TESmert TESmart

User Manual

2x2 HDMI Dual Monitor KVM Matrix Switch

HKS0202A10

To Enjoy Smart

HKS0202A10

English

English

Preface

It's our great honor that you have chosen the KVM Switch produced by our company, TeslaElec 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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1. Safety Tips and Warnings

Tips: Read the safety tips and warnings for HDMI 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).

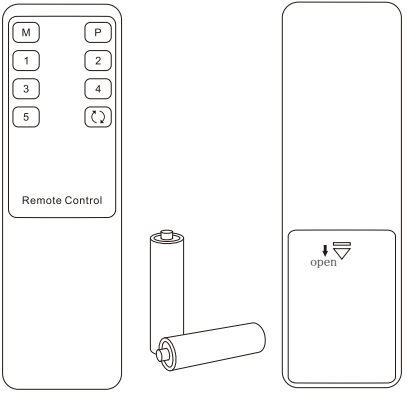
⚠ Do not touch the product and the power cord with wet hands so as to lower the risk of electric shock and damage to the product. Do not let the product get wet or become damp.

⚠ 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,

The 2x2 HDMI Dual Monitor KVM Matrix Switch is an ideal solution for integrating cross-platform computer devices and managing them effectively. It supports a dual-display multimedia workstation, allowing for a 2-screen extended display or duplicate display. You can also display different PCs on 2 monitors, or display 4 different thumbnails display modes. This switch has an EDID emulator on each input port to ensure correct display information, and supports smart EDID management to retain or disconnect the EDID on unselected ports.

With 3 display modes, it meets your different display needs, and free combination switching simplifies usage. The switch supports USB 2.0 devices, USB keyboard, and mouse pass-through mode, greatly improving KM compatibility. It also features an audio integration port for connecting your headset, and supports locking L/R audio and USB 2.0 focus and custom hotkey function.

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@30Hz 4:4:4
- HDMI 1.4 compliant, HDCP 1.4 compliant
- Support 3 display modes, Dual Monitor Mode, Matrix Mode and Thumbnails Display Mode with OSD display
- Support Unix/Windows/ Debian/ Ubuntu/Fedora/ MacOS X/ Raspbian/ Ubuntu for Raspberry Pi and other Linux based systems
- Support for Custom Hotkeys.
- With integrated microphone and L/R audio port and extra USB 2.0 port
- With EDID emulators in each input port, it can keep PCs always having correct display information
- Support Smart EDID Management in Matrix mode, the unselected HDMI input ports can turn on or off emulating existence of the EDID of the display
- Support IR signals, front panel button, and keyboard hot keys to control the KVM to switch input ports
- Support keyboard and mouse pass through to improve mouse and keyboard compatibility
- Support independent L/R Audio and USB 2.0 focus selection

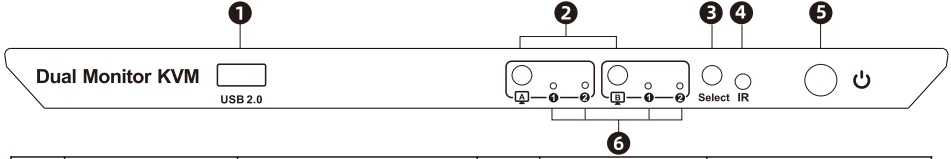
6. Packing List

- 1 *2x2 HDMI Dual Monitor KVM Matrix Switch
- 2 * KVM Cables
- 2 * HDMI Cables
- 1 * IR Remote Control
- 1 * DC 12V 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.

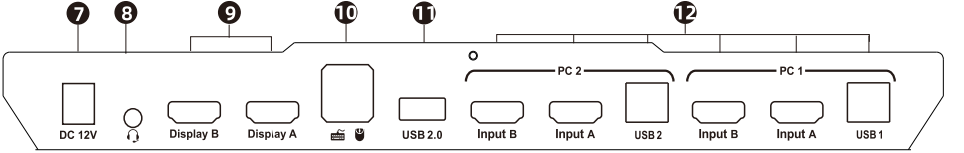
7. Panel Description

7.1 Front Panel Description

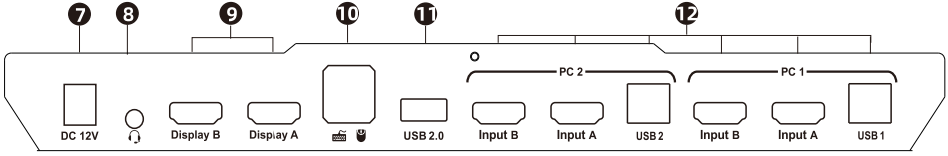


ID	Name	Function	ID	Name	Function
1	USB 2.0 port	Connect to USB 2.0 devices.	4	IR receiver	Receive IR remote signal.
2	Input independent selection button	Switch input ports independently for each display.	5	Power switch	Turn on or off power supply.
3	Input selection button	Select input sources.	6	Input selection status indicators	Display current status, Please refer to Page 22 for the detail.

