fedora/ MacOS X/ Raspbian/ Ubuntu for Raspberry Pi and other Linux based systems
- Integrated microphone and L/R audio output port
- Support USB 3.0 ports with super-speed data transfer rate
- Support locking L/R audio and USB 3.0 devices to a fixed PC or switching between PCs
- Support wired network connection, 4 PCs connected to KVM can access to the network with only one network cable
- With EDID emulators in each input port, it can keep PCs always having correct display information
- Support keyboard and mouse pass through mode to improve mouse and keyboard compatibility
- Support IR signals, front panel buttons and keyboard hot keys to switch input ports
- Support charging the USB-C devices connected to the ports marked 'PC1'
- Support connecting mobile device to the front panel USB ports to charge

6. Packing List

- 1 * 4x3 KVM Switch
- 2 * KVM Cables
- 4 * HDMI Cables
- 1 * DisplayPort Cable
- 1 * USB-C Cable
- 1 * USB 3.0 Type-A to Type-B Cable
- 1 * IR Remote Control
- 1 * DC 20V Power Adapter
- 1 * User Manual
- 2 * Rack-ears

Tips: After receipt of the product, please check the packing list carefully to make sure that no components have been lost and no damage to the product has been caused during transportation. If you have any problem, please contact us at any time.
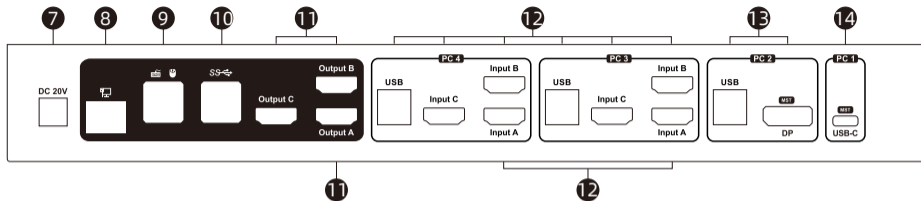
7. Panel Description
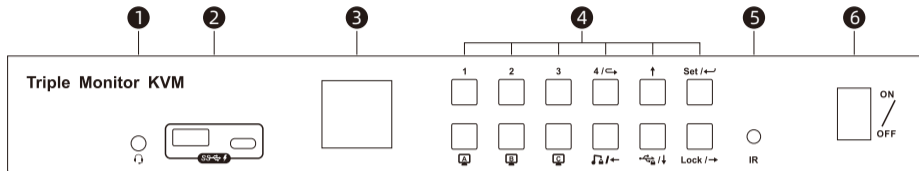
ID	Name	Function	ID	Name	Function
1	Audio integration port	Integrated microphone and L/R audio output.	2	Data transfer and charging port	Can be used to transfer data and charge your mobile devices.
3	Color LCD	Display current status and function settings.	4	Keypad	Press to control the KVM. Please refer to Chapter 10.1 for the detail.
5	IR receiver	Receive IR remote signal.	6	Power switch	Turn on or turn off power supply.
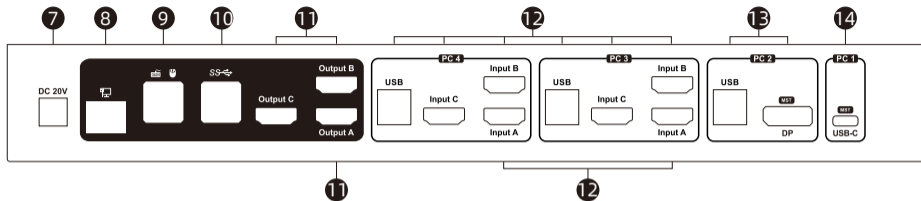
ID	Name	Function
7	DC 20V	20V DC power supply.
8	LAN port	Insert the network cable into this port to let the 4 input PCs to connect to the local network area.
9	Keyboard and mouse input	For USB keyboard and mouse input.
10	USB 3.0 port	Connect to USB 3.0 device.

