Rackmount KVM Switch (CATx)

1U KVM Switch, 1~2 User Console, 8/16/32 Ports
1920x1200 @60Hz (VGA) / 1920x1080 @60Hz (DVI)

(Image illustration based on Model RKS-FHDI-CX232)

RKS-FHDI-XXXXX Series

Model Information

Model	Features
RKS-FHDI-CX108	1U Rackmount KVM Switch (CATx), 1 User Console, 8 Ports
RKS-FHDI-CX116	1U Rackmount KVM Switch (CATx), 1 User Console, 16 Ports
RKS-FHDI-CX216	1U Rackmount KVM Switch (CATx), 2 User Consoles, 16 Ports
RKS-FHDI-CX232	1U Rackmount KVM Switch (CATx), 2 User Consoles, 32 Ports

User Manual

Rev. OCT-RKS-UM01.1

Safety Precautions

To ensure the safe and reliable operation of your Rackmount KVM Switch, please adhere to the following guidelines. Keep this manual for future reference.

Unpacking and Handling

- Carefully unpack the equipment and inspect it for any visible damage during transit. Retain the original packaging materials for future shipping needs.
- Avoid applying excessive force during handling or installation to prevent damage to internal components.

Installation Environment

- Install the equipment in a standard 19-inch rack that is stable and properly secured to prevent tipping or movement.
- Ensure the rack has adequate structural support for the weight of the equipment and any other devices installed.
- Leave sufficient space at the front and rear for proper cable management and ventilation.

Power Supply

- Use only the power supply provided with the equipment. Connecting an incorrect power source can damage the device and pose safety hazards.
- Ensure the power supply meets the voltage and current requirements specified on the device's label.
- Connect the power supply to a properly grounded outlet.

Ventilation and Overheating

- Maintain proper airflow by ensuring that the device's ventilation openings are not blocked. Do not place objects on top of the equipment or stack devices without adequate cooling.
- Avoid installing the device in areas with high ambient temperatures or poor airflow. Use additional cooling equipment if necessary.

Moisture and Liquids

- Keep the equipment dry and away from liquids. Do not place containers of liquid, such as beverages, near the equipment to prevent accidental spills.
- Avoid installing the device in areas prone to high humidity or water exposure.

Cleaning

- Disconnect the device from the power source before cleaning.
- Use a dry, soft cloth to clean the surface of the device. Do not use liquid or aerosol cleaners, which may cause electrical damage.

Grounding

- Proper grounding is critical for safe operation and to prevent electrical hazards. Ensure that the rack system is grounded according to local electrical codes.
- Verify that all devices connected to the KVM switch share a common grounding system.

Cable Management

- Use cable management solutions, such as cable ties or organizers, to route and secure cables neatly.
- Shielded Twisted Pair (STP) cable, such as S/FTP cable, is recommended to provide protection against internal crosstalk, alien crosstalk, EMI, ESD and RFI.
- Avoid placing heavy items on cables or running them through high-traffic areas to prevent tripping hazards or damage.

Fire Safety

- Install the equipment away from flammable materials and direct heat sources.
- Ensure the installation site is equipped with fire suppression systems, such as smoke detectors and fire extinguishers designed for electrical equipment.

Device Compatibility

- Verify that all connected devices, including monitors, keyboards, and mice, are compatible with the KVM switch.
- Use cables and peripherals that meet the recommended specifications to avoid connectivity issues or equipment damage.

Inspections and Maintenance

- Periodically inspect the equipment for signs of damage, such as loose connections, frayed cables, or unusual odors.
- Replace damaged components promptly to ensure continued safe operation.

Dismantling and Repairs

- Do not open or attempt to repair the equipment yourself, as this may expose you to hazardous voltages and void the warranty.
- Contact qualified service personnel or the manufacturer for repairs or technical support.

Training and User Awareness

- Ensure that all personnel using the KVM switch are trained in its proper operation and are aware of safety procedures.
- Provide instructions on safe handling, usage, and emergency response procedures.

By following these precautions, you can maximise the performance and lifespan of your Rackmount KVM Switch while maintaining a safe working environment.

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1. Introduction of RKS-FHDI Series

The **RKS-FHDI Rackmount KVM Switch Series** is designed to provide seamless management and control for up to 32 servers, with the ability to scale up to 1024 servers via 2-level cascading. Ideal for small server room to mid-sized datacenters environments, the switch series supports HD video resolutions up to 1920x1200@60Hz (Analog/VGA) and 1920x1080p@60Hz (Digital/DVI), ensuring sharp, clear visuals for all connected systems. With multi-format video support, including DVI-I (DVI & VGA), HDMI, and DisplayPort, users can connect a wide variety of computers with ease, all over standard CAT5e/6/6a cabling.

The single or dual-user functionality allows control of up to 8, 16, or 32 servers, with intuitive access methods such as USB keyboard hotkeys and the On-Screen Display (OSD) menu. The front panel LEDs provide at-a-glance server status, while each server can be labelled for quick identification and selection. Password security ensures only authorized users can access sensitive computers, providing data protection for enterprise environments.

Designed for flexibility, the switch allows server connections to be extended up to 45 meters (148 feet) from the KVM switch to the computer access dongle, ensuring robust performance even in large setups. Additionally, the system supports audio output through a 3.5mm stereo jack, enhancing the multimedia experience. The 19” rack-mountable unit features a robust metal enclosure, and its firmware upgradeability ensures it remains adaptable as your needs evolve. Whether you are managing a small setup or scaling to large server environments, the KVM Switch Series is the perfect solution for seamless, secure, and efficient server management.

2. Features

- Enables one or two DVI-I Console User to control up to 8, 16 or 32 Ports of Servers/PCs connected over CATx cable with Computer Access Dongles (CADs).
- Supports HD video resolution up to 1920x1200@60Hz (analog/VGA) and 1920x1080@60Hz (digital/DVI) via standard CAT 5e/6/6e cabling.
- Supports multiple video interfaces, including analog VGA, DVI-I (DVI & VGA), HDMI, and DisplayPort.
- Supports switch cascading to 2 levels to expand port capacity.
- USB HID keyboard and mouse support for the console.
- OSD (On-Screen Display) interface and hotkeys for quick and easy access to connected computers, and control and management.
- Front Panel LEDs for instant monitoring of server status and selected channels.

- Servers/computers can be labelled for quick identification and selection.
- Password security ensures authorized access to servers/computers, offering data protection.
- Supports audio output via stereo 3.5mm jack. Audio transmission is only available with the use of HDMI or VGA CADs for the computers.
- Auto-Scan feature enabled for automatic server scanning.
- Firmware upgradeable for future enhancements.
- Compliant with various video computer access dongles (CADs), including VGA/DVI/HDMI/DP, over CATx cable.
- Supports extension of connections up to 45 meters (148 feet) from the KVM switch to the computer access dongle over a CATx cable. The use of high-quality Shielded Twisted Pair (STP) cables is recommended.
- Robust metal enclosure ensures durability.
- 19" rack-mountable design for easy integration into server racks.

