Rackmount KVM-over-IP Switch 1 Local / 1 Remote Access

(8 Port /16 Port/32 Port)





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1.Description

1.1 Brief Introduction

The KVM - over - IP (Hereinafter refers to IP KVM) redirects the local keyboard, mouse and video data to a remote administration console. It allows you to control one or many computers locally at the server site or remotely via the Internet using a standard browser. You can securely gain BIOS level access to systems for maintenance, support, or failure recovery over the Internet.

It is easy and fast to install the IP KVM, you just need to connect corresponding cables to the right ports of KVM and its module without software configuration. Connect computers with compact RJ-45 connectors and Cat 5e/6/7 cable, transmitting distance is up to 100M.

1.2 Features

Hardware Features

- Rack-mountable in 1U system rack
- Dual power supply

Local Console

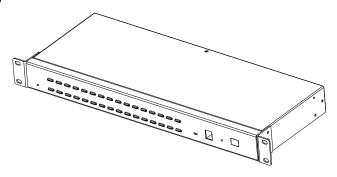
- Control up to 8 / 16 / 32 computers
- Support 1 local user and 1 remote user, port share mode allows local and remote users to gain access to a server simultaneously
- Easy-to-use switching by browser-based UI interface, hotkeys and pushbuttons
- Support servers with VGA/DVI/HDMI port
- Multiplatform client support (Windows, Linux, Unix, Mac, Solaris (Sun), Redhat, Ubuntu
- Local Console, Browser, and AP GUIs offer a unified Multilanguage interface
- Support mouse synchronization mode-automatically synchronizes the local and remote mouse movements
- Video synchronization with local console EDID information for local console display can be stored in the host module for video resolution optimization
- Keyboard and mouse emulation to ensure the normal booting
- Auto scan feature for monitoring user-selected computer
- Hot pluggable--add or remove computers without having to power down the switch

Remote Console

- Adaptive 10 / 100 / 1000 Mbps network
- WEB browser-based remote management
- BIOS-level access
- Video quality and video tolerance can be adjusted to optimize data transfer speed, data transfer speed is up to 30 FPS
- Full screen or scalable video display
- Remote users and local users can control the same server/computer synchronously
- Support AES / DES / 3DES encryption
- Support audit function-allows the administrator to audit the device through the system log and operation log
- Exit Macros support
- Configurable user and group permissions for server access and control
- Message Board for communication among remote users
- Support strong password
- Support firmware upgrade

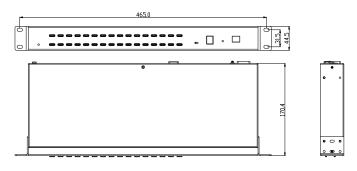
1.3 Appearance

Front View



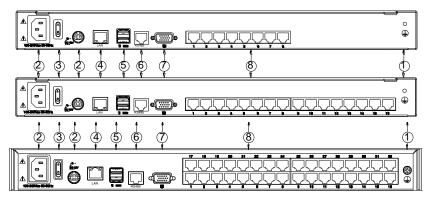
1-1 front view

Structure and Size



1-1.2

Rear view



1-1.3

No.	Explanation	
1	Ground connecting screw	
2	Power input (AC or DC)	
3	Power Switch	
4	LAN Port	
5	USB Port	
6	RS485 Port	
7	Monitor Port	
8	PC connecting port	

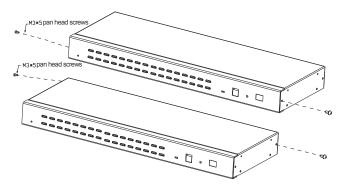
2. Hardware Installation

2.1 Rack Mounting

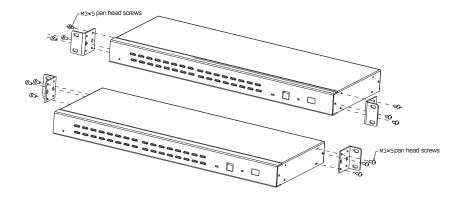
The KVM switch will be installed in the front or rear rack cabinet. Make sure all the connecting computers as well as external device are shut down.

