18.5" FHD KVM over IP Console
(8 Port /16 Port /32 Port)
User Manual

Table of Contents

1. Product Overview

1.1 Introduction

The IP-based KVM (IP-KVM) redirects the local keyboard, mouse and video data to a remote management console.   The operator can safely manage one or many computers locally at the server site or remotely via a standard internet browser.   Securely gain BIOS level access to systems for maintenance, support or failure recovery over the internet.

The IP-KVM console integrates multiple KVM switches in a 1U height console.   It can control multiple computers with a set of devices including monitor, keyboard and mouse; saving cost and space by consolidating the hardware to a single device.

The IP-KVM console is fast and easy to install.   Simply connect corresponding cables to the correct ports of the KVM and its module without software configuration.   Connect multiple computers with compact RJ-45 connectors and CAT5e/6/7 cables, transmitting distance is up to 100M.

1.2 Features

Hardware
- 18.5" FHD LCD monitor, high definition and high resolution
- Rack-mountable in a 1U EIA system rack
- Full size keyboard with integrated number pad
- Trackball eliminates the need for a separate, external mouse

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 port
- Multiplatform client support (Windows, Linux, Unix, Mac, Solaris (Sun), Redhat, Ubuntu
- Supports a graphical interface for intuitive and convenient human-computer interaction- local resolution is up to 1920×1080@60Hz
- Supports 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 Or KVM_Clients remote management
- BIOS-level access
- Video quality and video tolerance can be adjusted to optimize data transfer speed, up to 30 FPS
- Full screen or scalable video display
- Remote users and local users can control the same server 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
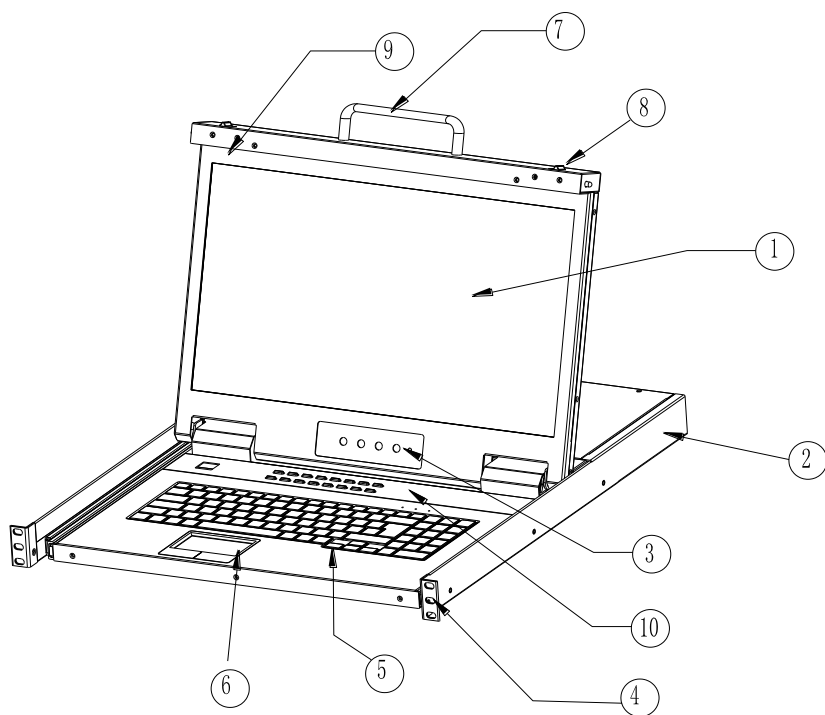- Supports firmware upgrade

1.3 Appearance

Front View

Figure 1.1   Front view

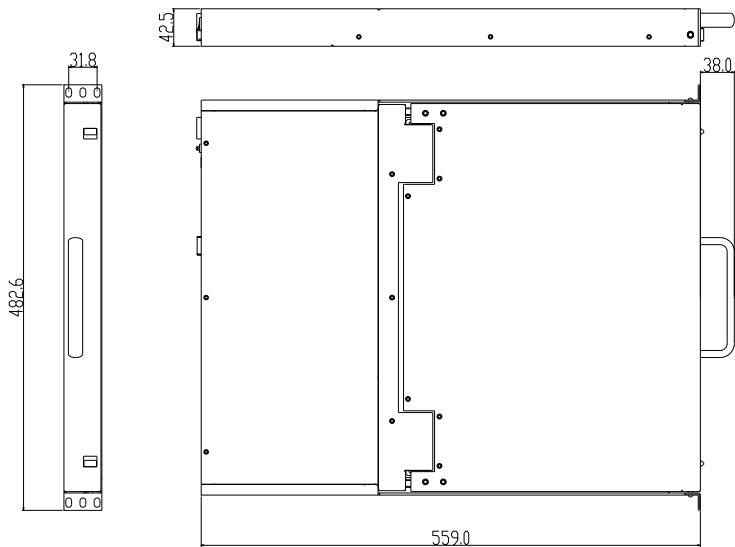|		
1. LED Monitor	2. Rear Bracket Slot	3. LED OSD Controls
4. Front Bracket	5. Keyboard	6. Touchpad
7. Handle	8. Release Catch	9. Display Panel
10. Switch LED		

Structure and Size (18.5)
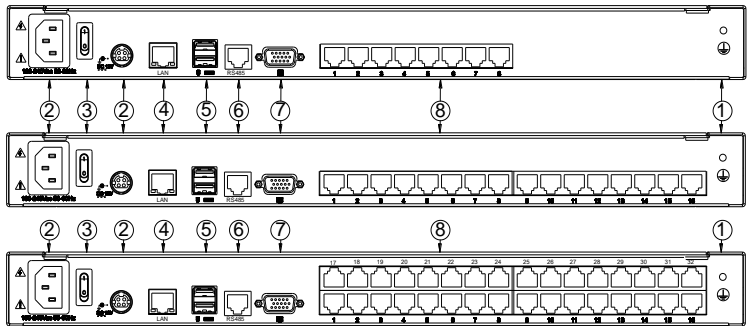

Figure 1.2   18.5" console size dimensions

Rear View

Figure 1.3   Rear view

1. Ground Screw	2. Power Input (AC/DC)	3. Power Switch
4. LAN Port	5. USB Port	6. RS485 Port
7. Monitor Port	8. PC Connecting Port	