Note: Does Not Support CAC and USB Touch Screen

3. Package Contents

The following are included in the package:

- 1 × Rackmount KVM Switch
- 1 × Rackmount Kit
- 1 × DVI to VGA Adapter
- 1 × Power Cord
- 1 × Quick Start Guide

4. Specifications

4.1. Product Specifications

Model Name			CX232	CX216	CX116	CX108
Console Connections			2 x Local	2 x Local	1 x Local	1 x Local
Computer Connections			32	16	16	8
Console Selection			Hotkey and OSD Menu			
Connectors	Console Port	Keyboard	2 x USB Type A Female		1 x USB Type A Female	
		Mouse	2 x USB Type A Female		1 x USB Type A Female	
		Video	2 x DVI-I Female		1 x DVI-I Female	
		Audio	2 x 3.5mm Audio Jack		1 x 3.5mm Audio Jack	
	Computer Port (to Computer Access Dongle)		32 x RJ45 Female	16 x RJ45 Female	16 x RJ45 Female	8 x RJ45 Female
	Firmware Upgrade		1 x Micro-USB Female			
	Reset Button		1 x Tact Switch			
	Power		1 x AC Socket with Light Power Switch			
LEDs	Operation Indication	Online (White)	32 x Color LED	16 x Color LED	16 x Color LED	8 x Color LED
		Selected (Green)				
		Offline				
	Power	Power-On (White)	1 x Color LED Indicator			
Video Resolution			Up to 1920 x 1200 @60Hz (VGA), 1920 x 1080 @60Hz (DVI), DDC2B			
Power	Maximum Input Power Rating		AC Power 100V~240V/ 50~60Hz, 1.5A			
	Power Consumption		DC 12V / 5.42A (65W)			
Environment	Operating Temp.		0 ~ 50°C			
	Storage Temp.		-20°C ~ 60°C			
	Humidity		0 ~ 80% RH, Non-condensing			
Physical	Housing		Metal			
	Weight		2276g	2009g	1993g	1963g
	Dimension (L x W x H)		440 x 150 x 44mm			
MTBF			>300,000 Hours			

4.2. Supported Resolutions

VGA Resolutions (Analog)	DVI Resolutions (Digital)
640 x 480 @60/70/75Hz	640 x 480 @60/70/75Hz
720 x 400 @70Hz	---
720 x 576 @60Hz	---
848 x 480 @60Hz	---
800 x 600 @60/70/75Hz	800 x 600 @60/70/75Hz
1024 x 768 @60/70/75Hz	1024 x 768 @60/70/75Hz
1152 x 864 @60/70/75Hz	1152 x 864 @60/70/75Hz
1280 x 720 @60/70/75Hz	1280 x 720 @60/70/75Hz
---	1280 x 768 @60/75Hz
1280 x 800 @60/70/75Hz	1280 x 800 @60/75Hz
1280 x 960 @60/70/75Hz	1280 x 960 @60Hz
1280 x 1024 @60/70/75Hz	1280 x 1024 @60/75Hz
1360 x 768 @60Hz	1360 x 768 @60Hz
1440 x 900 @60Hz	---
---	1600 x 900 @60Hz
1680 x 1050 @60Hz	1680 x 1050 @60Hz
1920 x 1080 @60Hz	1920 x 1080 @60Hz
1920 x 1200 @60Hz	---

5. Hardware Descriptions

Front and Rear Panel hardware functions will be illustrated using the 32-Port model from the Series; the console and computer ports configuration will vary between models.

5.1. Diagrams of the Various Models

Model	Front and Rear View
RKS-FHDI-CX108	
RKS-FHDI-CX116	
RKS-FHDI-CX216	
RKS-FHDI-CX232	

Figure 1: Front and Rear View of All Models

5.2. Front View

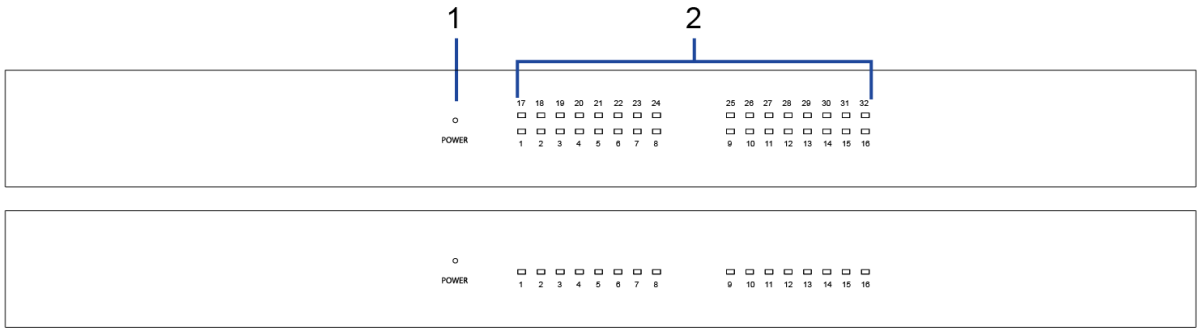


Figure 2: RKS-FHDI-CX232 Front View

No.	Feature	Function
1	Power LED Indicator	LED lights on **white** when the unit is powered up.
2	Channel LED Indicators	LED Indicators light **off** when channels are “inactive”. LED Indicators light on **white** when channels are “active”. LED Indicator(s) light on **green** when channel(s) is/are currently selected.