Installation instruction:

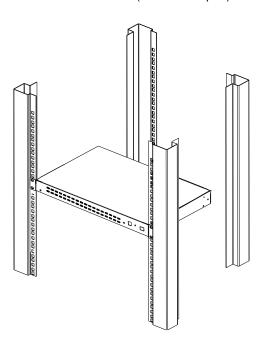
1) Remove the front or rear screw



2) Screw the bracket to the front or rear part of the KVM switch



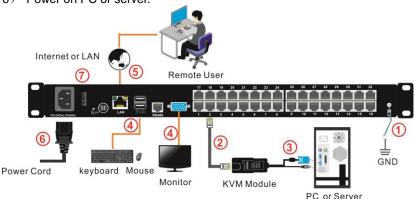
3) Screw the KVM device to the rack cabinet (front or rear part)



2.2 KVM Installation Diagram Installation Steps:

- 1) Make sure the IP KVM has been connected to the ground. ①
- 2) Connect PC or server to KVM with KVM Module and CAT5 cable according to number(2) and (3) in below diagram.
- 3) Connect the local console (keyboard, monitor and mouse) to the console port (see number @ in below diagram).
- 4) Connect IP KVM's LAN port to the Internet (see number ⑤ in below diagram).
- 5) Connect 220V AC power(see number⑥ in below diagram), then turn on power switch ⑦ and the KVM start auto-checking and make "beep" sound.





2.3 Installation diagram

2.3 Opening the KVM

 The KVM makes two "beep" sounds after power on, the orange light keeps flashing and an UI window appears for you to input user name and password.



User Name:	admin
Password:	admin

3. LED Operating

3.1 Operating the Buttons



Figure:3-3.1 32Port

No.	Name	Functions	
1	Port Selection	Press this button to choose the server connected to the corresponding port and the LED displays the pressed button number.	
2	LEDs	The port indicator is built into the port selector switch. The online indicator (green) indicates that the server on the corresponding end is already connected to KVM and Power On. The selected indicator (orange) indicates that the server of the corresponding port is working.	
3	KVM Reset	Reset the KVM	
4	Firmware Upgrade	Upgrade the firmware	
5	Software Upgrade	Upgrade the software	
6	Power Indicator	KVM Power Status	
7	Station ID	The current port number is displayed. When there is a cascade lower level, the number of BANK will be displayed.	
	Brightness - Ö-	Press 【3】 for three seconds enters brightness adjusting mode. 33 are flashing on the LED tube. Then press 【5】, 【6】 to adjust. Press 【3】 exits or waits for five seconds and it will auto-exit.	
8	Definition	Press 【4】 for three seconds enters definition adjusting mode. 44 are flashing on the LED tube. Then press 【5】, 【6】 to adjust. Press 【4】 exits or waits for five seconds and it will auto-exit	
	Initialize D 🔅	Press [6] for three seconds will initialize the brightness and definition of each port.	

3.3 Key combination function

If you want to set other hotkeys to pop up the UI interface or key combination switch, set up via the local console, [System Settings] > [Device info]

.For details, see Device Information (Page: 21)

Pop up the UI interface	Double click 【L_Ctrl】 Double click 【L_Alt】 Double click 【Scroll Lock 】 Double click 【Caps Lock】
Hot key	[L_Alt] + [L_Ctrl] [L_Win] + [L_Ctrl] [L_Alt] + [L_Win]

Hotkey commands are as follows:

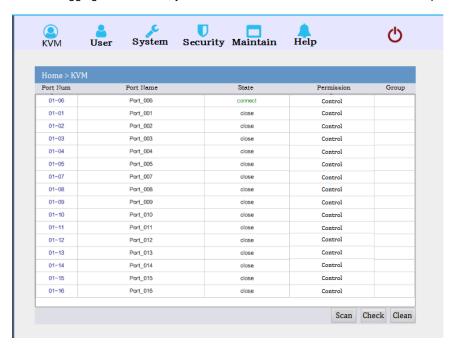
Hot key + the corresponding function key

Function	Operating	Function description
	+Number	Skip ports from 1~16
Port switch	+ 【↑】/【←】	Skip to previous port
	+ 【↓】/【→】	Skip to next port
Drightness	+ [+]	+
Brightness	+ [-]	-
deficition.	+ [>]	-
definition	+ [<]	-
Reset Video + [R]		Reset the video
Lock KVM	+ [L]	Lock KVM and a user login window appears

4. UI interface Operating

login UI control menu User Name: admin Password: admin

After logging in the device, you can see the connection status of the device port.

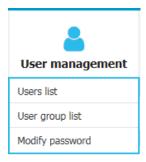


In the port list,

- 1. Click the "Connect" to enter the host screen;
- In the host screen, press the [L_Ctrl] key on the keyboard twice. Return to the UI interface.

