TESmart

User Manual

2x2 Dual Monitor Hybrid KVM Switch

HDMI DP USB-C

40 Gbps

HDC202 Xtreme 24

To Enjoy Smart

HDC202 Xtreme 24

English

TESmart

English

Preface

It's our great honor that you have chosen the hybrid KVM Switch produced by our company, Tesla Ele 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.

Copyright Notice

Product Information

For more information about TESmart products and how they can help you to enjoy your job, please visit the following TESmart website or contact an TESmart Authorized Reseller.

www.tesmart.com

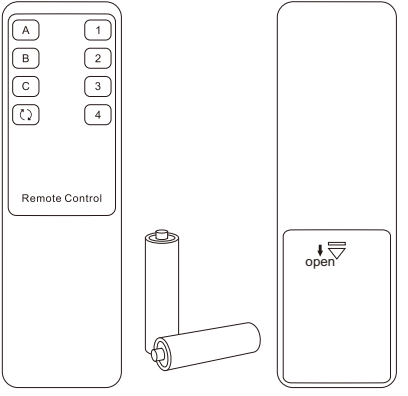
Contents

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,

2x2 Hybrid KVM Switch that integrates USB-C device and other PC into a desktop workstation. It comes with USB Type-C functionality that transfers video, audio, data, and even supports directly and securely 60W of USB-C device charging. That means with a single USB-C cable, users can reduce bulky cable setups, greatly saves both desktop space and costs. At the same time, the USB-C port on PC1 integrates PCI Express data transfer technology and DisplayPort display technology.

This KVM support up to 40Gbps superspeed data transfer rate, allowing users to work more efficiently. With USB charge port on the front panel, support BC 1.2 protocol to charge devices like mobile phones and tablets. The built-in Ethernet port supports gigabit network connections for 2 PCs. 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

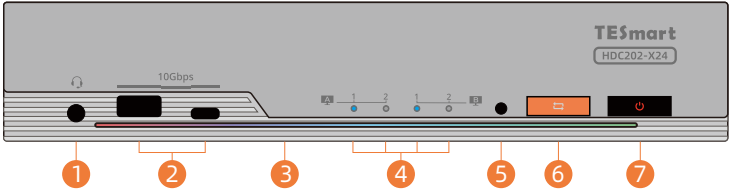
- Using 2 monitors, 1 set of keyboard and mouse to control 2 computers
- Support resolution up to 3840x2160@60Hz 4:4:4
- Supports DP Alt Mode which enables the USB connection to carry video signals
- Support 2 display modes
- The USB-C port on PC1 integrates PCI Express data transfer technology and DisplayPort display technology, and it can provide up to 60W of charging power to devices connected to PC1.
- Support Unix/Windows/ Debian/ Ubuntu/Fedora/ MacOS X/ Raspbian/ Ubuntu for Raspberry Pi and other Linux based systems
- Support Gigabit wired network connection, 2 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 USB 3.2 Gen 2 with up to 10Gbps data transfer rate
- Support various ways to control the KVM to switch input ports
- Keyboard and mouse support passthrough mode and legacy emulation mode, significantly improving compatibility for keyboards and mice
- Support connecting mobile device to the front panel USB ports to charge

6. Packing List

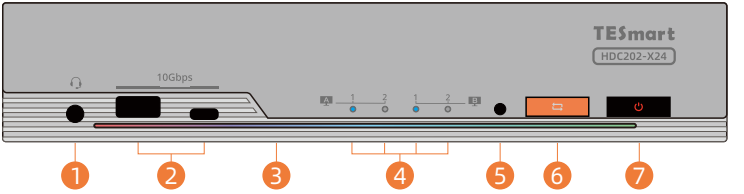
- 1 * 2x2 Hybrid KVM Switch
- 1 * KVM Cables
- 1 * DisplayPort Cables
- 1 * Thunderbolt 4 Cable
- 1 * IR Remote Control
- 1 * DC 20V Power Adapter
- 1 * User Manual

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.