| ID	Name	Function
11	HDMI outputs	Connect to 3 HDMI displays for video output.
12	HDMI device input ports group	Each group contains 3 HDMI ports(marked as Input A/B/C) and a USB port. Connect the ports to corresponding input devices for signal input.
13	DisplayPort device input ports group	Contains a Displayport (right) and a USB port (left). Connecting to a DisplayPort device that supports MST allows for the output of 3 video signals via a single DisplayPort cable and connect a USB cable for USB signal transmit.
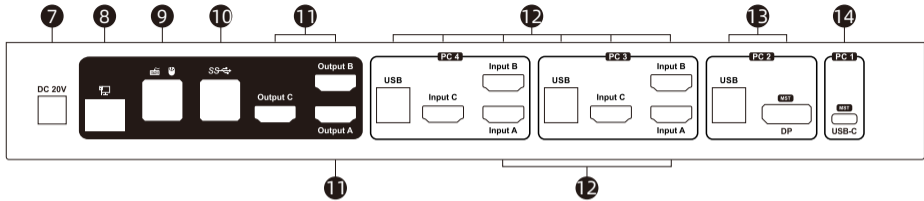
| ID	Name	Function
14	USB-C device input ports	Connecting to a USB-C device that supports MST allows for the output of 3 video signals, charging, and the transmission of USB signal via a single USB-C cable.

8. Connection Description

8.1 Connection Diagram
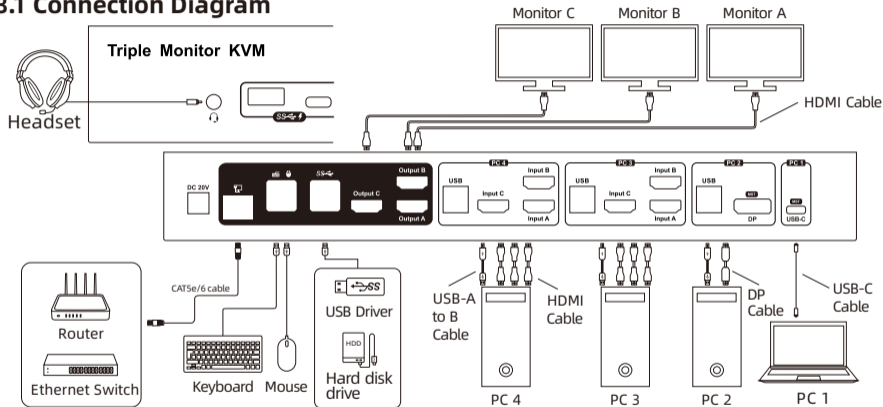
Tips: 1. Please refer to Page 19~20 for the detailed information about MST technology.
2. Please refer to Page 24~25 for the detailed information about how to charging device.

8.2 Connection Preparation

- Take into consideration all devices required to be connected and prepare a workbench large enough before the connection.
- Lay out the cables properly to facilitate the layout of power supply as a lot of power sockets and plug boards will be adopted in connection.
- Prepare different sticker labels to mark cables as a lot of cables will be adopted in connection.

(HDMI Cable + DP Cable + USB-A to USB-B Cable + USB-C Cable)
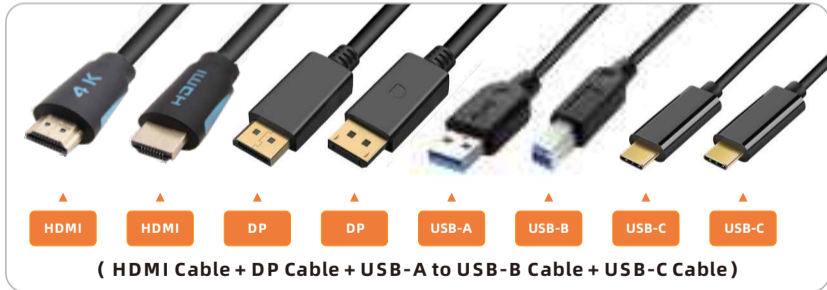
8.3 Connection Steps

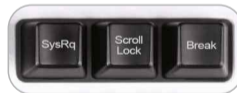1. Connect PC 1 with 1 USB-C cable.