5.3. Rear View

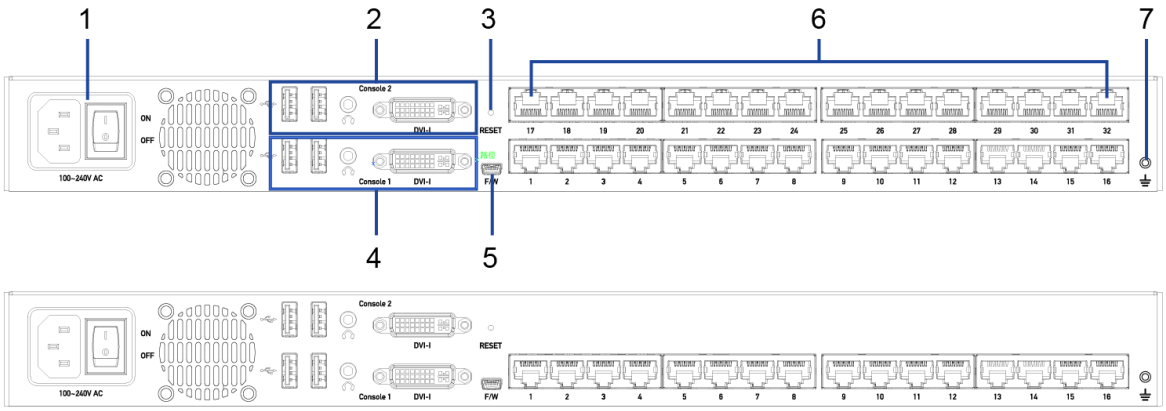


Figure 3: RKS-FHDI-CX232 Rear View

No.	Feature	Function
1	Power Inlet and Power Switch	Power Inlet: Connect the Power Cord. Power Switch: Toggle the power on or off.
2	'Console 2' Connectors	Connect to a/v and data devices. 'Console 2' is available on dual-user models only i.e. CX216 and CX232.
	Two USB-A Ports	Connect a USB keyboard and mouse.
	One Audio Output	Connect to speakers or headphone.
	One DVI-I Connector	Connect to a monitor. If the monitor does not have a DVI connector, an appropriate video converter or adapter is required.
3	Reset Button	Power cycles the KVM Switch. Users will be forced to log out on reset.
4	'Console 1' Connectors	Connect to a/v and data devices. 'Console 1' is available on all models.
	Two USB-A Ports	Connect a USB keyboard and mouse.
	One Audio Output	Connect to speakers or headphone.
	One DVI-I Connector	Connect to a monitor. If the monitor does not have a DVI connector, an appropriate video converter or adapter is required.
5	Firmware Upgrade Port	Connect to a computer to upgrade the KVM Switch firmware.
6	Channel Ports	Connect to Servers/Computers via Computer Access Dongles (CADs). Total number of channels depends on your model.
7	Chassis Ground	Connect the chassis ground to prevent any electrical shock.

6. Rack Mounting the KVM Switch

6.1. Pre-Installation Considerations

Before beginning the installation process, please ensure the following conditions are met:

- **Rack Space:** Ensure adequate rack space is available and meets the switch's dimensions.
- **Power Requirements:** Verify power outlet availability and compatibility with the switch's input specifications.
- **Cooling and Ventilation:** Confirm sufficient airflow around the rack to prevent overheating.
- **Cabling:** Prepare required cables and converters (e.g., Cat5e/6/6a, USB, DVI-DVI, DVI-VGA, DVI-HDMI) based on the switch's connectivity options. Shielded cable such as S/FTP is strongly advised.
- **Compatibility:** Check the compatibility of connected devices (e.g., display resolution) with the KVM switch and dongles.
- **Grounding:** Ensure the rack is properly grounded to avoid electrical hazards.
- **User Access:** Plan user console placement and accessibility for seamless operation.
- **Firmware:** Verify the KVM switch has the latest firmware installed.
- **Installation Tools:** Gather necessary tools (screwdrivers, brackets, screws and cage nuts) for rack mounting.

6.2. Rackmount Procedures

RKS-FHDI switches can be mounted in 1U (1.75", 4.4cm) of vertical space in a standard 19" equipment rack. To rackmount it, use the brackets and screws that come with the package.

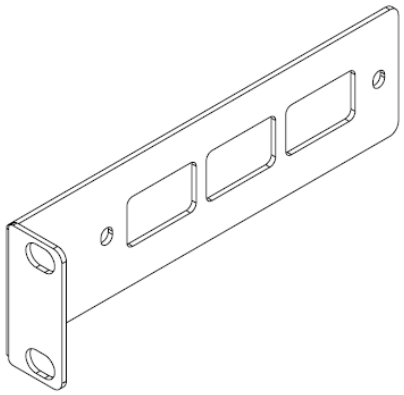


Figure 4: Rackmount Bracket

The brackets have the following dimensions:

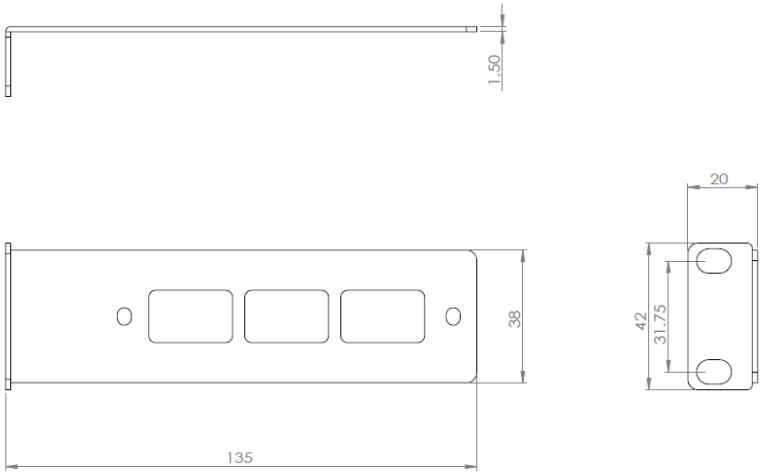


Figure 5: Dimensions of the Rackmount Bracket

Attach and secure the brackets to the switch's chassis with the provided screws and then rack mount the unit to the pillars of the rack, securing it with the rack's screws and cage nuts.