2. Installation and Start-up
2.1 Rack Mounting

A standard rack mounting kit is provided to mount the switch in a depth of 620-720 mm (18.5˝) in a standard 19" rack.   For other mounting distances, the rear brackets need to be customized accordingly.   With one person hold the switch in place, the other person slides the L bracket into the switch's side mounting brackets from the front to the back, then screws the brackets to the rack (see below installation drawing).
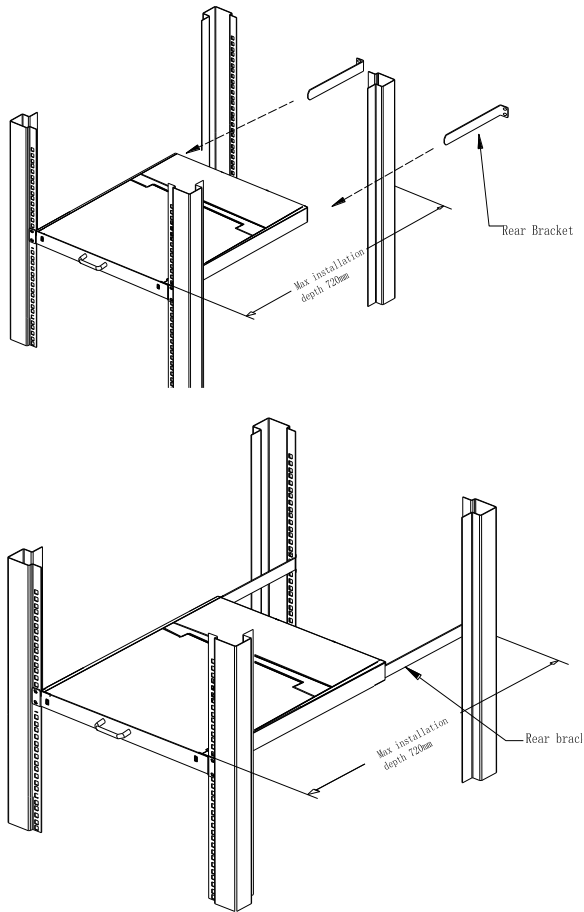
Figure 2.1   Rack Installation Diagram
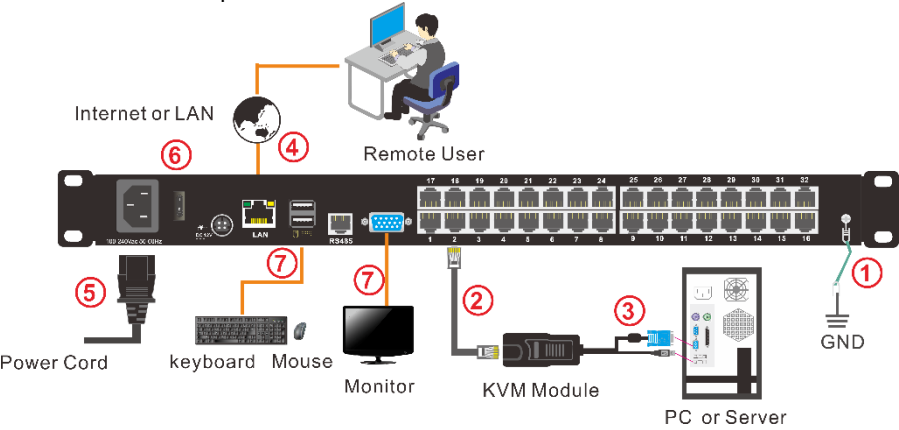
2.2 Install KVM Components

Figure 2.2   Installation diagram

Installation Steps:

1.   Make sure the KVM console has been connected to the ground.
2.   Connect the KVM adapter to the PC or Server.
3.   Connect the KVM adapter to the KVM port with a CAT5 cable.
4.   You can remote control the KVM switch via IP.
5.   Using power adapter to connect the KVM into 220V AC power supply.
6.   Power on the switch
7.   Connect the external keyboard, mouse and monitor (optional)

Module Explanation
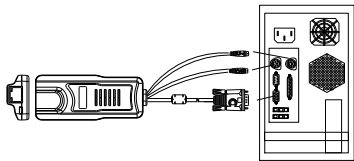
PS/2 CPU module   **USB CPU module**
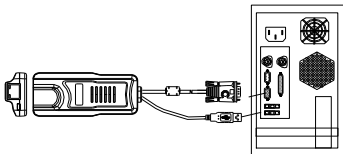
Components	Functions
Green	indicates that the KVM has connected to its corresponding computer and power on.
Orange	indicates that the computer attached to its corresponding port is up and running.

2.3 Opening the Console
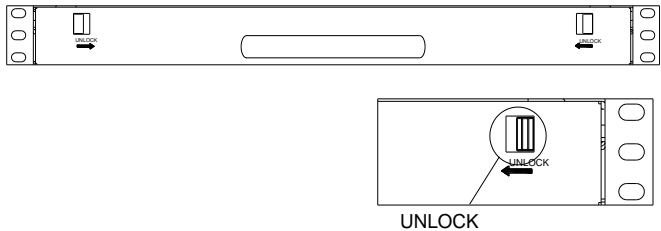1.   Release the release catch;

UNLOCK

Figure 2.4   Unlocking
Note: The release lock can only do horizontal locking, it doesn't bear any load.

2.   Pull the KVM console all the way out until it clicks into place;
3.   Rotate the LED module all the way back to expose the LED screen; the LED
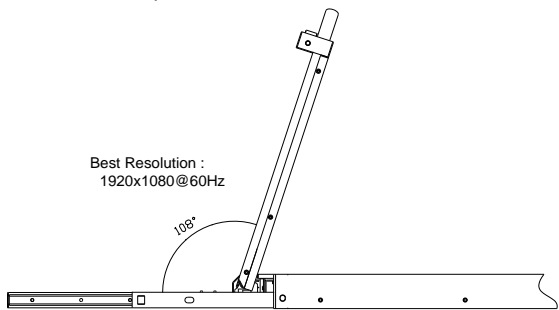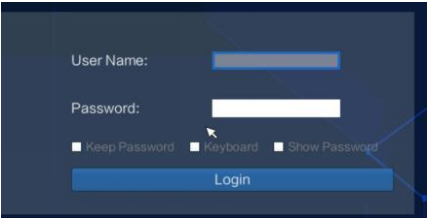   module can be rotated up to 108°.

Best Resolution :
1920x1080@60Hz

108°

Figure 2.5   Open angle of the console

4.   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.