7.2 Rear Panel Description



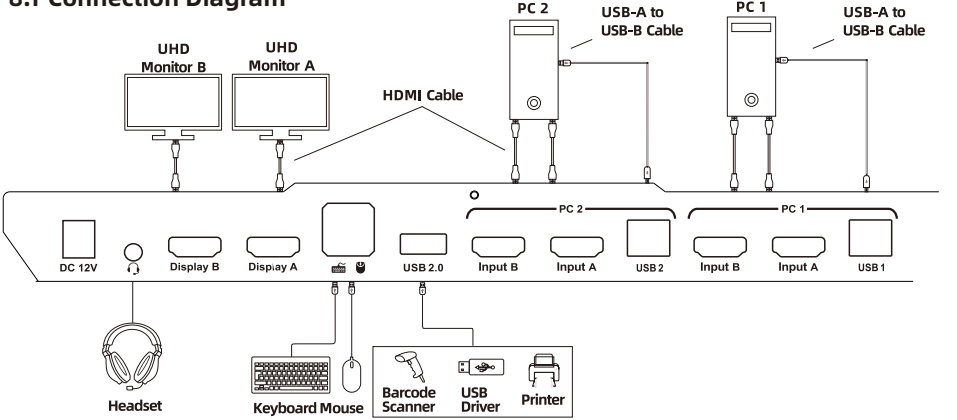
ID	Name	Function
7	DC 12V	12V DC power supply.
8	Audio integration port	Integrated microphone and L/R audio output which can connect such devices like headset.
9	HDMI outputs	Connect to 2 HDMI displays for video output.



ID	Name	Function
10	Keyboard and mouse input	For USB keyboard and mouse input.
11	Standard USB 2.0 port	Connect to USB 2.0 devices.
12	KVM input port group	Each group contains 2 video ports(HDMI on the left) and 1 USB port(USB-B on the right). Connect the ports to corresponding input devieces for signal input.

8. Connection Description

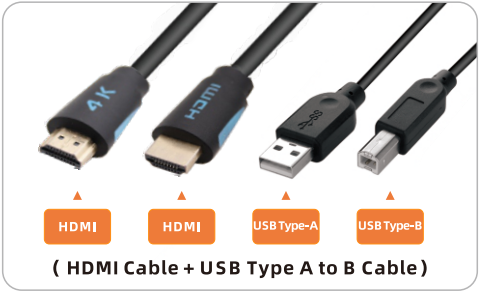
8.1 Connection Diagram



Tips: For the **better** experience, **we** recommend **you** to **connect** both Input A and B to the same PC for each group.

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.

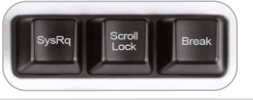


(HDMI Cable + USB Type A to B Cable)

8.3 Connection Steps

1. Connect PC1 and PC2 with 2 KVM cables and 4 HDMI cables, use HDMI end to connect PC1 and PC2 to the corresponding HDMI ports group on the KVM, use USB-A end to connect each PC and USB-B end to connect the KVM.

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



Tips: For the normal service of hotkeys, we recommend that you use a full-key external keyboard with a separate [Scroll Lock] key (as shown above).

3. Connect USB 2.0 devices to KVM's standard USB 2.0 ports.

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

5. Connect external audio device to KVM's integrated microphone and L/R audio out port.

6. Connect the power cable to KVM's DC 12V port and plug it to a power socket.

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

8.4 KVM Workbench

A workbench with 2x2 HDMI Dual Monitor KVM Matrix Switch successfully connected is shown as below:

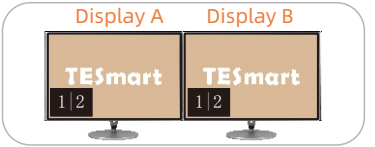
9. Function Description

9.1 Display Mode Description

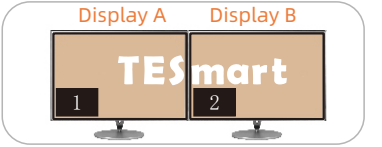
The 2x2 HDMI Dual Monitor KVM Matrix Switch offers 3 display modes, allowing you to choose between Dual Monitor Mode，Matrix Mode or Thumbnails Display Mode.

Display Mode 1: The Dual Monitor Mode

Duplicate displays



Extend displays

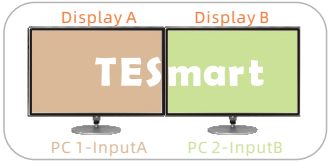


Tips: 1. You can set the duplicate or extend displays in the Display Settings of the current selected PC.
2. Duplication or expansion of two displays is only possible when two video ports of the same PC are connected to Input A and B of a set of input ports at the same time.