4.1 User

User management mainly set up for adding, deleting and modifying user& user group, user password modification, user group permissions and so on. If the user do not have user management authority, the user cannot access to user management interface. The user in this section is who have the user management authority.



User List

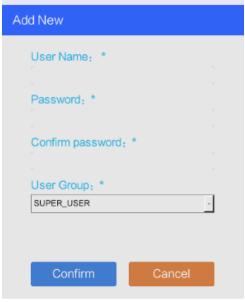


User list interface: list all registered users, you can see more by page turning

User name or full user name search
 Input user name, it shows related users which make it convenient when you have a large number of users

Add user

Click 【add】 button, the window below appears:



In this window, "*" is required content

- 1) User name: user name can only be low case letter, number and " "
- 2) Enter password: without strong password protection, the password can only composed of 1-16 letters, numbers or special characters(-@.\$! _); with strong password protection, the password should be filled in according to the rules of strong password protection. More details please check "security management—>security setting—>strong password"
- 3) User group: Select the corresponding user group

User group list



User group list interface: List all registered users, you can see more by page turning

User group name search

Input user group name, it shows related user groups which make it convenient when you have a large number of users

Add user groupClick [add] button, the window below appears



- 1) User group name: it contains only low case letter, number and " "
- 2) Authority: mainly refers to management authority and operation authority, click show more, authority menu appears(shown in picture above), click show less, authority menu disappears
 - Port Access: Authority to access KVM, and control target server
 - ♦ User Management: user management authority
 - ♦ Device Setting: KVM device management authority
 - Security Management: security management authority
 - ♦ System Maintenance: system maintenance authority
 - 3) Port authority: set up access and operating authority for each port

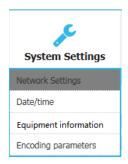
Change password
Change the User login password.

Home > User Management > Modif	y Password
Original Password : *	
New Password : *	
Confirm password : *	
Confirm	

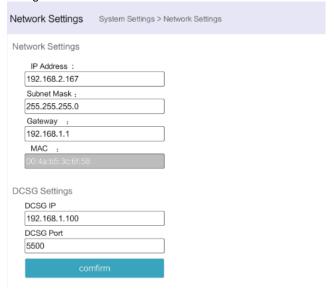
In this window, "*" is required content

- 1) User name: it contains only low case letter, number and " "
- 2) Enter password: without strong password protection, the password can only composed of 1-16 letters, numbers or special characters(-@.\$! _); with strong password protection, the password should be filled in according to the rules of strong password protection. More details please check "security management—>security setting—>strong password"
- 3) User group: Select the corresponding user group

4.2 System



Network settings



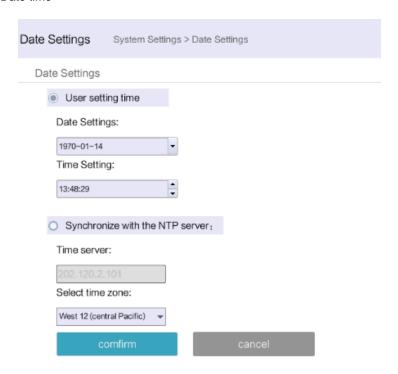
I P v 4 address setting:

- ♦ I Paddress: preset IP address
- Subnet mask: Generally, it should be consistent with other devices in the network.
- Default gateway: Generally, it should be consistent with other devices in the network.
- ♦ MAC address: physical address
- DCSG IP: the IP address should be the same with the Authentication Server

IP address

 $\ensuremath{\diamondsuit}$ DCSG Port: the Port should be the same with the Authentication Server Port.

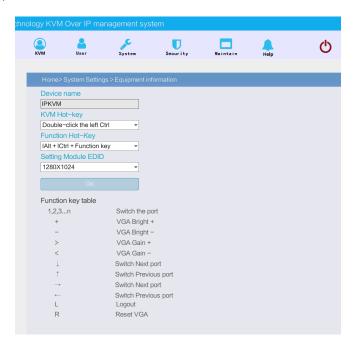
Date time



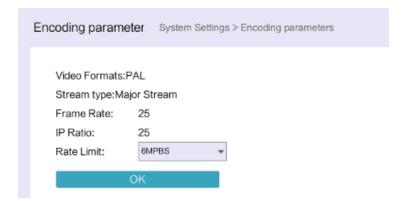
System time setting:

- Customized time: manual setting
- Synchronize with the NTP server: the system automatically updates the time according to the time

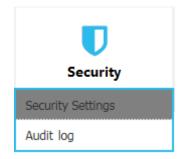
Equipment information



Encoding parameters



4.3 Security



Security Settings



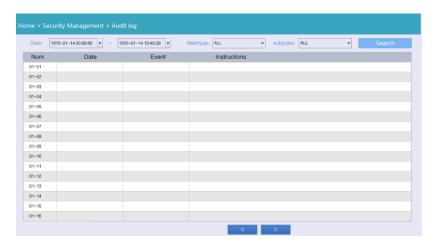
- Login restriction: user name login restriction
 - Single sign on restriction: if one user name is logged in, it can no longer log in with this user name, if it is selected, you can log in with the user name
 - Enable passwords expiration: current password use days ranges from 1-365 days, if it is selected, the default is 50 days
 - Free user log off: If user do not have operations after logging in a set time, the user will be logged off automatically
- Login lock
 - ♦ Disable Lock: when it is selected, login lock will be canceled
 - ♦ Account lock: set trying number of times for login attempts failed
 - Timed lock: set the account lock time when account login failed attempts are over the setting number of times
- Strong password
 - Enable strong password: when it is selected, the original password will be forced to be changed
 - Password history depth: new password cannot be the same as the latest 3 default passwords, this number can be changed, it ranges from 1-10
 - Strong password length: From 1 bit to16 bits.

Encryption mode

DES AES128

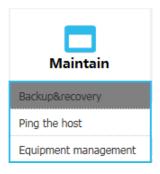
- ♦ Encryption mode is applied to KVM and virtual media: applied when it is selected

Audit log



4.4 Maintain

Provide system maintenance tools such as test tools, data backup and restart



Backup& Restore

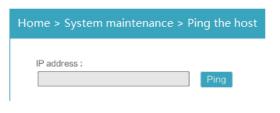


Backup: backup current system settings **Restore:** restore the last backup of system

Factory reset: Restore to factory state (KVM must be restarted to take

effect)





Update



5.Remote control

5.1 Configure the target server

The KVM target server is the server that connected to the IP KVM Switch. Before install and use the IP KVM Switch, we need to configure the target server first. Please refer to below configuration instructions:

- The IP KVM switch supports below two mouse mode:
 - Absolute mouse mode
 - Relative mouse
 - Intelligent mouse mode

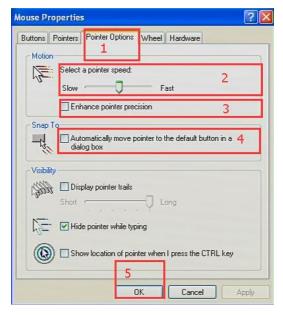
Mouse configuration is different for different operating systems; please refer to below detail instructions for mouse configuration.

 Mouse and display configuration on Windows server 2003 and above version, Windows XP and above version

Operating systems: Windows server 2003, Windows server 2005, Windows server 2008, Windows server 2012; Windows XP, Windows7, Windows8, Windows10

Set Mouse Precision

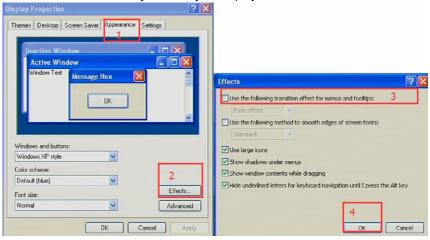
Start—>Control Panel—> [Hardware]—>Mouse



Please follow the steps above to finish the setting.

Set up the display of the target server under Windows XP, Windows 2003, Windows 2008

Start—>Control Panel—> [Hardware]—>Display



Please follow the steps above to finish the setting.