Default Items	Default Value
User name	admin
Password	admin

5.   LED panel is powered on when the power LED is green.
6.   Power on the computer or server after power on the KVM.

2.4 Closing the console

● Close the LED display panel and the power automatically shut down.
● Push the KVM into the cabinet: When pushing forward, the rail will be unlocked automatically; push forward until the KVM is fully pushed into the cabinet, the KVM will be automatically locked.
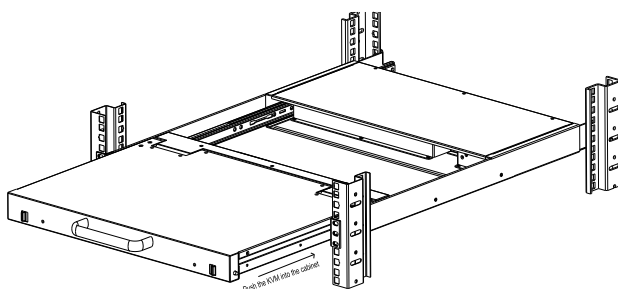

Diagram 2-6 unlocking the console

3.   LED Operation

3.1 LED Functions

Figure 3.1 LED front views

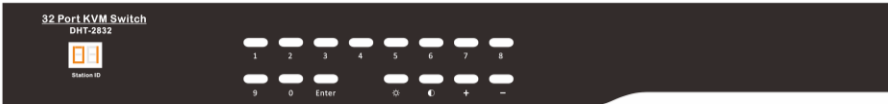| No.	Components	Function
	1-16	Switching freely from port 1 to port 16
	Reset	Press 【1】and 【2】 at the same time for three seconds resets the keyboard and mouse
	Scan	Press【7】and【8】at the same time for three seconds enters the auto scan mode.
1	Brightness ☼	Press 【3】 for three seconds enters brightness 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.
	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 ◑ ☼	Press 【6】 for three seconds will initialize the brightness and definition of each port.
2	Port Selection Buttons & LEDs	Indicator LEDs are built into the switches, the online LED light is on the left and the selected LED light is on the right. 1. An online LED light (green) indicates that the KVM has connected to its corresponding computer and power on. 2. A selected LED light (orange) indicates that the computer attached to its corresponding port is up and running.
3	Station ID	Display the current port

Figure 3.2   32 Port LED front views

| No.	Components	Function
1	0~9 +Enter	Switching from port 1 to port 32 Port 8 : If you want to switch to Port 8, press【8】, and the LED light displays ⬚⬚, then press "Enter", you will come to Port 8. Port 32: If you want to switch to Port 32, press【3】and【2】, the LED light displays ⬚⬚, and then press "Enter", you will come to Port 32.
2	☼ (+, -)	Adjust Brightness Press ☼, the LED light blinking with ⬚⬚, and then press "+" and "–"to adjust the brightness.
3	◑ (+, -)	Adjust Definition Press ◑ , the LED light blinking with ⬚⬚ , and then press "+" and "-"to adjust the definition.
4	Station ID	Display the current port

3.2 Operating the Monitor
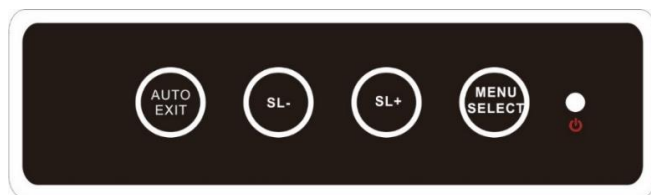
Figure 3.4   Monitor adjust menu buttons

The LED OSD allows you to set up and configure the LED display.

Buttons	Functions
MENU SELECT	Brings up the main menu.
EXIT/AUTO	Exits the current menu and returns to the previous menu or exits the LED OSD. Press AUTO for automatic configuration.
SL-/SL+	Moves the menu to make corresponding adjustment.
LED state	Green: Running Red: Power off or access non standard VESA signal Flashing green: Energy saving mode or no signal

Press AUTO if the screen migrates after power on or under other circumstances, then the screen auto-configures to its best display state.

Note:
- *It may not be adjusted to its best state if part of the display mode is not standard VESA mode. if so, return back to OSD menu to RESET, then it will revert back to normal.*
- *It is recommended to set up the display mode at 1366×768@60Hz, refresh rate at*

  60Hz.

3.3 Key Combination Function

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

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

4. User Interface Operation

login UI control menu

Default Items	Default Value
User name	admin
Password	admin

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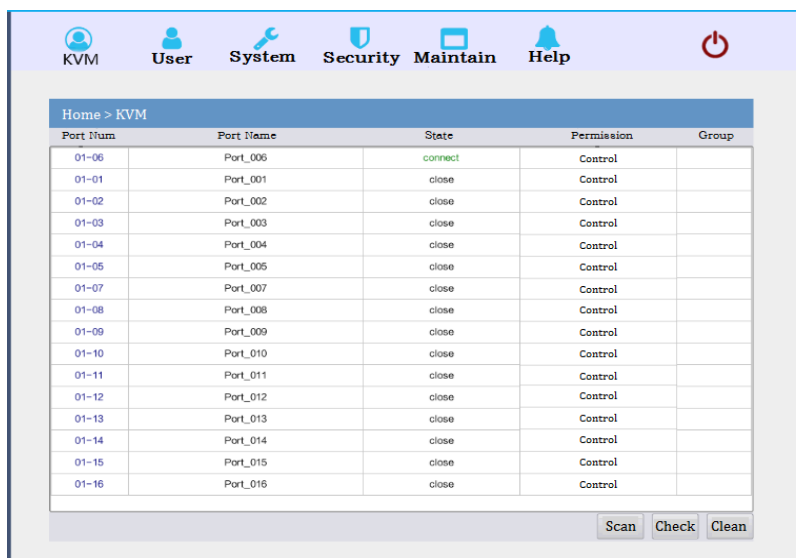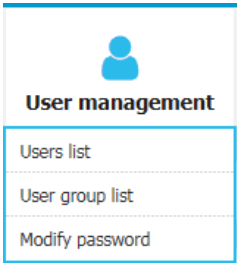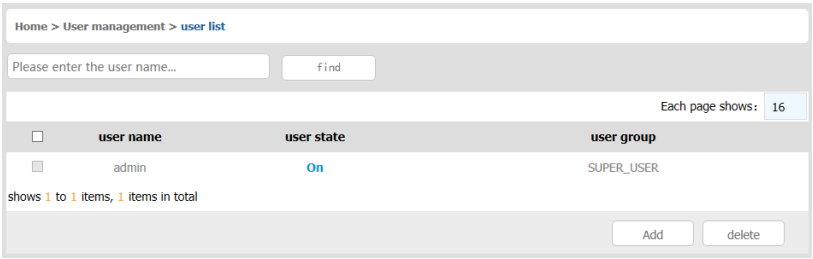