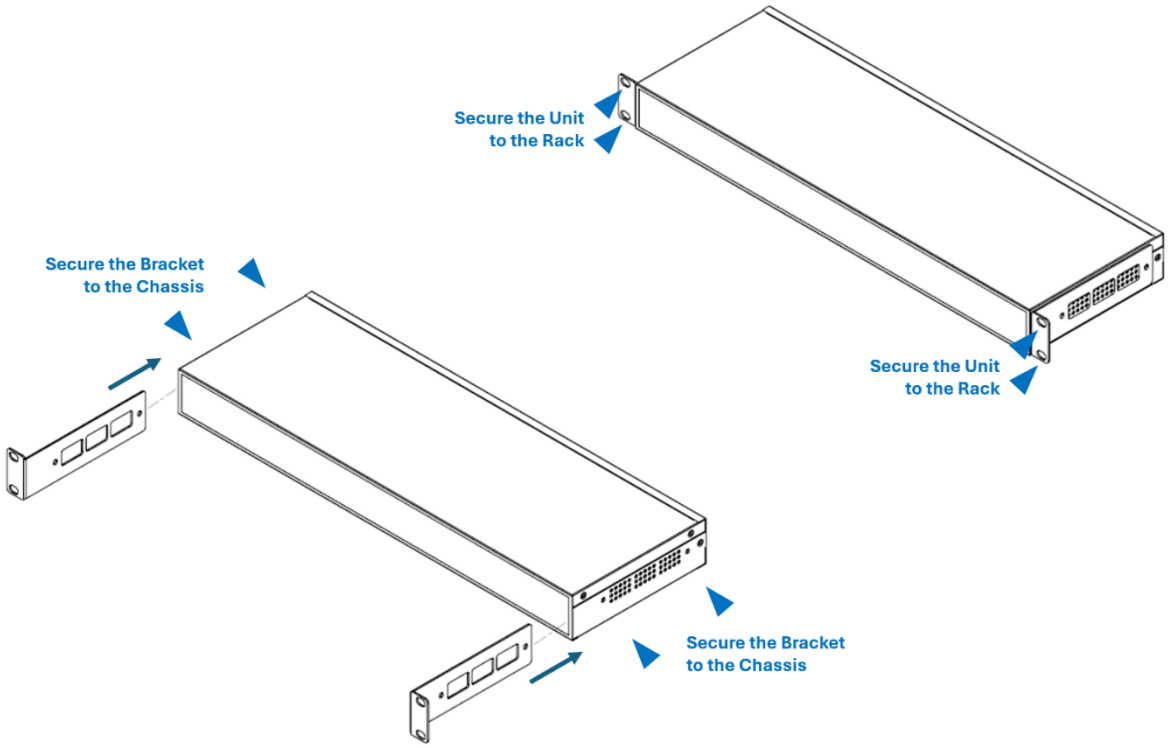


Figure 6: Rack Mounting the KVM Switch

7. Installation of the KVM Switch

7.1. Installation Procedures

Note: Power off the KVM Switch and all equipment (i..e. computers, monitors, etc) before system installation.

You will need the Computer Access Dongle (CAD) to connect the KVM switch to the server/computer. Installation of the KVM Switch will involve the following steps:

1. Select the appropriate Computer Access Dongles for the Servers
2. Connect the Monitor, Keyboard and Mouse or LCD Console Drawer to the KVM Switch.
3. Connect the Servers.

Step 1: Select the Appropriate Computer Access Dongle (CAD) for the Server

Choose the appropriate CAD according to the server's video port and audio requirements. (*Do note the dongles are purchased separately from the KVM Switch. It is not included in the KVM Switch's package.*)

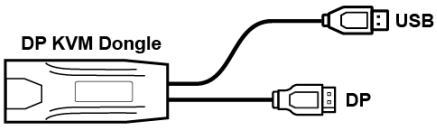
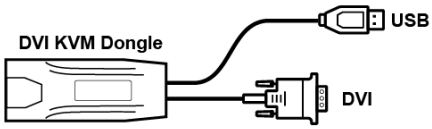
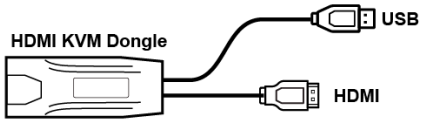
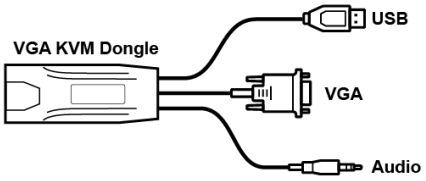
Model	Features
RKS-CAD-DP 	• USB + **DisplayPort** over CATx. • Does not support audio. • DP Cable Length: 16.5cm • USB Type A Cable Length: 40cm
RKS-CAD-DVI 	• USB + **DVI** over CATx. • Does not support audio. • DVI Cable Length: 16.5cm • USB Type A Cable Length: 40cm
RKS-CAD-HDMI 	• USB + **HDMI** over CATx. • Supports digital audio. • HDMI Cable Length: 16.5cm • USB Type A Cable Length: 40cm
RKS-CAD-VGA 	• USB + **VGA** + Audio Jack over CATx • Supports analogue audio. • VGA Cable Length: 16.5cm • 3.5mm Audio Jack Cable Length: 40cm • USB Type A Cable Length: 40cm

Figure 7: Computer Access Dongles

Note:

i. If the dongle you purchased is not compatible with the video port on your computer, the alternative solution is to use a video converter or adapter to connect the dongle.

ii. If audio functionality is required, make sure you turn on the audio feature on the KVM switch in addition to using the audio-capable HDMI or VGA dongles.

Step 2: Connect the Monitor, Keyboard and Mouse or LCD Console Drawer

1. Power off all equipment i.e. KVM switch, monitor, servers/computers and peripherals before system installation.
2. Connect a monitor, keyboard and mouse to the 'Console' connectors on the switch.
   - A DVI-I to VGA adapter is required if connecting to a VGA monitor.
   - Audio speakers are optional.
3. For dual-user model, you can connect the second monitor, keyboard and mouse to 'Console 2' connectors.

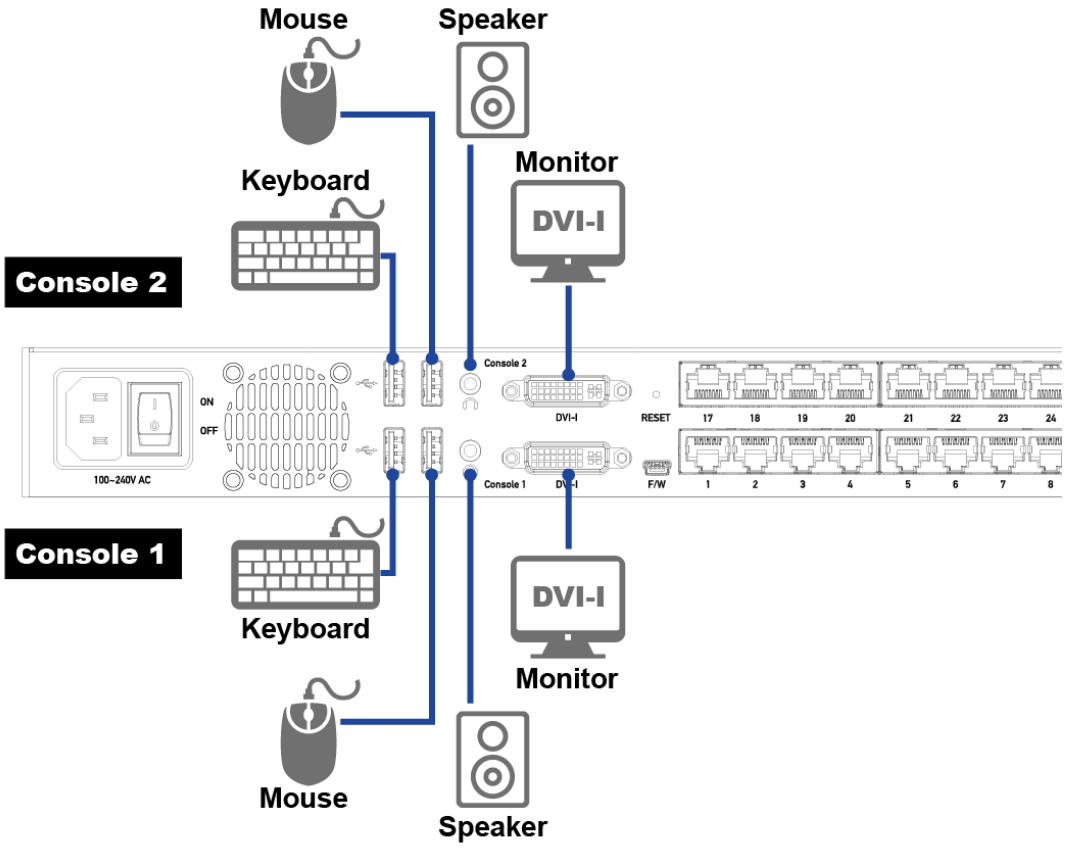


Figure 8: Connecting the 'Local Console' Connectors of the KVM Switch

If you are connecting to an LCD Console Tray, use an appropriate video cable and USB 2.0 Type A Male – Type B Male cable to connect the 'Console' connectors to the LCD Console Tray (video converter/adapter may be required for different video interface).