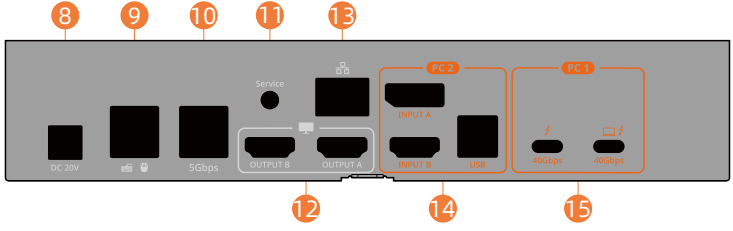
7. Panel Description



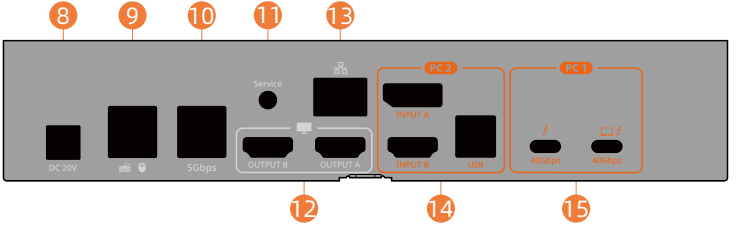
ID	Name	Function
1	3.5mm Audio/Mic	Integrated microphone and L/R audio output.
2	USB 3.2 Gen 2 ports	The maximum data transfer speed offered is 10 Gbps. Up to 7.5 W power output for faster charging.
3	RGB LED stirp	Features 4 lighting modes to match your atmosphere. Please refer to page 35 for how to switch different modes.



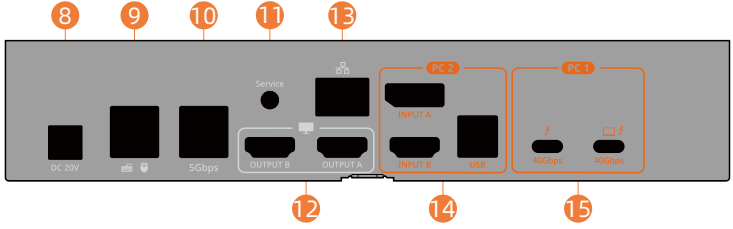
ID	Name	Function
4	Display status indicators	Display the current output status of each monitor.
5	IR receiver	Receive IR remote signal.
6	Input selection button	Press to switch input sources.
7	Power switch	Turn on or turn off power supply.



ID	Name	Function
8	DC 20V	20V DC power supply.
9	Keyboard and mouse input	For USB keyboard and mouse input.
10	USB 3.2 Gen 1 port	The maximum data transfer speed offered is 5 Gbps.



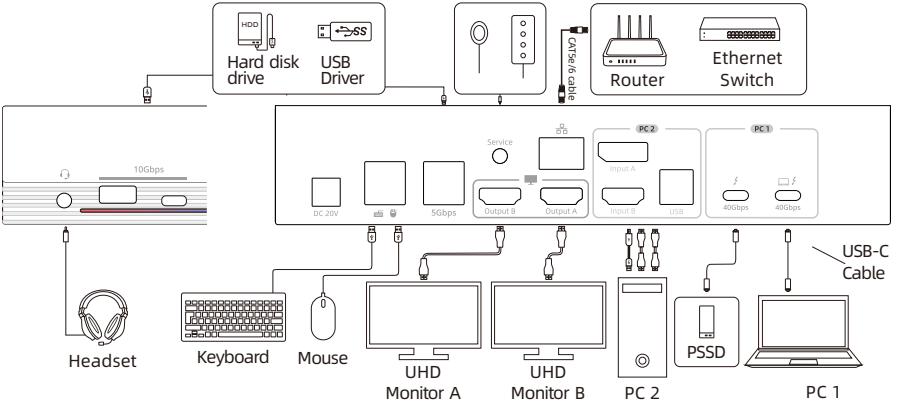
ID	Name	Function
11	IR extension in or UART command interface	Connect IR extension cable to receive remote IR signal, or connect external serial to use UART commands for channel switch and functionality control.
12	HDMI outputs	Connect to 2 HDMI displays for video output.
13	LAN port	Insert the network cable into this port to let the 2 input PCs to connect to the local network area.



ID	Name	Function
14	PC2 connection ports (For general devices)	Contains 1 DP port and 1 HDMI port(marked as Input A&B) and a USB-B port. Connect the ports to corresponding input devices for signal input. Devices connected to these ports **CANNOT** be charged.
15	PC1 connection ports (For Thunderbolt devices)	Includes one PC connection port and one expansion port. The PC connected to PC connection port can be charged. **Tips:** The expansion port is only available on PC1.