In the port list,

1.   Click the "Connect" to enter the host screen;
2.   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 user& user group adding, delete and modifying, 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

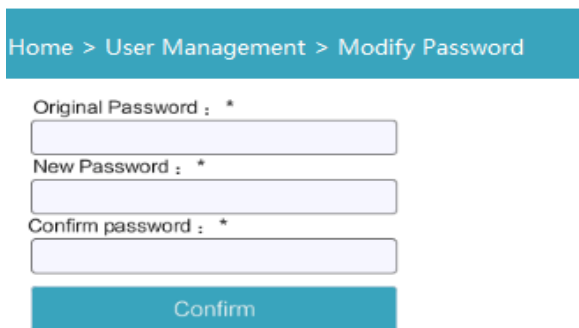User list interface: List all registered users, you can see more by page turning

• 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:
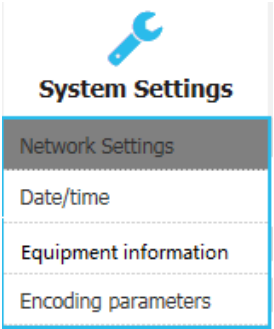

Note: In this window, "*" is required content
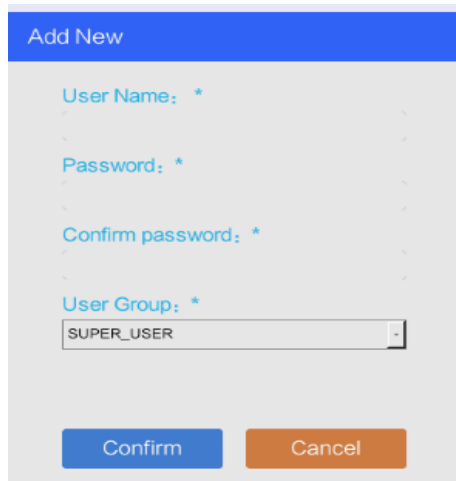
1.   User name: user name can contains only low case letters, number and "_"
2.   Enter password: without strong password protection, the password can only compose of 1-16 letters, numbers or special characters (-@.$! _)；With strong password protection, the password should be filled in according to the rules of strong password protection. More details please check "security management—＞ security setting—＞strong password"
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 group
   Click【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
The passwords which is using for logged user

Note: In this window, "" is required content*

1. User name: user name can contains only low case letter, number and "_"
2. Enter password：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
3. User group：Select the corresponding user group

4.2 System

Network settings

IPv4 address setting:
- IP address: 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.
.

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 lockout
    - Lockout forbidden: when it is selected, lockout will be canceled
    - Account lockout: account setting for login attempts failed
    - Time lockout：when account logging attempts over the setting times, the time for lockout

- Strong password
    - Enable password strength rules：when it is selected, the original password will be forced to be tighten
    - Password history depth: new password can not be the same as the latest 3 (default) password, this number can be changed, it ranges from 1-10
    - Strong passwords is at least 1 bit and maximum is 16 bits

- Encryption scheme

    DES
    AES128
    - Local information encryption scheme: AES256   three encryption schemes and one un-encryption scheme
    - Encryption scheme is applied to KVM and virtual media: applied when it is selected
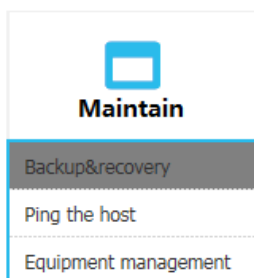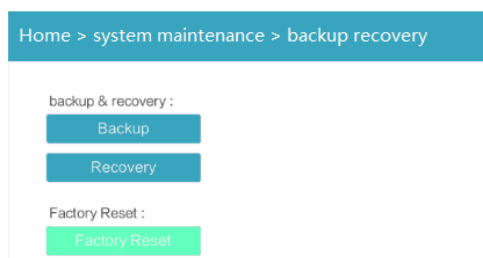
- Audit log

4.4 Maintenance

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

Backup & Restore
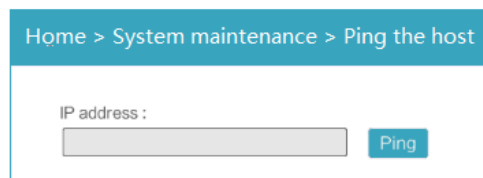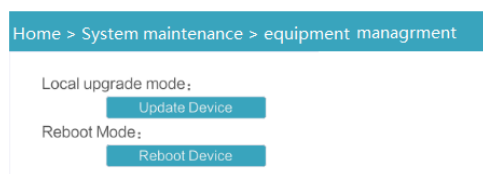

Backup: backup current system settings
Restore: restore the last backup of system
Factory reset: Restore to factory state (KVM must be restarted to take effect)