Step 3: Connect the Servers

i. Connect the video interface of the Computer Access Dongle to the server/computer's video port.
ii. Plug the USB interface of the Computer Access Dongle into one of the server/computer's USB ports.
iii. Optionally, for the VGA CAD, plug the audio interface of the dongle into the server/computer's audio output port.
iv. Connect the CAD to one of the Channel Ports on the KVM switch using standard CAT 5e/6/6a network cable. The maximum length of the CAT cable is 45m (148 ft). Note, direct cable connection of the switch and CAD device is required. Using Shielded Twisted Pair (STP) cable is strongly recommended.
v. Repeat the above steps to connect more servers.
vi. Power on all devices.

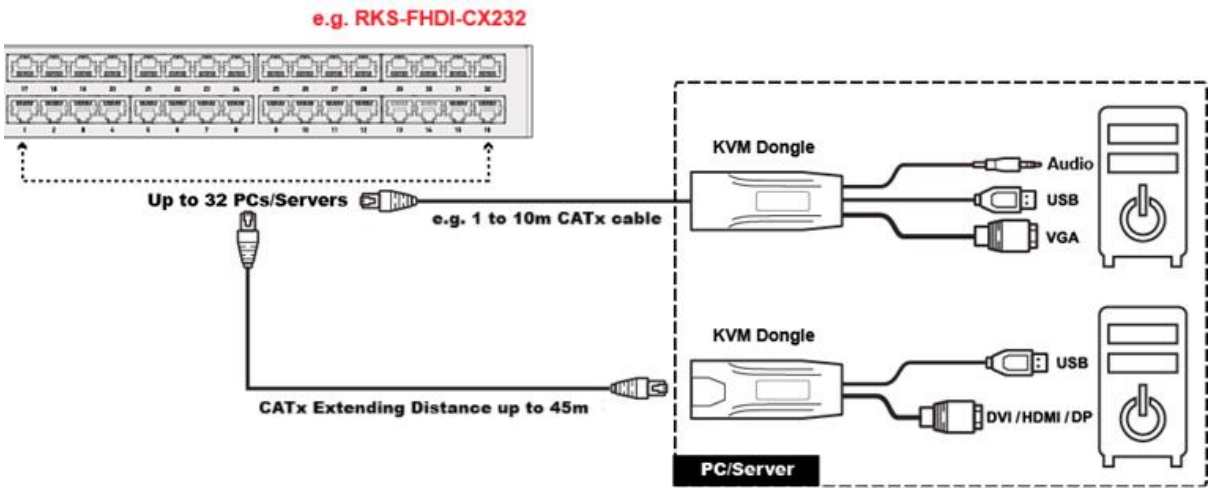


Figure 9: Connecting the Servers to the KVM Switch

7.2. Connection Diagram

The following diagram gives an overview of the connections of the KVM Switch:

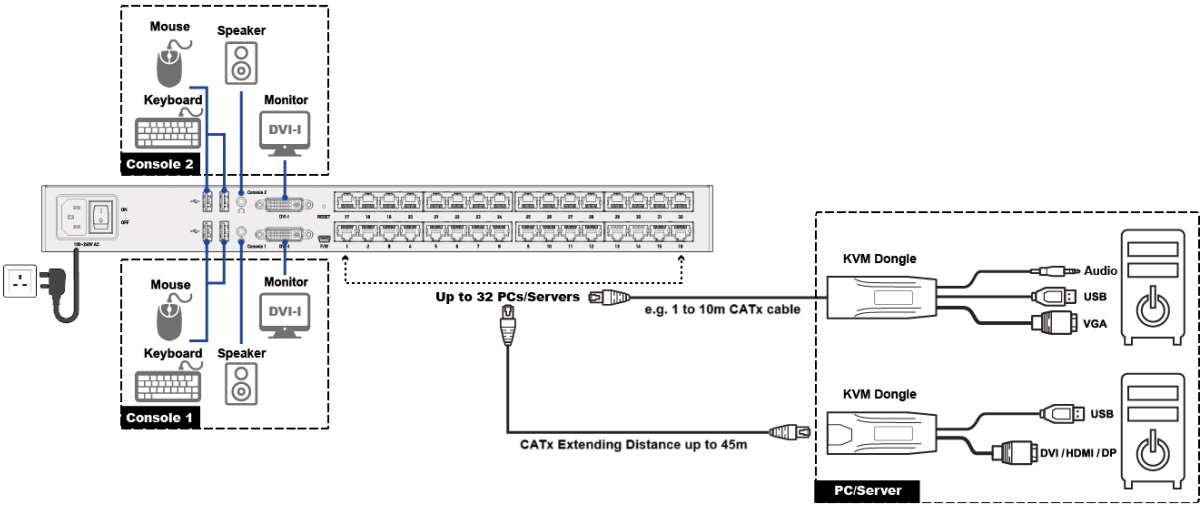


Figure 10: Overview of the KVM Switch Connections

Note:
Shielded Twisted Pair (STP) cable, such as S/FTP cable, is recommended to provide protection against internal crosstalk, alien crosstalk, EMI, ESD and RFI.

8. Hotkey

Hotkey Features:

- Hotkeys are executed exclusively using the keyboard.
- The default hotkey is [**Scroll Lock**] and can be changed in the OSD **SETUP** Menu.
- Hotkey options include:
  - Scroll Lock
  - Caps Lock
  - Num Lock
- Hotkey commands must be completed within 6 seconds, otherwise, they will be aborted if the timeout limit is exceeded.