2. Connect PC 2 with 1 DisplayPort cable and 1 USB 3.0 cable. Use DP cable to connect PC 2 to the DP port on the KVM, use USB Type-A end to connect PC 2 and Type-B end to connect the KVM.

3. Connect PC 3 with 2 HDMI cables and 1 KVM cable and connect PC 4 the same way.

4. Connect external mouse and keyboard to KVM's keyboard and mouse input port.

Tips: For the normal service of hotkeys, we recommend you use the full-key external keyboard with a separate [Scroll Lock] key (as shown above).
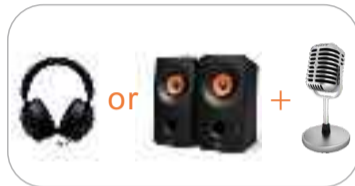
5. Connect USB 3.0 devices to KVM's standard USB 3.0 ports.

6. Connect KVM's HDMI output ports to 3 HDMI displays with 3 HDMI cables.

7. Connect external audio device to KVM's audio port.

8. Use 1 network cable, one end is connected to the RJ45 port, the other end is connected to a switch or a router.

9. Connect the power cable to KVM's DC 20V port and plug it to a power socket.

10. By now, the connection has been completed. Turn on the power supply and the KVM Switch will begin to work.

Tips: 1. Please refer to Page 25 for the detailed information about the charging USB ports on the front panel of the KVM.
2. By default, the network cable is not included in the package.
3. Please refer to Chapter 10 for the detailed information about how to use the KVM.

8.4 KVM Workbench

A workbench with 4x3 KVM Switch successfully connected is shown as below:

9. Function Description

9.1 MST Mode Description

The traditional triple monitor KVM switch needs to connect 3 cables to each input device for the normal use of the triple monitor function. But our 4x3 triple monitor KVM Switch support Multi-Stream Transport(MST) mode allowing triple HDMI displays from a single source.

• **Multi-Stream Transport mode:**
If your Windows OS PC with displayport or USB-C port and is DisplayPort 1.2 compliant, you can adopt 3 console displays from it. Support extend mode and duplicate mode at resolutions up to 4K for multitasking across 3 displays.

• **Operation method**
Connect the input devices and 3 UHD monitors according to the pictures in next page, the display mode will enable MST mode automatically.

> **Tips:** 1. Up to now, devices running Apple's MacOS, Ubuntu and other operating systems do not support MST mode.
> 2. Limited by bandwidth, the output resolution via MST supports a maximum display of two 4K60Hz 4:4:4 and one 4K30Hz 4:4:4 displays.

• **Enable MST mode**

Connect the PC to the displayport or USB-C port marked '**MST**' with a single displayport cable or USB-C cable.
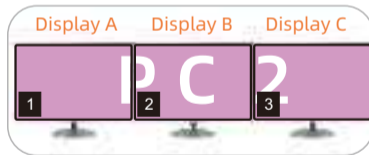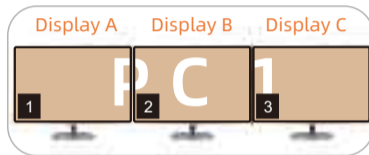
Tips: If a device that doesn't support MST is connected, the display will only show on output A or show three duplicated screens. The specific situation depends on the device.

9.2 Display Mode Description

The 4x3 KVM Switch support 2 display mode. You can choose to implement 3-screen extended display or duplicate display or display different PCs on 3 monitors.