Ping

Update

5. Remote Control

5.1 Configure the Target Server

Before installing and using the IP-KVM Switch, connect and configure the target server first.
Refer to below configuration instructions:
- The digital 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,
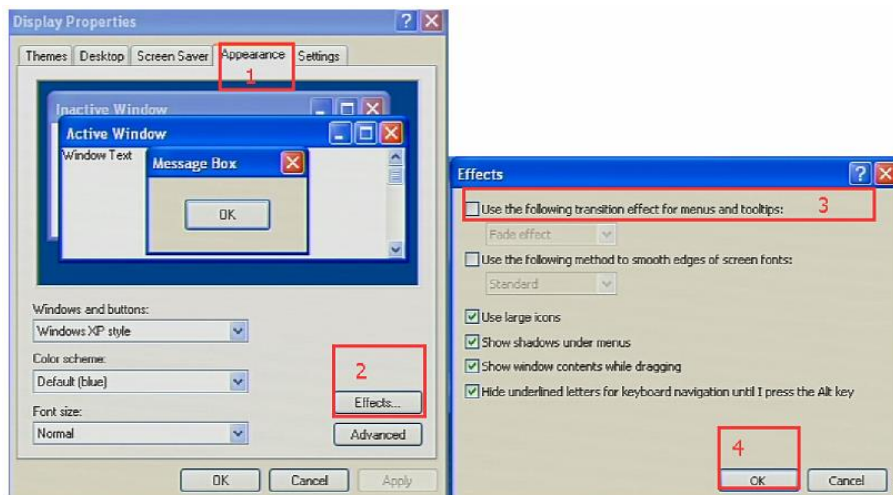Windows server 2012; Windows XP, Windows7, Windows8, Windows10
- Set Mouse Precision
    Start—>Control Panel—> [Hardware]—>Mouse
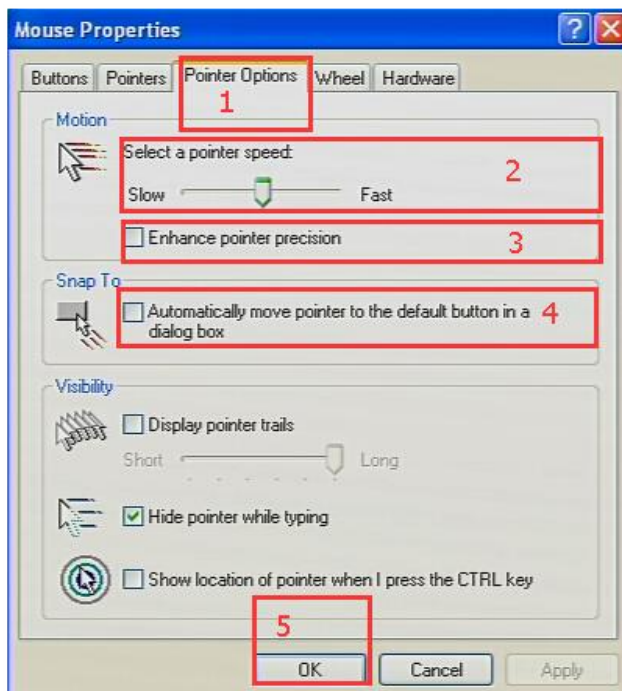
Please follow the steps above to finish the setting.

• Set up the display of the target server under Windows XP, Windows 2003, Windows 2008
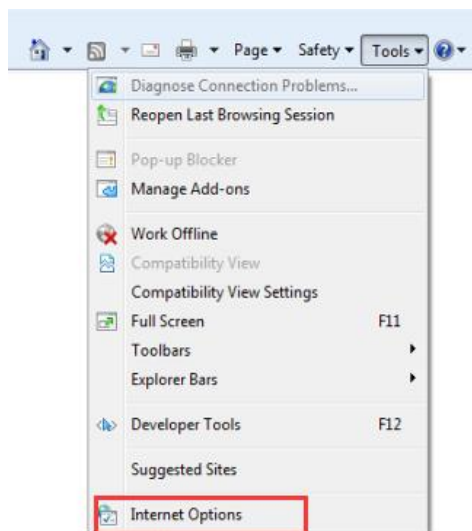
Start—>Control Panel—> [Hardware]—>Display

Please follow the steps above to finish the setting.

• Configure the mouse under Linux (ubuntu 10)
• Input "set m 1 1" in the Linux command line terminal and press Enter to finish the mouse setting, as shown below.
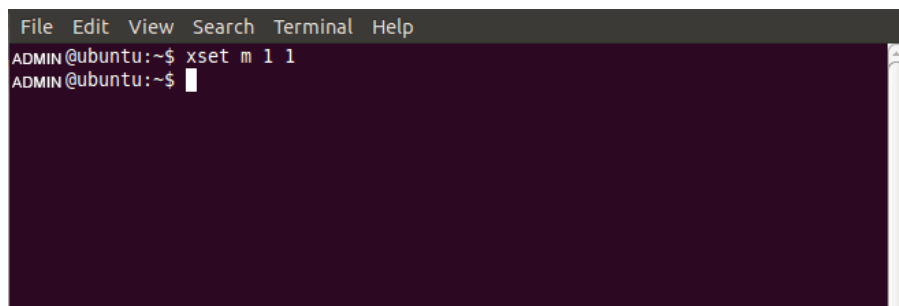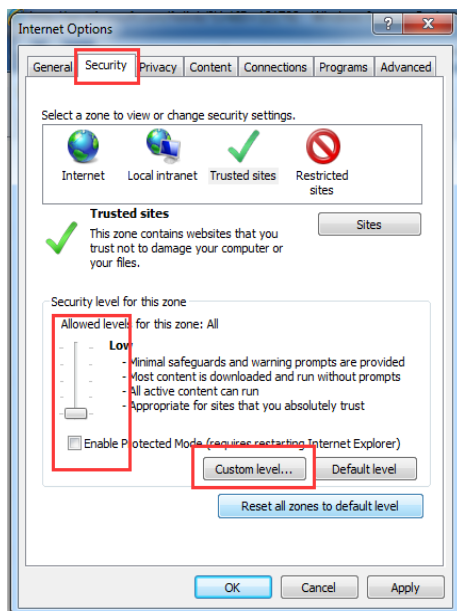
5.2 Remote WEB Interface Settings
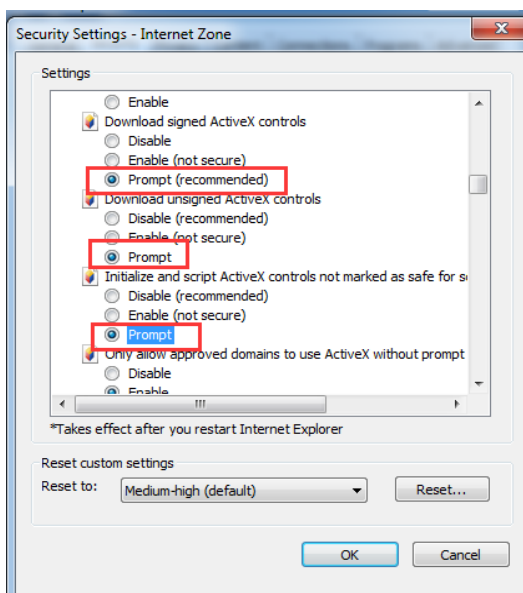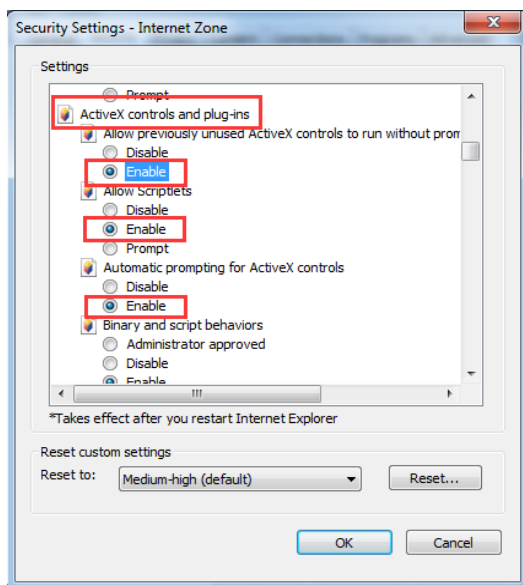
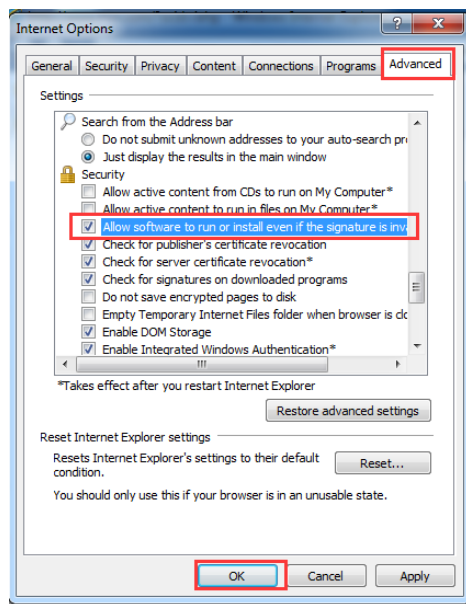Install and open IE browser, click top-right settings→【Internet Options】