8. Connection Description

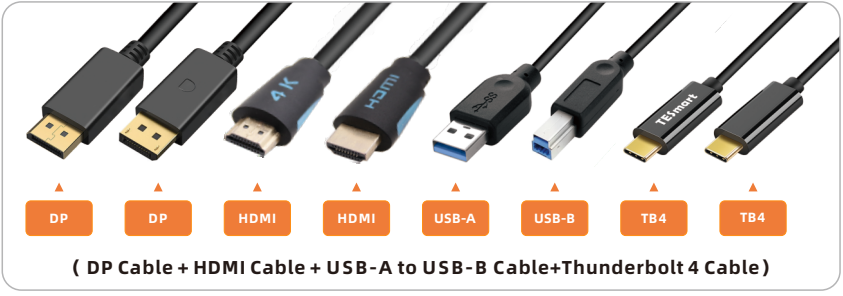
8.1 Connection Diagram



Tips: For optimal performance, use the included Thunderbolt 4 cable to connect the PC and the original Thunderbolt 4 cable to connect the PSSD.

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.



(DP Cable + HDMI Cable + USB-A to USB-B Cable+Thunderbolt 4 Cable)

8.3 Connection Steps

1. Connect PC 1 to the port labeled "⊡" on the KVM using a single Thunderbolt 4 cable.

Tips: To ensure proper video transmission, please confirm that your laptop supports Thunderbolt 3 and above or DP Alt Mode protocols.

2. Connect PSSD to the expansion port.

Tips: Devices connected to the expansion port will not be switched.

3. Connect PC 2 with 1 DP cable and 1 KVM cable.

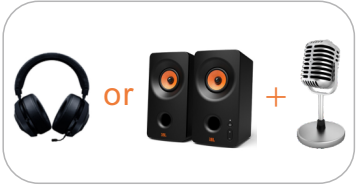
4. Connect external mouse and keyboard to KVM's keyboard and mouse input port.

5. Connect USB 3.2 devices to KVM's standard USB 3.0 ports.

6. Connect KVM's HDMI output ports to 2 HDMI displays with 2 HDMI cables.

7. Use the network cable to connect the LAN port on the KVM Switch to a router or local area network switch.

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



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

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

Tips: 1. By default, the network cable is not included in the package.
2. Please refer to Page 24 for the detailed information about the LAN port.
3. Please refer to Page 25 for the detailed information about the charging functions.

8.4 KVM Workbench

A workbench with 2x2 Hybrid KVM Switch successfully connected is shown as below:

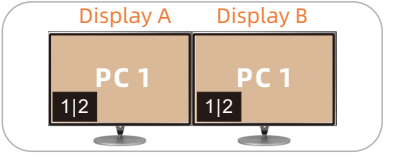
9. Function Description

9.1 Display Mode Description

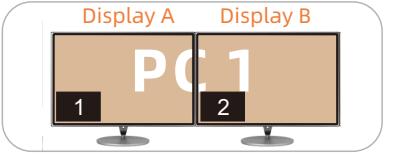
The 2x2 Hybrid KVM Switch support 2 display mode. You can choose to implement 2-screen extended display or duplicate display or display different PCs on 2 monitors.

Display Mode 1: Display the same PC

Duplicate displays

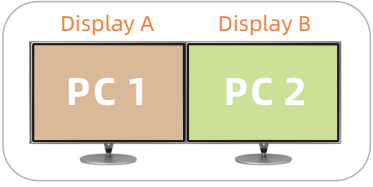


Extend displays



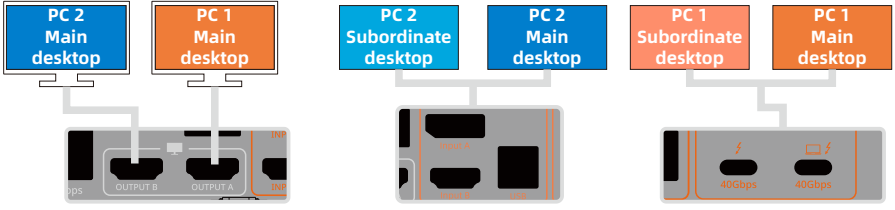
Tips: 1. You can set the duplicate or extend displays in the Display Settings of the current selected PC.
2. If the interface connected to PC1 is not Thunderbolt 3 or higher, you will only get one external display.