Display Mode 1:

Duplicate 3 displays   Extend 3 displays

Tips: You can set the duplicate mode or extend mode in the Display Settings of the current selected PC.

Display Mode 2:
Display different Pcs on 3 monitors

In this mode, each input and output port on the KVM is marked with a letter, and the screen corresponding to the output port is output by the port with the corresponding letter of the PC selected. As shown in the figure above, the screen output by the monitor connected to Output A is from Input A of PC 3, the screen on Output B is from Input B of PC 1, and the screen on Output C is from Input C of PC 4.

When different PCs are displayed on different monitors, you can double-click the right [Alt] to switch the focus between different PCs.

Tips: 1. When any PC is expanded to display 3 screens, there is only one main display, and it is fixed to the display connected to a certain output port when switching (which display is determined by the operating system). If you need to switch the main screen to display on other output displays and their display order, you need to set manually in the Display Settings on the current selected PC.

2. Please refer to Chapter 10 for detailed information about how to switch between different modes.
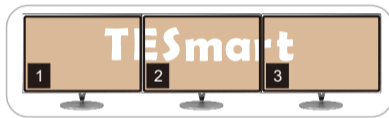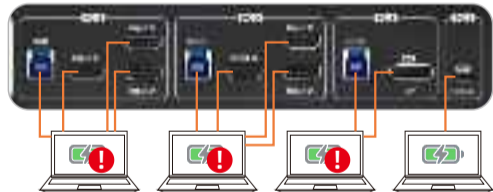
9.3 Built-in Charging Module

The 4x3 triple monitor KVM Switch comes with a powerful built-in charging module that allows you to charge your laptops, phone, tablet and other devices while you use it.

- Connect the laptops to the rear Type-C video port of the KVM and they will be charged via the PD protocol.

Tips: Laptops connected only to PC 1 can be charged.

Tips: 1. The USB-C port on the laptop needs to support the charging protocol to be able to charge.
2. When the laptop is connected to both the KVM and the original charger, the charger will give priority to charge it.

- Connect the tablet, phone, ect to the front USB-A or USB-C port and they will be charged.

Use the USB ports on the front panel of the 4x3 KVM Switch (including an USB-A and an USB-C ports) can support data transmission while charging. The USB port support BC 1.2 protocol, and are able to match voltage and current automatically based on the specifications of charging devices. It makes your charging safe and avoid damage.

9.4 Built-in Network Switch

The 4x3 KVM Switch have a built-in USB Ethernet Adapter, which adds a standard RJ45 port to all the PC that is connected to the KVM and allows you to connect your computer to a router or network switch for wired network connection without many network cables. Full 100Mbps Ethernet for fast, stable data transfer, more reliable than most wireless connections. Only one network cable can provide wired network connection for your 4 PCs at the same time. The Network can be disabled or enabled in the KVM settings menu.

EN sidebar

USB-A to USB-B Cable

USB-C Cable
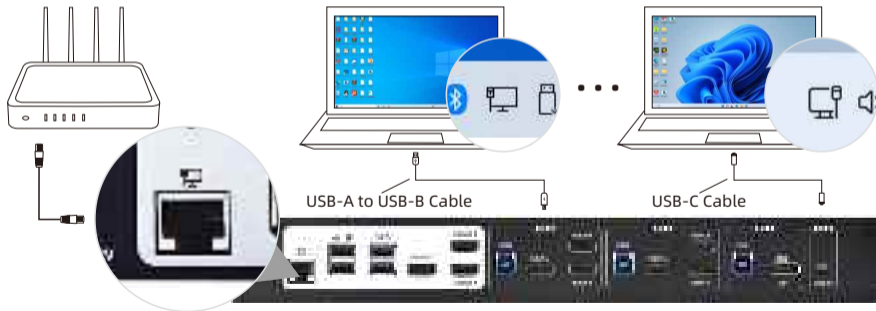
9.5 Lock L/R Audio and USB Focus Function