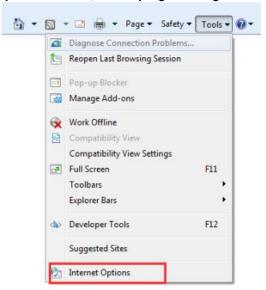
◆ Configure the mouse under Linux (ubuntu 10)

Input "xset m 1 1" in the Linux command line terminal and press Enter to finish the mouse setting, as shown below.

```
File Edit View Search Terminal Help
kinan@ubuntu:~$ xset m 1 1
kinan@ubuntu:~$
```

5.2 Remote WEB interface settings

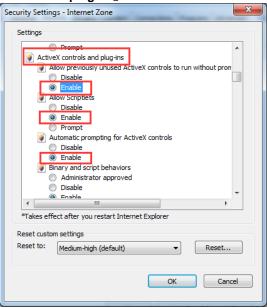
Install and open IE browser, click top-right settings→ 【Internet Options】

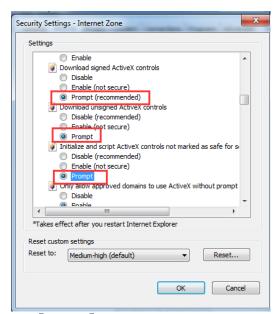


Click 【Security】 → 【Custom Level】

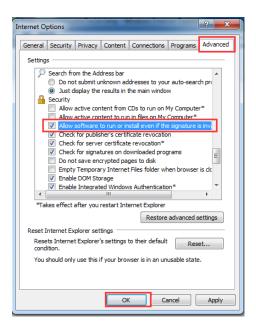


[ActiveX controls and plugins]





Click 【Advanced】, find 【Allow software to run or install even if the signature is invalid】 and select it.

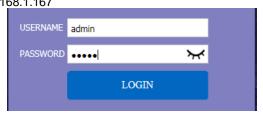


5.3 Log in

Default Items	Default Value
User name	admin
Password	admin
IP address	192.168.1.167

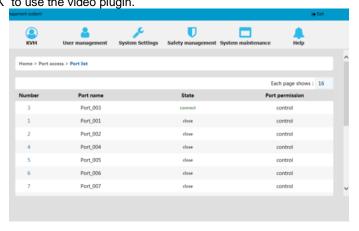
Notice: For security, please change the password after the first login Differentiating between capital and lowercase letters.

After connecting the device, open the Internet explorer web browser: http:// 192.168.1.167



User Name: admin Password: admin

After logging in for the first time, a prompt for loading the ActiveX will appear below the browser. Clicking "Allow" will bring up the Download Video Plugin dialog box. Click "OK" to use the video plugin.

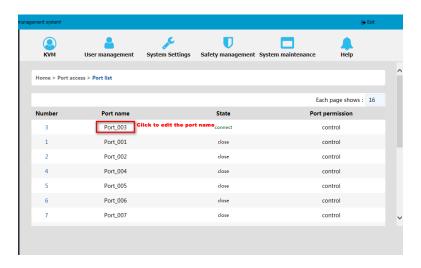


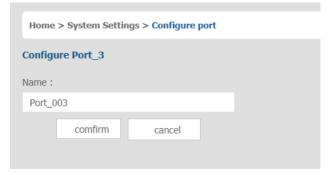
Access status of the KVM ports, three connection status:

1.busy, 2. Connect, 3. close

- "Connect" shows the target KVM is connected to the KVM port; users can access to the target anytime.
- "close" shows that the KVM is not connected to the KVM adapter or the target server, or the target server is not boot up.
- ♦ "busy" shows that port is access by local or remote users.

Edit Port Name:





Video Control Interface Menu

















(Hide or Show Toolbar)

Setting Option

[Send Ctrl+Alt+Del]

[Mouse Synchronization]

[Single Mouse]

[Adaptive Window]

Source Video params

[Full Screen]



1) Hide or Show Toolbar

When the video window starts, the toolbar is always displayed by default. Click the icon, the toolbar will automatically hide. When the mouse move out (into) from the toolbar, it hides shows).

2) Setting Options



2.1 Keyboard & Mouse Options When user has the authority (chart 2-1)

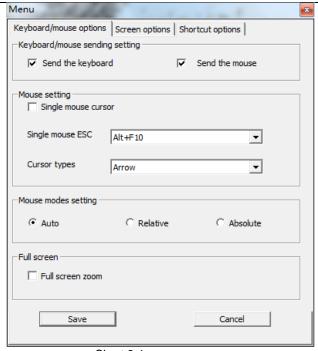


Chart 2-1

Keyboard/mouse sending setting

- Send the keyboard: keyboard data can be sent to the target server through the video window so that it can control the target server's keyboard.
- Send the mouse: mouse data can be sent to the target server through the video window so that it can control the target server's mouse.