Display Mode 2: Display the different PCs

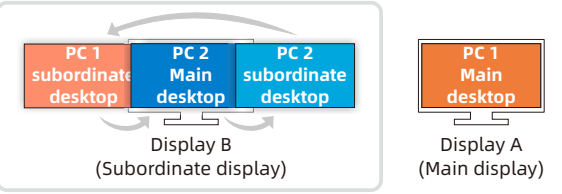


Once the connection is complete, you can switch between images on any of your 2 monitors. When you view one of the monitors as the main monitor, you can use hot key command to switch the images on the subordinate monitor. We will use a schematic diagram below to illustrate this function.

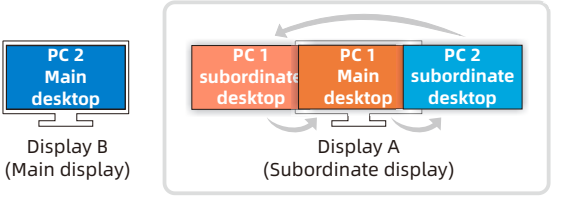
Tips: When different PCs are displayed on different monitors, you can double-click the **Right-[Alt]** on the keyboard connected to the KVM to switch the focus between different PCs.



If you think of Diaplay A as the main display, use the following hot key command to switch images on the Display B:



If you think of Display B as the main display, use the following hot key command to switch images on the Display A:

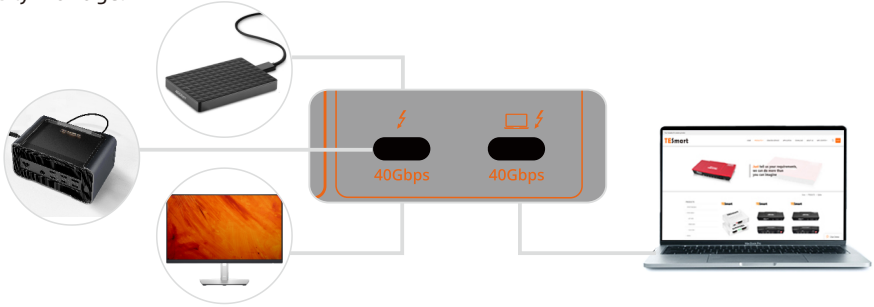


Tips: 1. Under any circumstances, the two monitors will not simultaneously output either the main or subordinate desktop of the same PC.

2. When switching in this mode, the PCs will keep the connections that are not displayed unless the two monitors have different display specifications.

9.2 Expanded Downstream Port

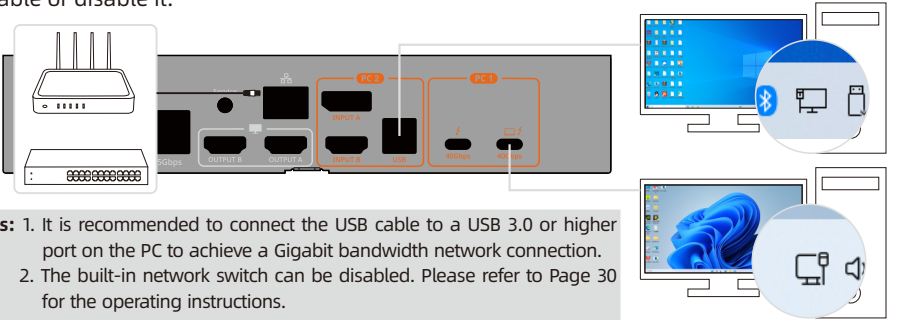
The expanded downstream port provides your PC with an additional USB-C interface, supporting the connection of external hard drives, displays, and other USB-C devices. Whether it's for handling large amounts of data or outputting high-definition video, it can easily manage.



Tips: The 40Gbps transfer rate is a theoretical value; actual performance may vary depending on the host configuration.

9.3 Built-in Network Switch

The 2x2 hybrid 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 computers to a router or network switch for gigabit wired network connection. Full 1000Mbps Ethernet for fast, stable data transfer, more reliable than most wireless connections. This feature has been added with a switch, allowing you to freely choose to enable or disable it.