The 4x3 KVM Switch supports locking L/R audio and USB 3.0 focus. After the lock is turned on, the current audio or USB focus can be maintained and only the screen can be switched when switching; the audio focus lock and USB 3.0 focus lock are independent of each other, you can lock the audio or lock the USB separately. Only need to press the front panel keys to operate audio or USB focus lock.
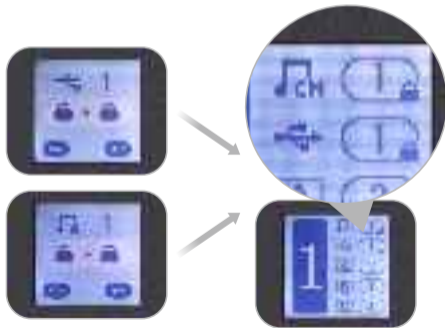
Tips: 1. The keyboard & mouse focus and USB focus are independent of each other, and the keyboard and mouse focus cannot be locked. When switching between different input sources in display mode 2, the keyboard and mouse focus will not change with the switch.

2. The lock state is automatically released after the KVM is powered off.

3. Please refer to Chapter 10.1 for detailed information about how to lock/unlock audio or USB.

9.6 Auto Scan Mode Description

The Auto Scan feature can automatically switch the display at regular intervals between the input devices that are powered on and connected to the KVM. As a result, any input devices connected to each port can be monitored without user intervention. Auto scan mode is off by default. You can turn on the auto scan mode through the front panel keypad, keyboard hot key, infrared remote control, etc.

After the auto scan mode is turned on, the lower left corner in the main menu interface of the LCD will appear a white "SCAN".

Tips: 1. When auto scan mode is turned on, regardless of the current routing status, all monitors will display PC 1 at first. When scanning, switch in the order of PC 1-4, and all displays will display the same PC every time it switches.

2. Please refer to Chapter 10 for detailed information about how to turn on/off the auto scan mode.

10. Operation Method

10.1 Front Panel Button Switching Method

When you use the front panel button or IR remote to control the KVM, the LCD display will inquiry your target action, then execute the command according to your operation. The LCD interface in the figure above is the main interface.

Schematic table of LCD interface and panel icons:

Icons	Meaning and function
	Monitor A、B、C.
	Audio focus icon, indicating the PC where the external audio focus is currently located.
	USB focus icon, indicating the PC where the external USB 3.0 device focus is currently located.
1	Keyboard and mouse focus icon, indicating the PC where the keyboard and mouse focus is currently located.
	Audio lock icon, indicating that the current audio is locked on the PC corresponding to the number behind the icon on the main interface.
	USB lock icon, indicating that the current USB 3.0 devices are locked on the PC corresponding to the number behind the icon on the main interface.
	Return button.
	Enter button.

1~4 button:

1. Press directly to switch among 4 PCs. After switching, 3 displays will display the selected PC at the same time, i.e. display mode 1.
2. In the settings interface, press **[4 / ↪]** to return to the main interface.

Display selection button:

Directly press the button, then press the **[1~4]** buttons according to the prompt of the LCD screen to make the selected monitor display the selected PC. i.e. display mode 2.

Tips: For example, if you press the combo like 'A-1', 'B-2', 'C-3', the image of channel 'Input A' of PC 1 will be displayed on the Display A, the image of channel 'Input B' of PC 2 will be displayed on the Display B and the image of channel 'Input C' of PC 3 will be displayed on the Display B right away. i.e. the display mode 2. The operation on the IR remote control are the same.

Audio lock button:

1. Directly press **[♫ / ←]** button, follow the prompts on the LCD screen, then press the **[Set / ↵]** button to lock the L/R audio to the current PC. Any operation after locking will not change the locked state. Press the key again in the locked state, and then press the **[Set / ↵]** button to unlock.