Mouse Setting

- Single mouse cursor: when single mouse chosen, target server's mouse will show and remote user's mouse will hide
- Single mouse ESC: press the keyboard "Alt + F10" exit the single mouse mode.
- Cursor types: it can set remote user's mouse cursor type in double mouse mode

Mouse Mode Setting:

- Relative mode: Relative mode is compatible with almost all the operating systems, the factory default mode is relative mode.
- Absolute mode: The absolute mode is not compatible with LINUX operating system.

Full Screen Setting

■ Full Screen Zoom: If the "Full Screen Zoom" is disabled, the video will be displayed in the remote full screen; If the "Full Screen Zoom" is enabled and the target server's resolution is different from the remote user computer's resolution (the resolution of the general target server is less than the resolution of the remote user computer), the video plug-in will display the screen in the middle of the screen according to the resolution of the target server.

When users only have authority to view, remote users can only view the video window and cannot control it, as shown in Chart 2-2.

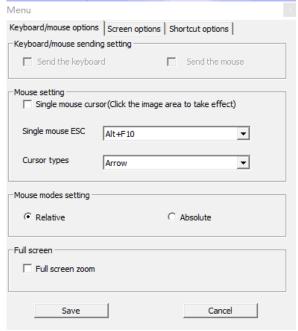


Chart 2-2

2.2 Display option

Display option dialogue shows screen parameters and screen information, as shown in 2-3

- Frame Parameter
- Automatic calibration: The video window will automatically adjust the screen parameters of the target server to the default best effect.
- Contrast, brightness, hue and saturation: if "automatic calibration" is disabled, users can customized screen parameters of target server.
- Frame information
- Resolution: it shows the resolution of the target server. When the target server's platform is win10, it shows the resolution of video

- IP address: KVM switch's IP address
- Refresh Rate: video refresh rate
- Port number: video port number
- Manual calibration resolution: when the resolution of the target server is not consistent with the resolution of the video window, it can manually calibrate the resolution after calibration
- Target server resolution: resolution selection of manual calibration
- Target server's picture zooming: Under the win10 system, if the resolution is not the best resolution, the win10 system will zoom the video screen, and the video window cannot automatically identify whether the video source picture is zooming or not, then the user need to select the option by its own.

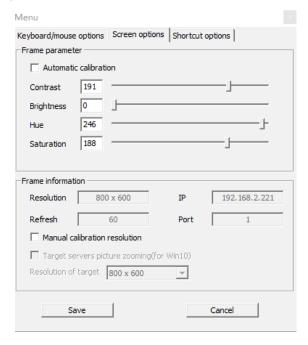


Chart 2-3

2.3 Keyboard Shortcuts

Support 11 keyboard shortcuts, each with a maximum of 6 keys.

It can save shortcut keys and can be directly used when logging in next time. Shown as chart 2-4

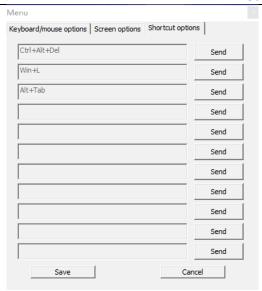


Chart 2-4

Click blank input box, virtual keyboards appears, and then key clicked on the virtual keyboard will be displayed in the input box.



3) Send -----send Ctrl+Alt+Del

Keyboard Macro: click this button, the target server will receive shortcut key.

2 Send Ctrl+Alt+Del

Bring up the task manager of target server (Windows operating system)

4) Mouse Synchronization

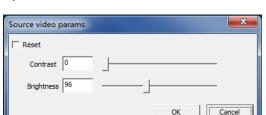
In double mouse mode, click this button to automatically collate the current mouse, and synchronize the external mouse and internal mouse to the origin of the left corner of the video window.



5) Single mouse

In the video window, it will hide the remote user's mouse, and only show the target server's mouse.

6) Source video params





7) Optimum size

The initial size of the video window is 1024x768, when click this button, the video window will adjust the size of the window according to the resolution of the target server.



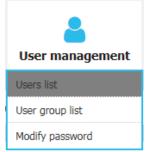
8) Full Screen

The video window enter full screen mode

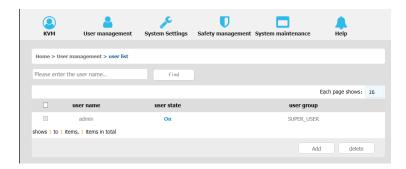
6. IP Menu Option

6.1 User management

User management mainly set up for adding, deleting and modifying user& user group, user name password modification, user group permissions and so on. If the user do not have user management authority, the user cannot access to user management interface. The user in this section is who have the user management authority.