Hotkey Summary:

#	Hotkey Command	Function	Description
1	Hotkey > Hotkey > Hotkey	Enter OSD	Press the hotkey three times to trigger the OSD. Using the default hotkey "Scroll Lock", you should press: **Scroll Lock > Scroll Lock > Scroll Lock**
2	Hotkey > Hotkey > N + Enter	Access Channel N	Press 'Hotkey' twice, followed by the Channel Number, and press Enter. For example, to access Channel 3, press the following keys: **Scroll Lock > Scroll Lock > 3 > Enter**
3	Hotkey > Hotkey > C > Enter	Adjust a Channel Video	Press the hotkey twice, followed by the letter "C" and finally press Enter. Using the default hotkey "Scroll Lock", you should press: **Scroll Lock > Scroll Lock > C > Enter**
4	Ctrl > Ctrl	Access the next or prior "active" channel	1. Make sure there is no OSD shown onscreen. 2. To select the next "active" channel, press the RIGHT 'Ctrl' key twice. **R-Ctrl > R-Ctrl** 3. To select the prior "active" channel, press the LEFT 'Ctrl' key twice. **L-Ctrl > L-Ctrl**
5	Ctrl + Shift + F10 + Enter	Resetting to Factory Defaults	1. Press **F4** to log out and show the Login Screen. 2. Press **Ctrl + Shift + F10** then press **Enter** to proceed with the factory reset.
6	Ctrl + F1	Modify Keyboard Language Layout	1. Press **F4** to log out and show the Login Screen. 2. Press **Ctrl + F1** to modify the keyboard language layout (EN33, FR08, GR09). 3. Press the language number, then the “ESC” to finish the setting. For example, to choose English Keyboard, press the following keys: **33 > ESC**.

9. On-Screen Display Interface

9.1. Login Screen

After turning on the device, the login screen will be displayed. For the initial login, use the built-in administrator account and password. The built-in administrator and user accounts **cannot** be removed, but their passwords can be changed, and user accounts can be renamed. Only the administrator has the authority to rename user accounts or change passwords.

- **Administrator Account**
  Default Name: admin
  Default Password: admin

- **User Accounts**
  Default Names: user001 through user015
  Default Passwords are NOT available.

Note: Before logging into the OSD, please set your keyboard language layout.

Figure 11: OSD – Keyboard Layouts Menu

Press **Ctrl + F1** to modify the keyboard language layout (33: English US, 08: French, 09: German).

Enter the language number, then press **ESC** to save the setting.

For example, to select the "English US" keyboard layout, press: **3 > 3 > ESC**.

Press the hotkey [**Scroll Lock**] 3 times to display the OSD. You will be prompted to log in.

Figure 12: OSD - LOGIN Screen

No.	Feature	Function
1	Device ID	The Model Name of your device.
2	User Port	The ID Number of your Console. • 01 refers to Console 1. • 02 refers to Console 2, which is only available on dual-user models.
3	User Name (16 characters long) Password (8 characters long)	The fields for entering user credentials. The User Name and Password can consist of any combination of letters and numbers.

9.2. Selection Menu

After a successful login, the **Selection Menu** will be displayed. The Selection Menu provides additional graphical interfaces to navigate, locate and search for the required channel/server.

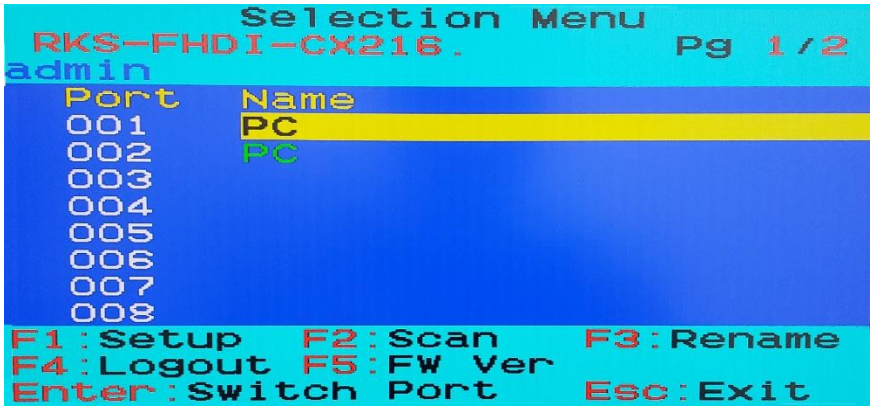


Figure 13: OSD – SELECTION Menu

No.	Feature	Function
1	Model Name	The Model Name of the device.
2	Page Information	The current page number and total pages.
3	Login ID	The current User Name that login to the KVM Switch.
4	Channel Numbers	Channel Numbers of current page.
5	Channel Names	Available Channel Names of current page. The Channel connected with a 2nd tier KVM Switch will be marked with the symbol "+".
6	Operation Keys	Function keys for operating the current OSD menu

Whenever you access a channel, a channel ID is displayed onscreen. By default, it displays for 10 seconds. To extend the display time, modify the time setting in the **ID Display** field under the **SETUP** Menu.

9.3. Rename Channel Names

The default channel names for active channels are 'PC'. You have to assign unique channel names to identify each connected server.

Note: The Channel Name is stored on each connected dongle. Therefore, you can only rename an "active" channel where a "powered" dongle is connected. Besides, the Channel Name will move to different port if you connect the dongle to that particular port.

To change Channel Names:

1. If the OSD is not displayed, press the hotkey 3 times. The default hotkey is 'Scroll Lock.'
2. On the Selection Menu, select an **active channel** and press **F3**. If the desired channel is not shown on the current page, press Page Up or Page Down.
3. The **RENAME** page displays. Type a name up to 14 characters.

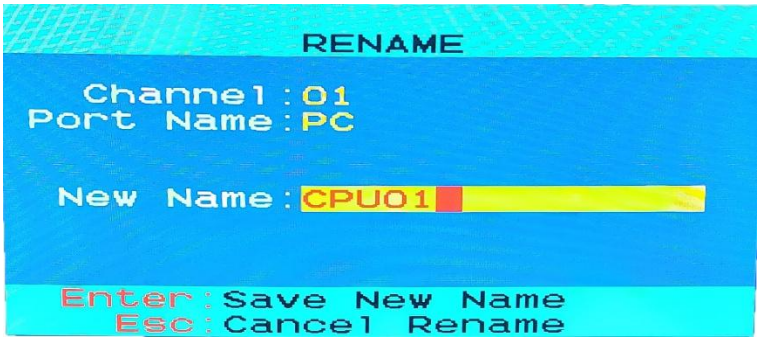


Figure 14: OSD – RENAME Page

4. Press **Enter** to save the new name, or **Esc** to cancel it.
5. Repeat the same steps for additional active channels.

9.4. Setup Menu

Log in as the administrator i.e. admin. On the **Selection Menu**, press **F1** to access the **SETUP** Menu. Only the administrator has permission to change system settings.

Figure 15: OSD – SETUP Menu

Field	Options/Values	Function
Oper Mode (available only in dual-user console model)	PC SHARE, or PRIVATE	The operation mode determines whether two users of a "dual-user" model can access the same channel or not. • **PC SHARE:** Both users can access the same channel simultaneously, but only the user who first presses the keyboard or moves the mouse can control the server. The other user can only view the video. Note that the controlling user loses the server control if remains idle for the period of time defined in the 'Port Timeout' field.