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.	
Differentiate between capital and lowercase letters.	

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

| Default Items	Default Value
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.
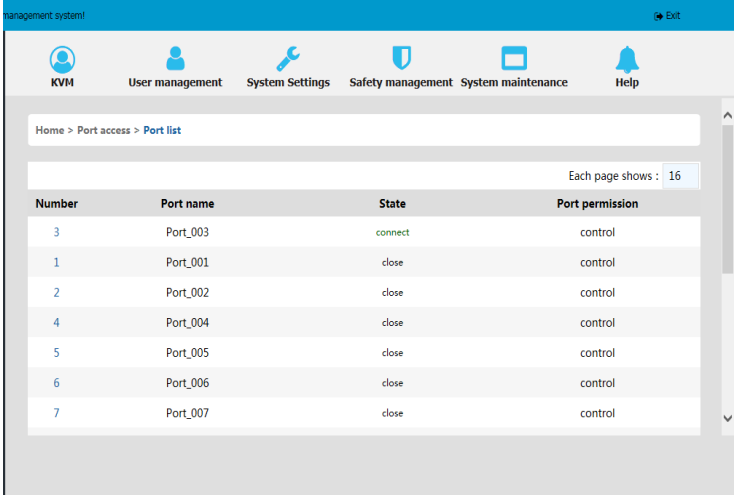
Access status of the KVM ports, three connection status:

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 KIM 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:
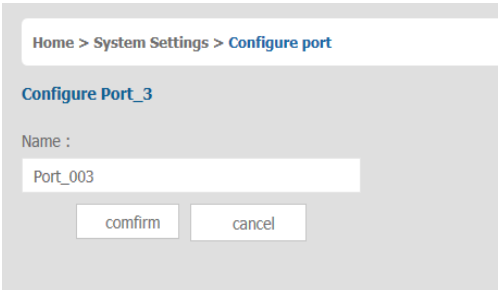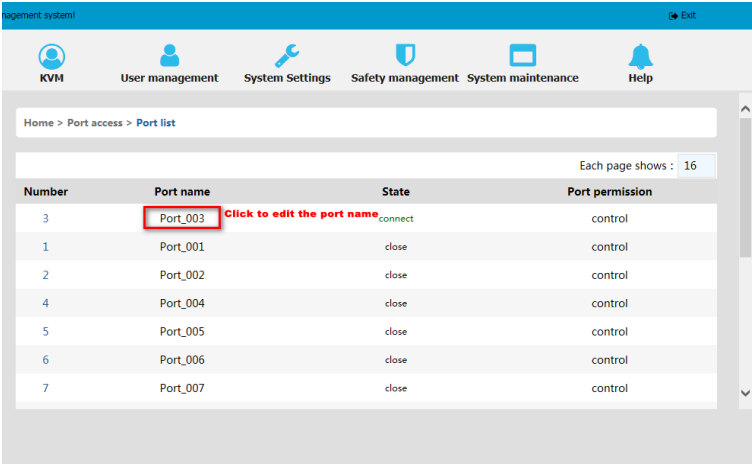
5.4 Video Control Interface Menu

【Hide or Show Toolbar】
【Setting Option】
【Send Ctrl+Alt+Del】
【Mouse Synchronization】
【Single Mouse】
【Adaptive Window】
【Source Video params】
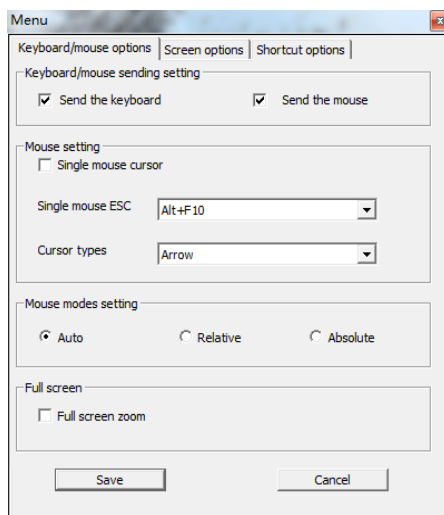【Full Screen】

1. Hide or Show Toolbar

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

2.   Setting Options
   Keyboard & Mouse Options
   When user has the authority

Keyboard/mouse sending setting
- Send 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 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 shortcuts and it changes into double mouse mode
- Cursor types: it can set remote user's mouse cursor type in double mouse mode

Mouse Mode
- Relative and absolute modes, latest version only support absolute mode

Full Screen Setting
Full Screen Zoom: When unselected, the video window will spread the video screen full of the remote computer screen in the full screen state; when selected, if 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 below.
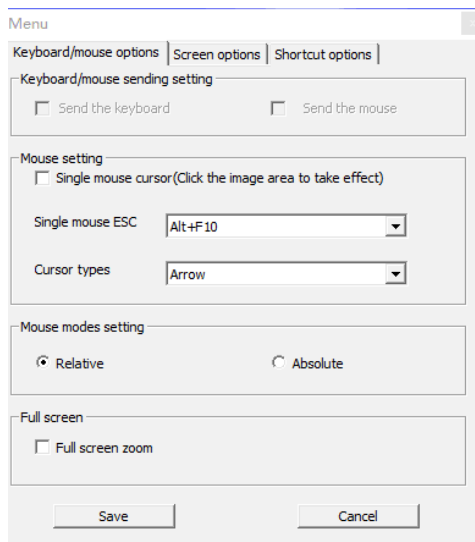
Display Option
Display option dialogue shows screen parameters and screen information.