User List

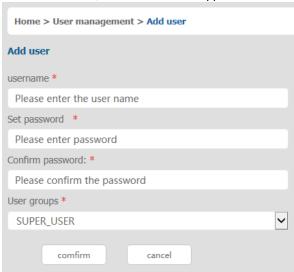


User list interface: list all registered users, you can see more by page turning

User name or full user name search
 Input user name, it shows related users which make it convenient when you have a large number of users

Add User

Click **[add]** button, the window below appears:



In this window, "*" is required content

- 1) User name: user name contains only low case letter, number and " "
- 2) Enter password: without strong password protection, the password can only composed of 1-16 letters, numbers or special characters(-@.\$! _); with strong password protection, the password should be filled in according to the rules of strong password protection. More details please check "security management—> security setting—> strong password"
 - 3) User group: Select the corresponding user group

Delete User

Select the user you want to delete, click 【delete】,

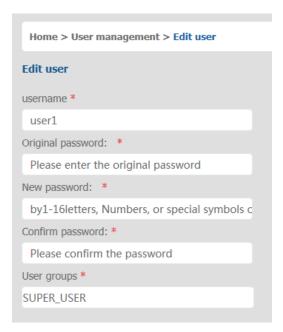


Note: admin cannot be deleted, other users can be deleted, even if they are online.

Edit user

Click [A1], edit user window pop up



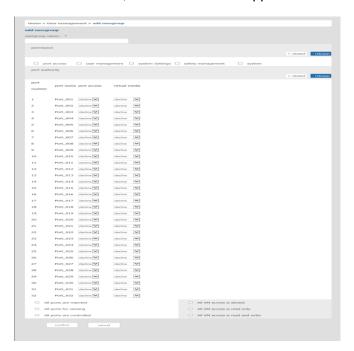


User group list



User group list interface: list all registered users, you can see more by page turning

- User group name search Input user group name, it shows related user groups which make it convenient when you have a large number of users
- Add user groupClick 【add】 button, the window below appears



1) User group name: it only contains low case letter, number and "_"

- Authority: mainly refers to management authority and operation authority, click show more, authority menu appears(shown in picture above), click show less, authority menu disappears
 - ♦ Port Access: Authority to access KVM, and control target server
 - User Management: user management authority
 - ♦ Device Setting: KVM device management authority
 - ♦ Security Management: security management authority
 - ♦ System Maintenance: system maintenance authority
- 3) Port authority: Set up access and operating authority for each port
 - Delete user group Select the user group you want to delete, click 【delete】



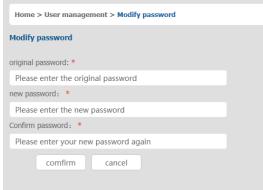
Note: SUPER_USER is system allocated which cannot be deleted

Edit user group Click 【1】 edit user group window pop up; For specific operation, please check "add user group"



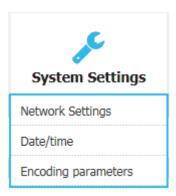
Change Password

The passwords which is using for logged user

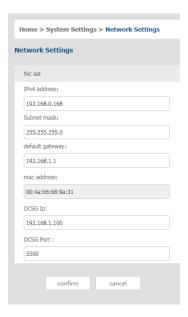


- 1) Old passwords: The passwords you are using
- 2) New passwords: Without strong password protection, the password can only compose of 1-16 letters, numbers or special characters (-@.\$!__); with strong password protection, the password should be filled in according to the rules of strong password protection. More details please check "security management—> security setting—> strong password"

6.2 System



Network Setting



I P v 4 address setting:

- ♦ I Paddress: preset IP address
- ♦ Subnet mask: Generally, it should be consistent with other devices in the network.
- ♦ Default gateway: Generally, it should be consistent with other devices in the network.
 - ♦ MAC address: physical address
- ♦ DCSG IP: the IP address should be the same with the Authentication Server IP address
- DCSG Port: the Port should be the same with the Authentication Server Port.