Display Mode 2: The Matrix Mode

You can match any display and any input port at will at this mode. Here are 2 examples.

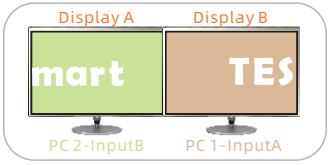
→ 1. Matching Mode (A-A,B-B)



Tips: 1. Please refer to chapter 10 for specific descriptions of how to switch to display mode 2 and the front panel lighting.
2. This mode supports smart EDID management function. please refer to chapter 9.3 for the descriptions.

The selected Input A/B are correspondingly displayed on Display A/B.

→ 2. Crisscross Mode (A-B,B-A)



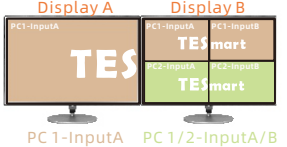
Tips:
3. When different PCs are displayed on different monitors, you can double-click the Right-[Alt] on the keyboard connected to the KVM to switch the focus between different Pcs.

The correspondence of the input and display are intersecting.

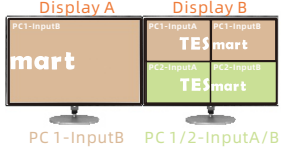
Display Mode 3: The Thumbnails Display Mode

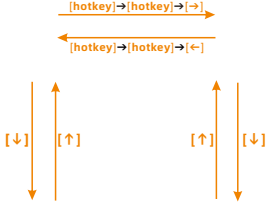
The 2x2 HDMI Dual Monitor KVM Matrix Switch supports 4 Thumbnails Display Modes. you can click the **[hotkey]→[hotkey]→[5]** on the keyboard connected to the KVM to switch to the Thumbnails Display Mode and double-click the **Right-[Alt]** to switch keyboard and mouse focus .

→ Mode 1

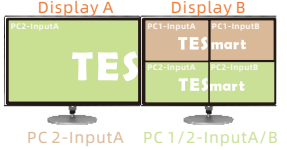


→ Mode 2

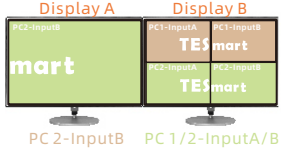




→ Mode 3



→ Mode 4



9.2 Lock L/R Audio and USB 2.0 Focus Function

The 2x2 Dual Monitor KVM Matrix Switch supports locking L/R audio and USB 2.0 focus. After the lock is turned on, the current audio and USB Focus can be maintained and only the screen can be switched when switching. The USB2.0 and Audio Focus are combined to switch.

Buzzer beep once indicates the function is enabled

Buzzer beep twice indicates the function is disabled

Tips: 1. In Display Mode3, when using the hotkeys to switch the focus, there will be an OSD Display indicating the current focus position.

2. The lock status is automatically saved after the KVM is powered down.

3. When the lock function is on, you can press **[hotkey] → [hotkey] → [0]** to switch the audio and USB 2.0 focus back and forth between the 2 Pcs.

9.3 Smart EDID Management

The 2x2 Dual Monitor KVM Matrix Switch supports Smart EDID Management. When each PC is displaying on separate screens , with this function enabled, each computer can recognize both screens to ensure that your opened windows stay in a fixed position. When this function is disabled, each PC only recognizes the EDID of the displayed screen, and the window opened on the unselected screen will return to the displayed screen. Press the **[hotkey] → [hotkey] → [F5]** to turn on/off the Smart EDID Management.

Tips: 1. Smart EDID Management can only be used when each PC is displaying on separate screens, i.e. the Matrix mode, when each computer is displaying on two separate screens. It cannot be used in dual monitor mode or thumbnails display mode.
2. Smart EDID Management is enabled by default.

10. Operation Method

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

10.1 Front Panel Button Switching Method

A button: Select display A to switch between the 4 input ports.
B button: Select display B to switch between the 4 input ports.
Select button: Select display A and B to switch between PC1 and PC2.

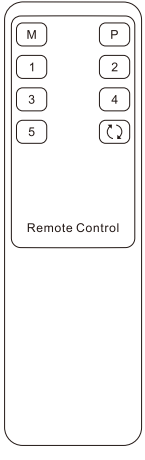
The 2x2 Dual Monitor KVM Matrix Switch has two different colored lights to indicate the status of the different input sources.

→ Switch the input ports by pressing the button **[A]**, **[B]**, and **[Select]** on the front panel of the KVM Switch. For example, press [A] until you see the **1** LED is lit **blue**, That means you have selected PC1 InputA as input for Display A; press **[B]** until you see the **2** LED is lit **green**, that means you have selected PC2 InputB as input for Display B.