		• **PRIVATE:** When one user is accessing a channel, the other user cannot access the same channel until the first user exits that channel.
Port Timeout (available only in dual-user console model)	5 to 60 seconds	This field determines how long the user can remain idle after accessing any channel. Once the timeout expires, the user loses the server control, and the other user (in PC SHARE Mode), if available, can gain the server control.
Scan Mode	All, or PC ON	This determines which servers will be scanned after activating the channel scan function. • **All:** All channels are scanned. • **PC ON:** Only active channels are scanned.
Scan Time	5 to 255 seconds (at an interval of 5 seconds)	This determines how long each channel's video is displayed during the channel scan.
ID Display	5 to 25 seconds, or ALL	This determines how long each channel's ID appears onscreen after selecting any channel.
Position	Menu, or ID	Select Menu or ID in order to adjust its position on the screen. • **Menu:** Main OSD pages, such as Selection Menu and the Login Screen. • **ID:** Channel ID.
Hotkey	Scroll Lock, Caps Lock, or Num Lock	This determines the hotkey used for: • Triggering the OSD. • Selecting a channel when the OSD is not shown.
Buzzer	ON or OFF	Turn on or off the buzzer of the KVM switch.
Audio	ON or OFF	Turn on or off the Audio Function of the KVM switch. **Note:** If you turn off the audio functionality, no audio is available even though you use an audio-capable CAD.

9.5. Channel Scan

You can turn on the Scan function to have the KVM switch automatically display the video of every channel one by one on the screen. The default is PC On i.e., scan active channels' If the system scans a channel port where a 2nd-tier switch is connected, it will scan all channels of the 2nd-tier switch first before proceeding with the next channels on the base switch.

Before turning on the scan function, make sure the Scan Mode and Scan Time settings meet your needs. On the Selection Menu, press **F2** to activate the scan. Press **any key** on the keyboard to end the channel scan.

9.6. User Configuration

On the **SETUP Menu**, press **F5**. The **User Configuration Menu** will be displayed. The KVM Switch provides one administrator and 15 user built-in accounts.

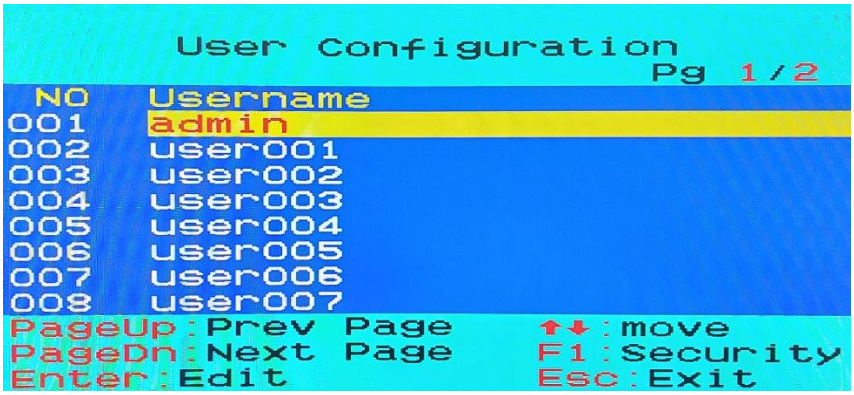


Figure 16: OSD – User Configuration Menu

Note: Operation Key "F1" is not available to setup admin's Port Access Right.

- Press ↓ or ↑ to select the desired user. Press **Page Up** or **Page Down** if the desired user is not shown on the current page.
- Press **Enter**, and that user's password change page displays. Then follow either procedure below.

  To change the administrator's password
  - In the New Password field, type the new password, and press **Enter**. A password comprises up to 8 characters.
  - Re-type the password and press **Enter**. To abort the changes, press **Esc** instead.

Figure 17: OSD – Updating Administrator Password

- After finishing the user accounts changes, press **Esc** to exit the User Configuration Menu.

Important: It is strongly recommended to change the admin password. Then note it down and keep it in a secure place. If you forget the password, contact the local dealer for RMA service.

To rename a User Account and/or change the Password:

6. To rename it, type the new name in the User Name field, and press **Enter**. The name can comprise up to 16 characters. To keep the User Name unchanged, simply press **Enter** without typing any characters.
7. In the New Password field, type the new password, and press **Enter**. A password comprises up to 8 characters.
8. Re-type the password, and press **Enter**. To abort the changes, press **Esc** instead.

Figure 18: OSD – Updating User Account

Important: It is recommended to note down all user names and passwords, and keep the data in a secure location.

Port Access Setup

On the **User Configuration Menu**, press **F1**. The User **Port Access Setup Menu** displays.

Figure 19: OSD - Port Access Setup Page

Use the left/right arrow keys to change the user's access rights for that port.

9.7. Viewing Firmware Version

You can check the versions of the OSD and USB firmware on the KVM Switch. Press **F5** on the **Selection Menu** to display the firmware information. Press **ESC** to exit.

Figure 20: OSD – Firmware Version

9.8. Video Adjustment

You can adjust the brightness and contrast of the channel that is being accessed.

To adjust a Channel's video:

1. Select the desired channel to have its video shown on the screen.
2. Press the hotkey **twice**, then the letter "**C**" and finally press **Enter**. With the default hotkey "Scroll Lock", you should press:

   Scroll Lock > Scroll Lock > C > Enter
3. The following video properties appear onscreen.

Figure 21: OSD – Video Adjustment Menu

Press ↑ or ↓ to select the brightness or contrast.

-  Brightness
-  Contrast

Press ← or → to adjust the value of brightness or contrast (15 is the maximum).

Default values are Brightness '08' and Contrast '00' for all the ports. Increase the brightness if necessary.

Press **Esc** to save changes and exit.

9.9. Resetting to Factory Defaults

You may clear current system settings and have all settings return to factory defaults. These settings include:

- All settings on the SETUP Menu.
- All user accounts on the User Configuration Menu.

Restoring factory defaults does NOT require the administrator permission.

Exception: Channel Names are stored on the dongles, so they are NOT reset to factory defaults which is named 'PC'.

To reset system settings:

1. Press **F4** to log out and show the Login Screen.
2. Press **Ctrl + Shift + F10**. The following message appears.

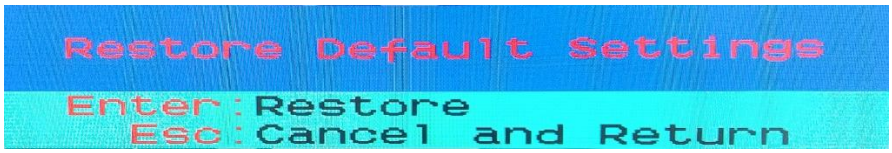


Figure 22: OSD – Restore Default Settings

3. To restore, press **Enter** or to cancel, press **Esc**. Press Enter to proceed with the factory reset. The below message will appear.