Screen 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: When automatic calibration canceled, users can customize 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: KXT III 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 needs to select the option by its own.
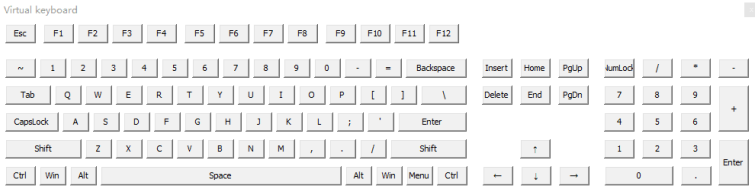

Keyboard Shortcuts

Supports 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.

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

Send [send Ctrl+Alt+Del]
Keyboard Macro: click this button, the target server will receive shortcut key.   Send Ctrl+Alt+Del.   Bring up the task manager of target server (Windows operating system)

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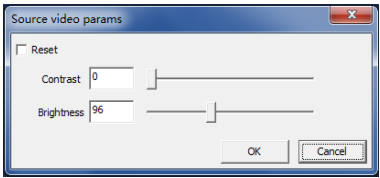
Single mouse
In the video window, it will hide the remote user's mouse, and only show the target server's mouse.

Source video params

Optimum size
The initialization 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.
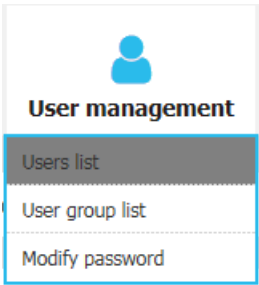
Full Screen
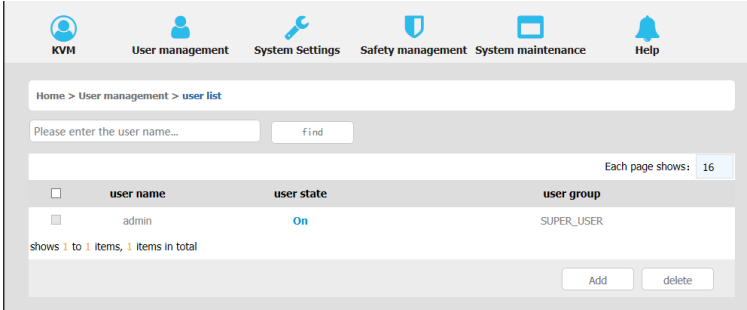The video window enter full screen mode

6.   IP Menu Option

6.1 User Management

User management mainly set up for user & user group adding, delete and modifying, 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:

Note: In this window, "*" is required content

1. User name: user name can contains only low case letter, number and "_"
2. Enter password：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"
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 name	user state	user group
☐	admin	**On**	SUPER_USER
☐	user1	Off	SUPER_USER

Home > User management > user list

Please enter the user name...   find

Each page shows： 16

Click to edit the user

shows 1 to 2 items, 2 items in total

Add   delete

Home > User management > **Edit user**

Edit user

username *

user1

Original password: *

Please enter the original password

New password: *

by1-16letters, Numbers, or special symbols c

Confirm password: *

Please confirm the password

User groups *

SUPER_USER

User group list

Home > User management > **user group list**

Please enter the user group name...   find

Each page shows： 16

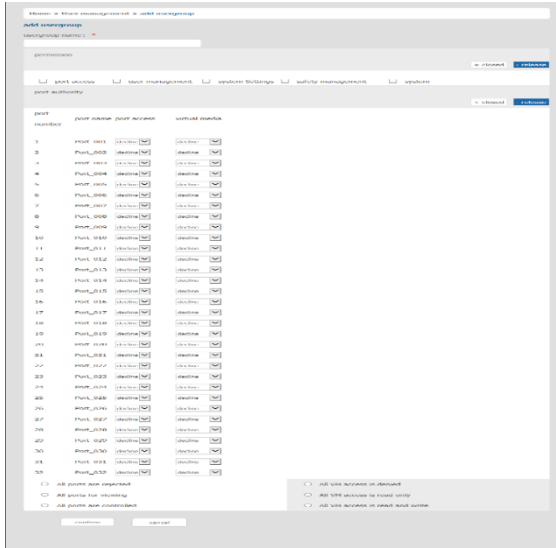|	group id	user group name
☐	0	SUPER_USER
☐	1	usergroup1

shows 1 to 2 items, 2 items in total

Add   delete

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
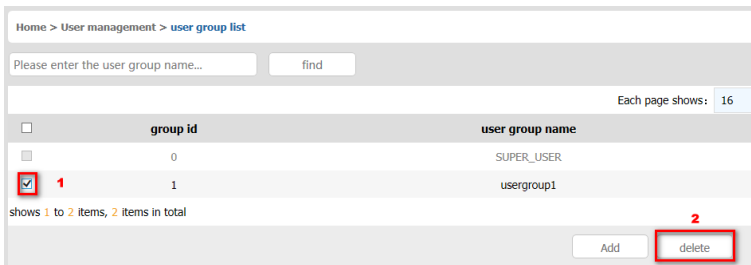
Add user group

Click【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

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"

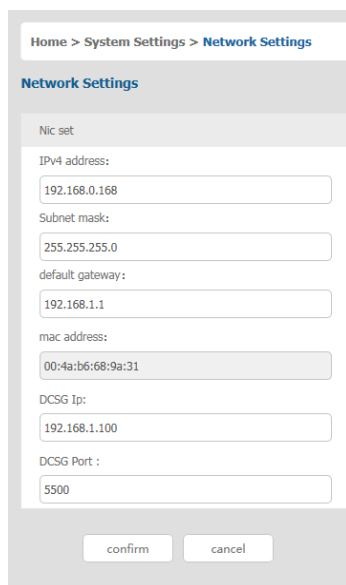**Change Password**

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"
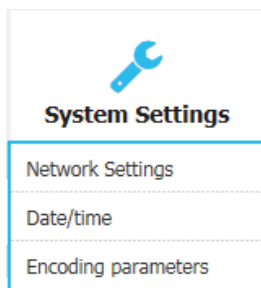
6.2 System Settings

Network Setting

IPv4 Address Setting:
- IP address: 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.