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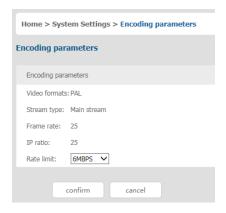
Date /Time setting



System time setting:

- Customized time: manual setting
- Synchronize with the NTP server: the system automatically updates the time according to the time server
 - Time zone setting: choose time zone

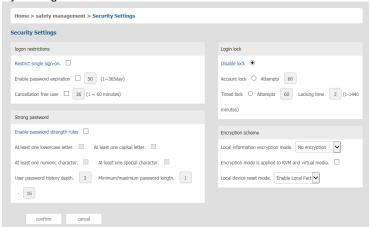
Encoding Parameters



6.3 Safety management



Security Settings



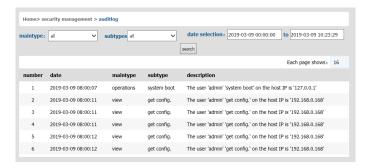
- Login restriction: user name login restriction
 - ♦ Single sign on restriction: if one user name is logged in, it can no longer log in with this user name, if it is selected, you can log in with the user name
 - \diamondsuit Enable passwords expiration: current password use days ranges from 1-365 days, if it is selected, the default is 50 days
 - Free user log off: If user do not have operations after logging in a set time, the user will be logged off automatically
- Login lock
 - Disable Lock: when it is selected, login lock will be canceled
 - Account lock: set trying number of times for login attempts failed
 - Timed lock: set the account lock time when account login failed attempts are over the setting number of times
- Strong password
 - Enable strong password: when it is selected, the original password will be forced to be changed
 - Password history depth: new password cannot be the same as the latest 3 default passwords, this number can be changed, it ranges from 1-10
 - ♦ Strong password length: From 1 bit to16 bits.

■ Encryption mode

DES AES128

- ♦ Local information encryption mode: AES256 three encryption schemes and one un-encryption scheme
- Encryption mode is applied to KVM and virtual media: applied when it is selected

Audit Log

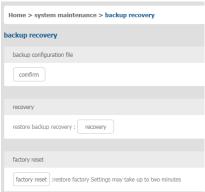


6.4 System Maintenance



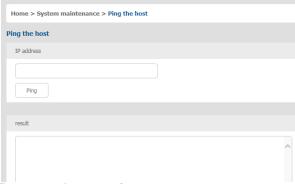
Provide system maintenance tools such as test tools, data backup and restart

Backup& Restore



- Backup :backup current system settings
- Restore: restore the last backup of system
- Factory reset: Restore to factory state (KVM must be restarted to take eff ect)

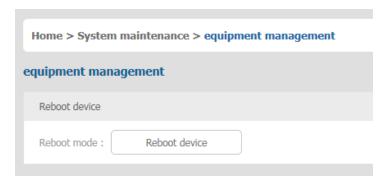
Ping Host



■ Test network connection state to target server

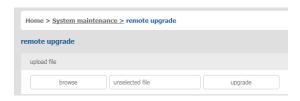
Input IP address and click [ping] button, if network is smooth, result returns to "ip is active"; If not, it returns to "no response from IP" (IP is tested target server's IP).

Equipment Management



Remote upgrade

Provide users with better upgrade experience and continuous technical support



Upgrade method:

Click [browse] and select upgrade file, upload the file to the device, then click [upgrade] to finish upgrade

Appendix

Model		HT1108	HT1116	HT1132	
Computer Connection			8	16	32
Port selection			8	16	32
Port selection			Pushbutton, OSD menu, Web		
Connector	Console	Keyboard Mouse	2x USB TYPE A		
		Monitor	1-HDB-15 Female(blue)		
	KVM Port (RJ-45)		8	16	32
	Upgrading switch		1x RJ11 Female		
	Power		3-Prong AC socket		
Switch	Port Selection		8	16	32
	Reset		1x touch-button		
	Upgrading switch		1x toggle switch		
	Power		1x rocker switch		
LEDs	Online(Green)		8	16	32
	Selected(Orange)		8	16	32
	Power		1(blue)		
	Cascade display		2x 7- Segment (orange)		
Remote	Remote control		KVM control (ActiveX control)		
	Management way		Web		
	Security		DES encryption		
	Resolution		1920×1080@60Hz		
I/R Value			100V-240Vac, 50-60Hz , <1.5A		
Power Consumption		8W	9W	11 W	
Environment Requirements	Operating Temperature		0 — 40 ℃		
	Store Temperature		-20 — 60 ℃		
	Humidity		0—80%RH,Non-condensing		
Physical Features	Material		Metal		
	Weight		2.9kg	2.9kg	3.2kg
	Dimension		433x171x44.5mm		