Figure 23: OSD – Restoring Message

4. Wait until the Login screen re-appears, indicating the reset is completed.

10. Port Channel Information

The power status of connected KVM Dongles determines whether the port channels are active or inactive. An active channel may change its colour to indicate that it is being accessed by another user.

10.1. Active and Inactive Channels

An active port channel will show it's Channel Name on the OSD, while an inactive port channel does not show any Channel Name on the OSD.

Active Channels:

- A channel is recognized as active when the KVM switch detects that the channel port is connected to a powered KVM Dongle.
- A KVM Dongle is powered as long as it receives power via its USB connector. It remains powered when plugged into a server that is turned ON. However, whether it remains powered when the server is turned OFF depends on the server's design.

Inactive Channels:

- A channel is recognized as inactive when the KVM switch does not detect the presence of a powered KVM Dongle. This may occur in the following scenarios:
  - No KVM Dongle is connected to the channel port.
  - A KVM Dongle is connected to the channel port, but it is unpowered because the server is turned OFF.
  - A KVM Dongle is connected to the channel port, but it is unpowered because its USB connector is not plugged into a server.

10.2. Port Channel Colours

The colour of active channel names on the OSD Selection Menu may change to indicate status or activity.

Colour	Channel Status
Green	This is an active channel that you can access. • In the Private mode, active channels are green as long as the other user is NOT accessing them. • In the PC Share mode, every active channel is green no matter whether the other user is accessing it or not.
Red	This is a channel which you *cannot* access. • In the Private mode, a channel turns red when a user is accessing it.

	If the accessed channel is on a 2nd tier switch, the tiered channel turns red, and you cannot access any channel on that 2nd tier switch. • In the PC Share mode, channels do not turn red. However, in the PC Shared mode, the tiered channel turns red when the other user is accessing a channel on the 2nd tier switch and you cannot access any channel on that 2nd tier switch. Tip: In the PC Shared mode, the tiered channel does not turn red if the other user is only viewing the 2nd tier channel list and has not accessed any 2nd tier channel. At this time, you can select the same 2nd tier switch and even access any 2nd tier channel.
Black	If the Channel Name is Black in colour, it indicates that the user account does not have Port Access right to the channel.

10.3. Releasing a Channel in the PC Share Mode

(*This section applies to dual-user console models only*)

The switch provides two KVM operation modes: Private and PC Share mode. Private mode allows only one user to access a port channel at a time, but PC Share mode allows two users to access the same channel simultaneously.

PC Share mode functions only when the administrator has turned on the PC Share mode under **SETUP Menu Oper Mode** setting.

To share access to servers:

1. Ensure that the PC Share mode is activated or enabled.
2. Now you can share the same channel with the other user. Depending on the channel access sequence, you may or may not be able to control the server.
   - *If you access the channel earlier than the other user — you can control the server, and the other user can only view the video.*
   - *If you access the channel later than the other user — the other user can control the computer, and you can only view the video.*

To release the server control:

If you are the controlling user, you can release the server control by doing one of these:

- Exit from the current channel by selecting another channel or logging out.
- Both of you and the other user who accessed the same channel stop using the keyboard and mouse for 5 seconds (**Port Timeout** setting).

After the server control is released, any user who first presses any key or moves the mouse gains the server control.

11. Grounding and Cabling Tips

If the KVM switch and connected computers do not share a common chassis ground, or if there are discrepancies in their power ground loops, the video output may experience malfunctions, exhibiting issues such as flickering, blurring, or interference.

To resolve these issues, consider the following solutions:

1. Use Shielded Twisted Pair (STP) cables to connect the KVM switch and KVM dongles.
2. Ensure the KVM switch and connected computers share a common ground.

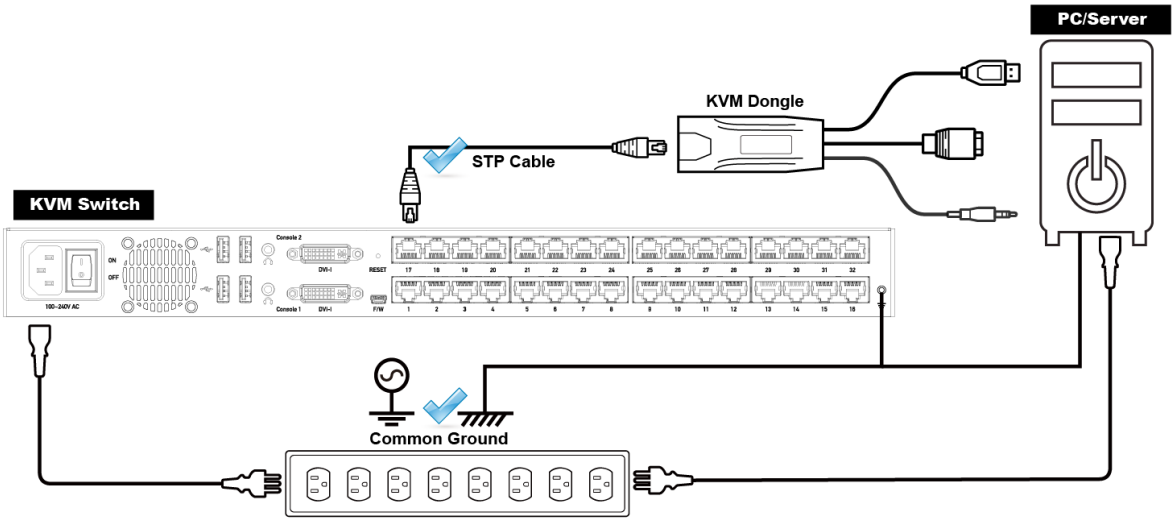


Figure 24: Grounding and Cabling Tips

Advisory Note: When implementing the KVM switch, it is crucial to consider noise and interference, as these devices are highly susceptible to signal degradation from crosstalk, electromagnetic and radio frequency interference (EMI/RFI). To ensure optimal performance and signal integrity, always use properly grounded power sources and ensure that all connected equipment shares a common ground to prevent potential grounding loops. Additionally, we strongly recommend using shielded twisted pair (STP) cables e.g., S/FTP and SSTP for all connections to minimize crosstalk and external interference and enhance signal stability. Proper cable management, avoiding high-power electrical lines, and using ferrite cores where necessary can further help maintain reliable operation.

FCC Statement

This device generates and uses radio frequency and may cause interference to radio and television reception if not installed and used properly. This has been tested and found to comply with the limits of a Class B computing device in accordance with the specifications in Part 15 of the FCC Rules. These specifications are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by plugging the device in and out, the user can try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the device and receiver.
- Connect the computer into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CE / FCC

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