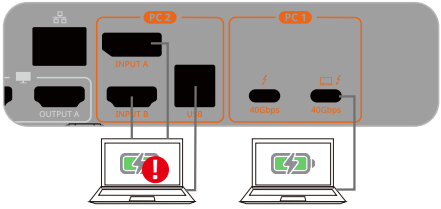
Tips: 1. It is recommended to connect the USB cable to a USB 3.0 or higher port on the PC to achieve a Gigabit bandwidth network connection.
2. The built-in network switch can be disabled. Please refer to Page 30 for the operating instructions.

9.4 Built-in Charging Module

The 2x2 Hybrid 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 port marked "⎕" of the KVM and it will be charged via the PD protocol. Up to 60W power output for faster charging.

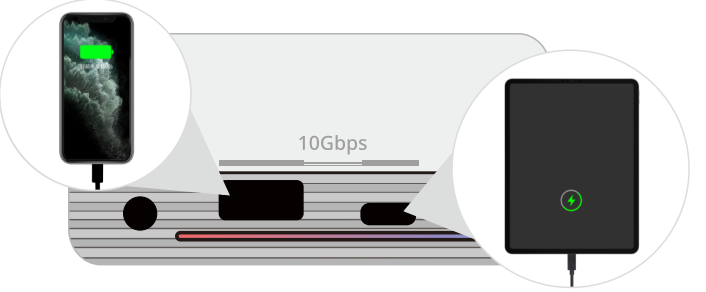
Tips: Computer that connected to the PC2 port cannot be charged.



Tips: The USB-C port on the laptop needs to support the charging protocol to be able to charge.

Tips: 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 ports and it will be charged.



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

9.5 Keyboard and Mouse Emulation Mode

We provide two keyboard and mouse modes: Pass Through Mode and Legacy Emulation Mode. Pass Through mode supports most keyboard and mouse drivers and multifunction keyboards and mice. Legacy Emulation Mode ensures the normal functioning of the keyboard, mouse, and hotkey features.

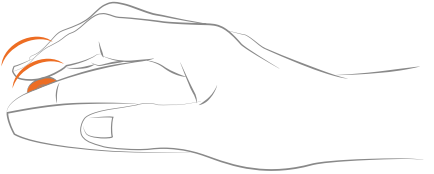
- Typically, we recommend using Passthrough Mode for an optimal user experience, allowing you to:

If you encounter issues with the keyboard and mouse in Passthrough Mode, we recommend switching to Legacy Emulation Mode.

Tips: 1. To toggle between two modes, please refer to Page 33. After toggled, please restart the KVM.
2. In Legacy Emulation Mode, the keyboard and mouse control software will no longer be available.

9.6 Mouse Wheel Switching

Mouse wheel switching method can quickly switch input sources by mouse operation, double-click the mouse wheel to switch to the next input port. Mouse wheel switching mode is off by default. You can use keyboard hotkey command to turn on mouse wheel switching mode. Please refer to Page 34.



10. Operation Method

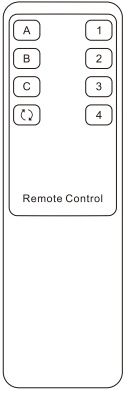
10.1 Front Panel Button Switching Method

The 2x2 Hybrid KVM Switch can switch to any input devices at any time with front panel keypad, IR remote control and keyboard hot keys. You can choose your favorite switching method according to your personal needs and habits.

→ The blue light indicates which PC is currently being displayed on monitors A and B.

→ Press [ ] button to switch between PCs on display mode 1.

10.2 IR Remote Control



A — Switch images on the Display A

B — Switch images on the Display B

1 — Switch both monitor to display PC 1

2 — Switch both monitor to display PC 2

↻ — Cycle through all PCs.

Tips: Unspecified buttons at above are non-functional.

10.3 Keyboard Hot Keys

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

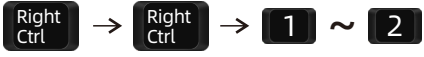
Tips: The keyboard hot keys can only work with external keyboard correctly connected to the keyboard and mouse input port of the KVM.