2. In the menu and setting interface, press **[🎞/←]** button to page forward or select to the left.

USB lock button:

1. Directly press **[🔄/↓]** button, follow the prompts on the LCD screen, then press the **[Set /↵]** button to lock the external USB 3.0 devices to the current PC. Any operation after locking will not change the locked state. Press the key again in the locked state, and then press the **[Set /↵]** button to unlock.

2. In the settings menu, Press **[🔄/↓]** button to select down.

Select up button:

In the settings menu, Press **[↑]** button to select up.

Lock button:

1. Press **[Lock /→]** button to lock the KVM. After locking, all displays will be off, audio output will be paused, and LCD screen brightness will be reduced to a minimum, all buttons will be invalid. Press **[Lock /→]** button again to light up the LCD screen, then enter the password to unlock.

2. In the menu and setting interface, press **[Lock /→]** button to page backward or select to the right.

Tips: 1. You can change your password in settings menu.

2. If you forget your password, you can restore the factory default settings to unlock. The default password is 1234. Press and hold the **[Lock /→]** for about 10 seconds to restore the factory default settings.

3. IR remote control and keyboard hot keys are invalid when KVM is locked.

Set /↵ **Settings button:**

1. Press the button, according to the LCD screen prompts, you can set up **save or load preset scenes, enable or disable auto scan, set auto scan time, enable or disable buzzer, set hotkey trigger key, enable or disable built-in network card, set screen brightness, change password** in the menu. Use the **[←] [→]** key to select among different options under each setting.

2. In the menu and setting interface, press **[Set /↵]** button to confirm.

Tips: 1. Only numbers 1,2,3,4 on the front panel of the KVM are available when changing passwords. You can also set a password to null to unlock without a password.

2. Under the password modification interface, the button **[♫ /←]** is used as the return button.

Tips: The setting status in the interface is automatically synchronized with the current settings, and the selected option is indicated by the dark color.

10.2 IR Remote Control

② —— Press the key, and then press the **[1~4]** key to make the selected monitor display the selected PC. (i.e. display mode 2)
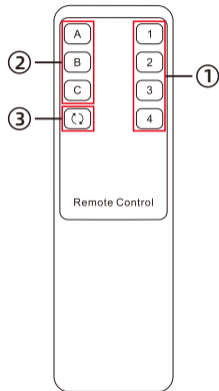
① —— Press directly to select among 4 PCs, and 3 displays will display the selected PC at the same time. (i.e. display mode 1)

③ —— Turn on/off auto scan mode.

Remote Control

Tips: The operation when using the IR remote control is the same as using the front panel buttons. If you want to use the IR remote control to switch to display mode 2, please refer to the tips on Page 32.

10.3 Keyboard Hot Keys

→ Use external keyboard hot keys to switch the input source or set up some other functions..

Tips: The keyboard hot keys can only work with external keyboard correctly connected to the keyboard and mouse input port of the KVM.

After press **[Right-Ctrl]** key twice within 2 seconds and you will hear the buzzer beep once, please enter the commands within 3 seconds and the KVM will execute the corresponding commands.

Select previous input port:
[Right-Ctrl]→[Right-Ctrl]→[PgUp]

Select next input port:
[Right-Ctrl]→[Right-Ctrl]→[PgDn]

| Right Ctrl | → | Right Ctrl | → | PgUp |

| Right Ctrl | → | Right Ctrl | → | PgDn |

Select port by port number(i.e. display mode 1):
[Right-Ctrl]→[Right-Ctrl]→[1]~[4]

| Right Ctrl | → | Right Ctrl | → | 1 | ~ | 4 |
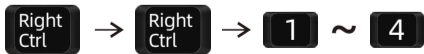
Switch PCs on different monitors separately(i.e. display mode 2):