Date /Time Setting

Home > System Settings > **Date setting**

Date setting

◉ User setting time

Set date:

2019-03-08

Setting time:

10:20

◯ Synchronize with the NTP server

Time server:

◉ Time Zone Settings

Select time zone:

East 8 (Beijing, China)

Confirm   Cancel

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

Home > System Settings > **Encoding parameters**

Encoding parameters

Encoding parameters

Video formats: PAL

Stream type: Main stream

Frame rate: 25

IP ratio: 25

Rate limit: 6MBPS

confirm   cancel

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
- 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 lockout
- Lockout forbidden: When it is selected, lockout will be canceled
- Account lockout: Account setting for login attempts failed
- Time lockout: When account logging attempts over the setting times, the time for lockout

Strong password
- Enable password strength rules：when it is selected, the original password will be forced to be tighten
- Password history depth: new password cannot be the same as the latest 3 (default) password, this number can be changed, it ranges from 1-10
- Strong passwords is at least 1 bit and maximum is 16 bits

Encryption scheme

- Local information encryption scheme:　three encryption schemes and one un-encryption scheme
- Encryption scheme is applied to KVM as 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
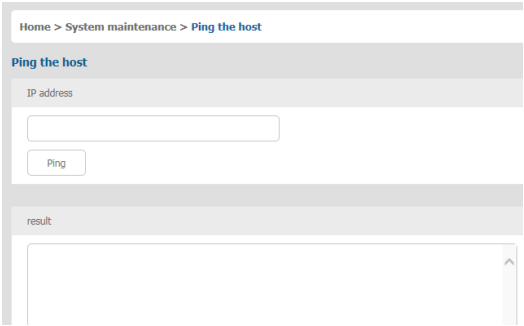
Backup & Restore

- • Backup: Backup current system settings
- • Restore: Restore the last backup of system
- • Factory Reset: Restore to factory state (KVM must be restarted to take effect)

Ping Host

Test network connection state to target server

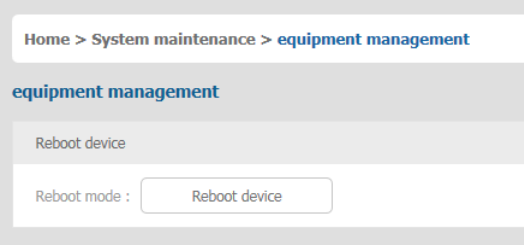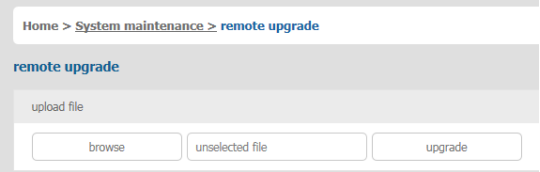Input IP address and click【ping】 button , if network is smooth, result returns to "IP is active"; if not, it returns to "no response from IP" (IP is tested target server's IP).

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

7.Appendix
7.1 Specifications (18.5")

| Model		DHT-2808	DHT-2816	DHT-2832
Computer Connections	Direct	8	16	32
	Max	8	16	32
Port Selection	Keyboard, Mouse	Button, UI, Web		
LED Monitor	Model	FHD TFT		
	View Area	18.51"		
	Optimum Resolution	1920×1080@60Hz		
	Color	16.7 M		
	Brightness	500cd/m²(T y p)		
	Contrast Ratio	1000 : 1 (T y p)		
	Pixel Pitch(mm)	0.213(H) × 0.213(W)		
Mouse	X/Y Resolution	>1000 points / inch, (40 points/mm)		
	Scroll Wheel	Supports Scroll Wheel function		
Keyboard		99 keys (82 keyboard + 17 number pad)		
Remote	Remote Control	KVM Control (ActiveX)		
	Management	Web		
	Security	DES Encrypted		
	Resolution	1920×1080@60Hz		
Power Input		100V- 240Vac , 50-60Hz , <1.5A		
Power Consumption		35W	38W	42W
Operating Temperature		0 — 40 ℃		
Store Temperature		-20 —60 ℃		
Humidity		0~80% RH, non-condensing		
Net Weight		13.5 kg	13.5kg	13.7kg
Product Dimension (W × D × H)		448mm×560mm×42.5mm		
Package Dimension (W × D × H)		765mm×615mm×185mm		

7.2 Grounding Requirements
Make sure the KVM and the devices that connected to KVM are all connected to the ground.
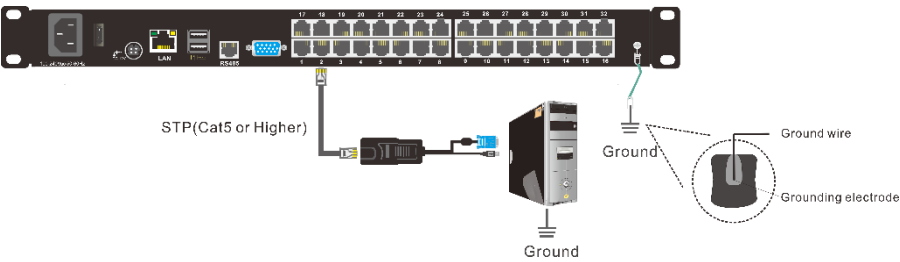
To improve the device safety, please make sure the device is connected to the ground and use the STP cable to connect the device.
The STP cable contains four shielded twisted pair and one ground wire, the ground wire should be welded into the RJ-45 connector.
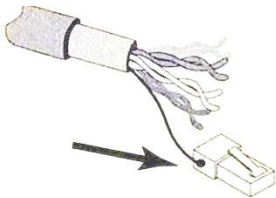
Grounding the STP shield cable (as shown below) , and make sure the metal RJ45 connector is tight shield.
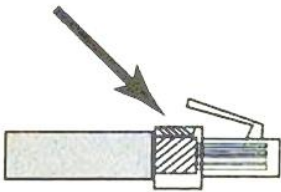
Connect one end of the RJ-45 connector to the ground RJ-45 connection socket.