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]

Select port by port number(i.e. display mode 1):
[Right-Ctrl]→[Right-Ctrl]→[1]~[2]



Think of display A as main display, switch images on display B (i.e. display mode 2):
[Right-Ctrl]→[Right-Ctrl]→[→]

Think of display B as main display, switch images on display A (i.e. display mode 2):
[Right-Ctrl]→[Right-Ctrl]→[←]

Switch KM focus in display mode 2:
[Right-Alt]→[Right-Alt]

Disable/enable follow mode:

Tips: "Follow Mode" refers to whether the audio devices and USB 3.0 devices connected to the front panel will switch synchronously with the keyboard and mouse focus when switching.

[Right-Ctrl] →[Right-Ctrl] →[~]

Tips: The default setting of follow mode is enabled. When you disable it, the buzzer will emit only 1 short beep; when enable it, the buzzer will emit 2 short beeps.

When Follow Mode is disabled, you can use the following hotkeys to switch audio and USB 3.0 channels between PCs:
[Right-Ctrl] →[Right-Ctrl] →[0]

Toggle between keyboard and mouse modes:
[Right-Ctrl] →[Right-Ctrl] →[F2]

Tips: The default keyboard and mouse mode is Pass Through mode. When switching to Legacy Emulation Mode, the buzzer will emit 2 short beeps; when switching to Pass Through Mode, the buzzer will emit only 1 short beep.

Disable/enable fan:

[Right-Ctrl] →[Right-Ctrl] →[F3]

Tips: The fan has 4 adjustable modes, distinguishable by the number of beeps from the buzzer. The default fan mode is 2.

Fan mode 1: The fan is disabled. Adjust to this mode, the buzzer will beep once.

Fan mode 2: The fan operates based on the actual temperature: it automatically turns on when the detected chip temperature exceeds 60℃ and turns off when the temperature drops below 45℃. Adjust to this mode, the buzzer will beep twice.

Fan mode 3: The fan operates at low speed continuously. Adjust to this mode, the buzzer will beep three times.

Fan mode 4: The fan operates at high speed continuously. Adjust to this mode, the buzzer will beep four times.

Disable/enable built-in network card:

[Right-Ctrl] →[Right-Ctrl] →[F4]

Tips: The built-in network card is enabled by default. Enable it will trigger the buzzer to beep twice and disable it will trigger the buzzer to beep once.

Turn on/off mouse wheel switching mode:

[Right-Ctrl] →[Right-Ctrl] →[F6]

Tips: Turning on the mouse wheel switching mode will trigger the buzzer to beep twice and turning it off will trigger the buzzer to beep once.

Disable or enable buzzer sound:

[Right-Ctrl] →[Right-Ctrl] →[F11]

Tips: The default setting of buzzer sound is enabled. Disable buzzer sound will trigger the buzzer to beep once and enable it will trigger the buzzer to beep twice.

Switch lighting modes:

Turn off lighting:

[Right-Ctrl] → [Right-Ctrl] → [L] → [0]

Right Ctrl → Right Ctrl → L → 0

Light effects vary with KVM indicators:

[Right-Ctrl] → [Right-Ctrl] → [L] → [1]

Right Ctrl → Right Ctrl → L → 1

Marquee lighting effect:

[Right-Ctrl] → [Right-Ctrl] → [L] → [2]

Right Ctrl → Right Ctrl → L → 2

Orange breathing light:

[Right-Ctrl] → [Right-Ctrl] → [L] → [3]

Right Ctrl → Right Ctrl → L → 3

11. Change Hot Key Combinations

For your convenience, we have built-in a custom hotkey function. By setting, you can use any key on the keyboard connected to the KVM as the trigger key for the hot key command. The default hotkey trigger key is the **[Right-CTRL]**. The custom hotkey function can be set in the following ways:

Method 1:

→ After powering on the KVM, press and keep holding the [] button on the front panel for 10 seconds until you hear the buzzer is long beeping. When starting to set the trigger key, the buzzer will have a 5 seconds tone. Please press the key you want to use as the hot key trigger key on the keyboard within 5 seconds. After pressing the button, the prompt tone ends and the setting is complete.

Method 2:

→ Press [Right-Ctrl]→[Right-Ctrl]→[F1], then the buzzer will have a 5 seconds tone. Please press the key you want to use as the hot key trigger key on the keyboard within 5 seconds. After pressing the button, the prompt tone ends and the setting is complete.

V003

TESmart

To Enjoy Smart

HDC202 Xtreme 24

Tesla Elec Technology Co.,Ltd
WEEE-Reg.-Nr. DE 66784279