Monitor A： **[Right-Ctrl] → [Right-Ctrl] → [←] → [1]~[4]**

| Right Ctrl | → | Right Ctrl | → | ← | → | 1 | ~ | 4 |

Monitor B： **[Right-Ctrl] → [Right-Ctrl] → [↓] → [1]~[4]**

| Right Ctrl | → | Right Ctrl | → | ↓ | → | 1 | ~ | 4 |

Monitor C： **[Right-Ctrl] → [Right-Ctrl] → [→] → [1]~[4]**

| Right Ctrl | → | Right Ctrl | → | → | → | 1 | ~ | 4 |

Switch focus in display mode 2:

[Right-Alt] → [Right-Alt]

| Right Alt | → | Right Alt |

Disable or enable buzzer sound:
[Right-Ctrl] → [Right-Ctrl] → [F11]

Right Ctrl → Right Ctrl → F11

Tips: The default setting of buzzer sound is enabled. Repeat this step to disable or enable buzzer sound.

Turn on auto scan mode:
[Right-Ctrl] → [Right-Ctrl] → [Space]

Right Ctrl → Right Ctrl → Space

Tips: The default auto scan time interval is 5 seconds. You can change the time interval by setting on the LCD menu or following the step presented on next page.

Increase or decrease auto scan time interval:
[Right-Ctrl] → [Right-Ctrl] → [+]/[-]

Right Ctrl → Right Ctrl → + / -

Tips: This hot key command can only work while the auto scan mode is activated. Press [Right-Ctrl] twice and keep pressing [+]/[-] key to adjust the time interval continuously. Increase or decrease 1 second at one time.

Press **[Esc]** to exit auto scan mode.

Esc

11. Change Hot Key Combinations

There are three kinds of trigger hot keys in this product, the default is **[Right-Ctrl]** key, and the alternative are the **[Scroll Lock]** and **[Left-Ctrl]** key. You can switch the hot key to others by:

Method 1:
→ Change the hot key through the settings in the LCD menu, press the **[Set /↵]** key and find the "Hot key" option to set.

Method 2:
→ Press keyboard hot keys to cyclically switch the control hot key.

Switch to [Scroll Lock]   Switch to [Left-Ctrl]

Switch to [Right-Ctrl]
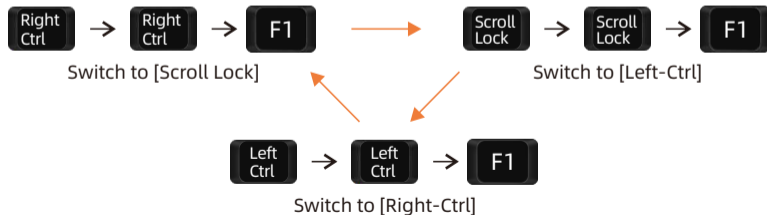
12. Pass Through Mode Description

12.1 Introduction of Pass through mode

Pass through mode is a built-in function of KVM, which is able to improve keyboard and mouse compatibility and enhance user experience. In the pass through mode, the keyboard and mouse are equivalent to directly connecting to the computer. At this time, you can use more keyboard and mouse functions and special functions that are not supported by traditional KVM.

Tips: The current version does not support keyboard and mouse connection via Bluetooth.

12.2 Keyboard and mouse compatible model list

Tips: The following list is from the most representative models of keyboard and mouse that have been tested in the laboratory, mainly from manufacturers with a high market share.

Brand	Model	Brand	Model	Brand	Model	Brand	Model
Agio	WQ-641	**Logitech**	G510	**Logitech**	Marble Mouse	**RAPOO**	X220
Dell	KB212-B	**Logitech**	G710	**Logitech**	Mk540	**RAZER**	RZ01-0145
Dell	KB522	**Logitech**	G910	**Logitech**	Mx1100	**RAZER**	RC30-021203
Logitech	G105	**Logitech**	K400PLUS	**Logitech**	Mx518	**Corsair**	K55
Logitech	G500S	**Logitech**	K845	**Microsoft**	Wireless Desktop 2000	**Corsair**	K70LUX

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