Tips:
blue light indicates that the current input is InputA
green light indicates that the current input is InputB

Tips: When the displays are switched individually, the switching order is PC1 InputA - PC1 InputB - PC2 InputA - PC2 InputB, according to the currently displayed port, the port displayed by another display will be skipped.for example, when Display A displays PC1 InputA, the PC1 InputA port displayed by DisplayA will be skipped when DisplayB is switched.

10.2 IR Remote Control



[M] -Turn on/off the Smart EDID Management in Display Mode 2

[P] -Switch the keyboard and mouse focus between PC1 and PC2 in Display Mode 2

[1] -Switch to PC 1

[2] -Switch to PC 2

[3] -Switch to Display Mode 2
(Display A→PC1 Input A, Display B→PC2 Input B)

[4] -Switch to Display Mode 2
(Display A→PC2 Input A, Display B→PC1 Input B)

[5] -Switch to Display Mode 3

Tips: 1. Unspecified buttons at above are non-functional.
2. The operation when using the IR remote control is the same as using the front panel buttons. you can use the IR remote control to switch between different display modes

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. For the use of hot keys, we recommend you use an external keyboard with a separate **[Scroll Lock]** key.

After press **[Scroll Lock]** 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.

Switch to PC1 Dual Monitor Mode:
[Scroll Lock]→[Scroll Lock]→[1]

Switch to PC2 Dual Monitor Mode:
[Scroll Lock]→[Scroll Lock]→[2]

Switch to the Display Mode 2 (i.e. the Matrix Mode):
[Scroll Lock] →[Scroll Lock] →[3]

Tips: Display A displays PC1 Input A port, Display B displays PC2 Input B port.

Switch to the Display Mode 2:
[Scroll Lock] →[Scroll Lock] →[4]

Tips: Display A displays PC2 Input A port, Display B displays PC1 Input B port.

Switch focus in Display Mode 2 and Display Mode 3: **[Right-Alt]→[Right-Alt]**

Enable or disable buzzer sound:
[Scroll Lock] →[Scroll Lock] →[F11]

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

Turn on/off the Smart EDID Management in Display Mode 2(i.e. the Matrix Mode):

[Scroll Lock] →[Scroll Lock] → [F5]

Tips: Please refer to chapter 9.3 for the detailed information about Smart EDID Management.

Switch to Display Mode 3(i.e. the Thumbnails Display Mode):

[Scroll Lock] →[Scroll Lock] → [5]

Tips: Please refer to Page 18 for the detailed information about the Thumbnails Display Mode.

Select Display A to switch between the 4 input ports in Display Mode 3:

[Scroll Lock] →[Scroll Lock] →[↑] / [↓] / [←] /[→]

Tips: If the port displayed in DisplayA is already on the leftmost side in DisplayB, then "Hotkey+←" is invalid, and the other three hotkeys are the same.

Turn on/off the L/R Audio and USB 2.0 Focus Lock Function:

[Scroll Lock] →[Scroll Lock] → [~]

Tips: If the buzzer beeps twice, it means the focus follows keyboard and mouse switching; if it beeps once, it means the focus doesn't follow. Please refer to Chapter 9.2 for information on this function.

Switch Audio and USB 2.0 Focus back and forth between the two PCs:

[Scroll Lock] →[Scroll Lock] → [0]

Tips: This hotkey only works when the L/R Audio and USB Focus Lock Function is turned on.

Custom Hotkeys:

[Scroll Lock] →[Scroll Lock] → [F1]

Tips: Please refer to Chapter 11 for information on Custom Hotkeys.

11. Custom Hotkeys

The 2x2 HDMI Dual Monitor KVM Matrix Switch supports Custom Hotkeys. The default hotkey for KVM is **[Scroll Lock]**, if your **[Scroll Lock]** has other functions defined, you can change any key you want as a hotkey.

Method 1:

→ After the KVM is powered on, press and hold the **[Select]** key on the front panel for 10s until you hear the buzzer sound. Within 5s after the buzzer sounds, press any key you want and the buzzer sound will be extended, then the change is successful, and the hotkey takes effect immediately.

Method 2:

→ Use hotkeys to make changes; press **[Hotkey]** → **[Hotkey]** → **[F1]**, and you will hear a buzzer sound; within 5s after the buzzer sounds, press any key you want, and the buzzer sound will be extended, then the change is successful, and the hotkeys take effect immediately.

Tips: 1. If no new key is pressed within 5s after the beep, the hotkey remains unchanged.
2.In order to prevent hotkey conflicts from affecting normal use, it is recommended to avoid setting F1, F11, Alt, and the numbers 1,2,3,4, as hotkeys, as these keys have their own defined functions in combination with hotkeys.

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
Aigo	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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