

**ServSwitch™**

# ServView 17 Enterprise KVM Drawer Range



KVT151AE-UK  
KVT151AE-UK-116  
KVT151AE-UK-132  
KVT151AE-UK-216  
KVT151AE-UK-232  
KVT151AE-UK-IP16  
KVT151AE-UK-IP32  
KVT152AE-UK  
KVT152AE-UK-116  
KVT152AE-UK-132  
KVT152AE-UK-216  
KVT152AE-UK-232  
KVT152AE-UK-IP16  
KVT152AE-UK-IP32

SW151AE-116  
SW151AE-132  
SW151AE-216  
SW151AE-232  
SW151AE-IP16  
SW151AE-IP32

 **BLACK BOX®**  
NETWORK SERVICES

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## 1.1 Important Safeguards

**Please read all of these instructions carefully before you use the device. Save this manual for future reference.**

What the warranty does **NOT** cover

- Any product, on which the serial number has been defaced, modified or removed.
- Damage, deterioration or malfunction resulting from:
  - Accident, misuse, neglect, fire, water, lightning, or other acts of nature, unauthorised product modification, or failure to follow instructions supplied with the product.
  - Repair or attempted repair by anyone not authorised by us.
  - Any damage of the product due to shipment.
  - Removal or installation of the product.
  - Causes external to the product, such as electric power fluctuation or failure.
  - Use of supplies or parts not meeting our specifications.
  - Normal wear and tear.
  - Any other causes which does not relate to a product defect.

## 1.2 Regulatory Notice

### Legal Information

Information in this document has been carefully checked for accuracy; however, no guarantee is given to the correctness of the contents. The information in this document is subject to change without notice. We are not liable for any injury or loss that results from the use of this equipment.

### Safety Instructions

- Unplug equipment before cleaning. Don't use liquid or spray detergent; use a moist cloth.
- Keep equipment away from excessive humidity and heat. Preferably, keep it in an air-conditioned environment with temperatures not exceeding 40° Celsius (104° Fahrenheit).
- When installing, place the equipment on a sturdy, level surface to prevent it from accidentally falling and causing damage to other equipment or injury to persons nearby.
- When the drawer is in an open position, do not cover, block or in any way obstruct the gap between it and the power supply. Proper air convection is necessary to keep it from overheating.
- Arrange the equipment's power cord in such a way that others won't trip or fall over it.
- If you are using a power cord that didn't ship with the equipment, ensure that it is rated for the voltage and current labeled on the equipment's electrical ratings label. The voltage rating on the cord should be higher than the one listed on the equipment's ratings label.
- Observe all precautions and warnings attached to the equipment.
- If you don't intend on using the equipment for a long time, disconnect it from the power outlet to prevent being damaged by transient over-voltage.
- Keep all liquids away from the equipment to minimize the risk of accidental spillage. Liquid spilled on to the power supply or on other hardware may cause damage, fire or electrical shock.
- Only qualified service personnel should open the chassis. Opening it yourself could damage the equipment and invalidate its warranty.
- If any part of the equipment becomes damaged or stops functioning, have it checked by qualified service personnel.

### Regulatory Notices Federal Communications Commission (FCC)

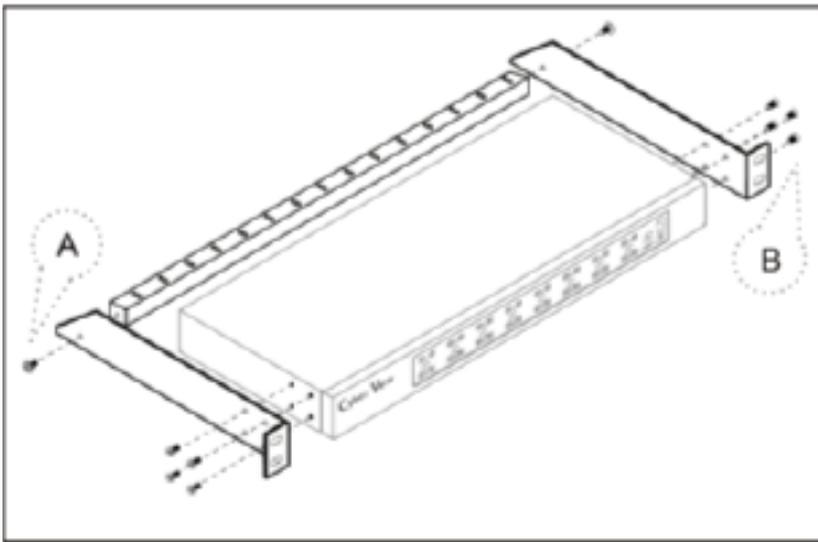
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. Any changes or modifications made to this equipment may void the user's authority to operate this equipment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-position or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

### 1.3 Before Installation

- It is very important to locate the KVM in a suitable environment.
- The surface for locating and fixing the KVM switch should be stable and level or mounted into a suitable cabinet.
- Make sure the place has good ventilation, is out of direct sunlight and away from sources of excessive dust, dirt, heat, water, moisture and vibration.
- Position LCD Keyboard Drawer with respect to related facilities.

### 1.4 Installation of standalone switch

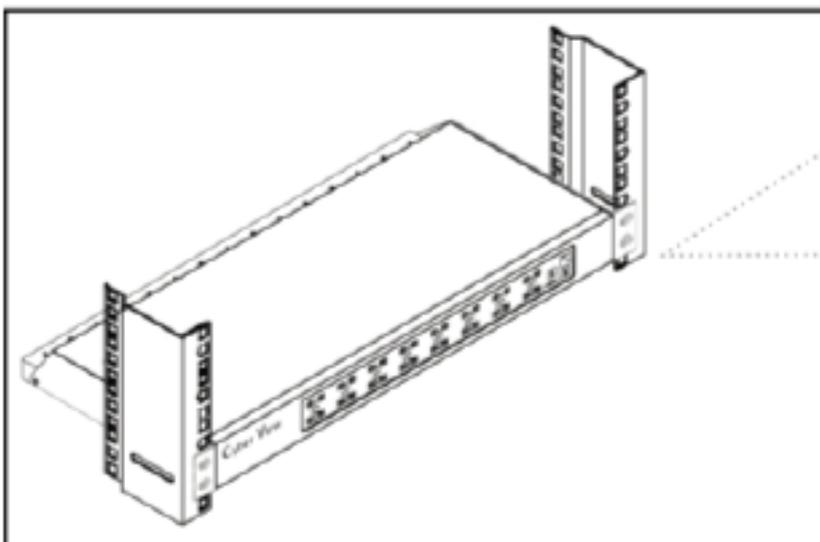


  
screw A: M3.2 x 4.5 mm

  
screw B: M4 x 10 mm

- Install each bracket using screws provided shown in **Figure 1**.

**Figure 1.** Installing the brakcet to the KVM.



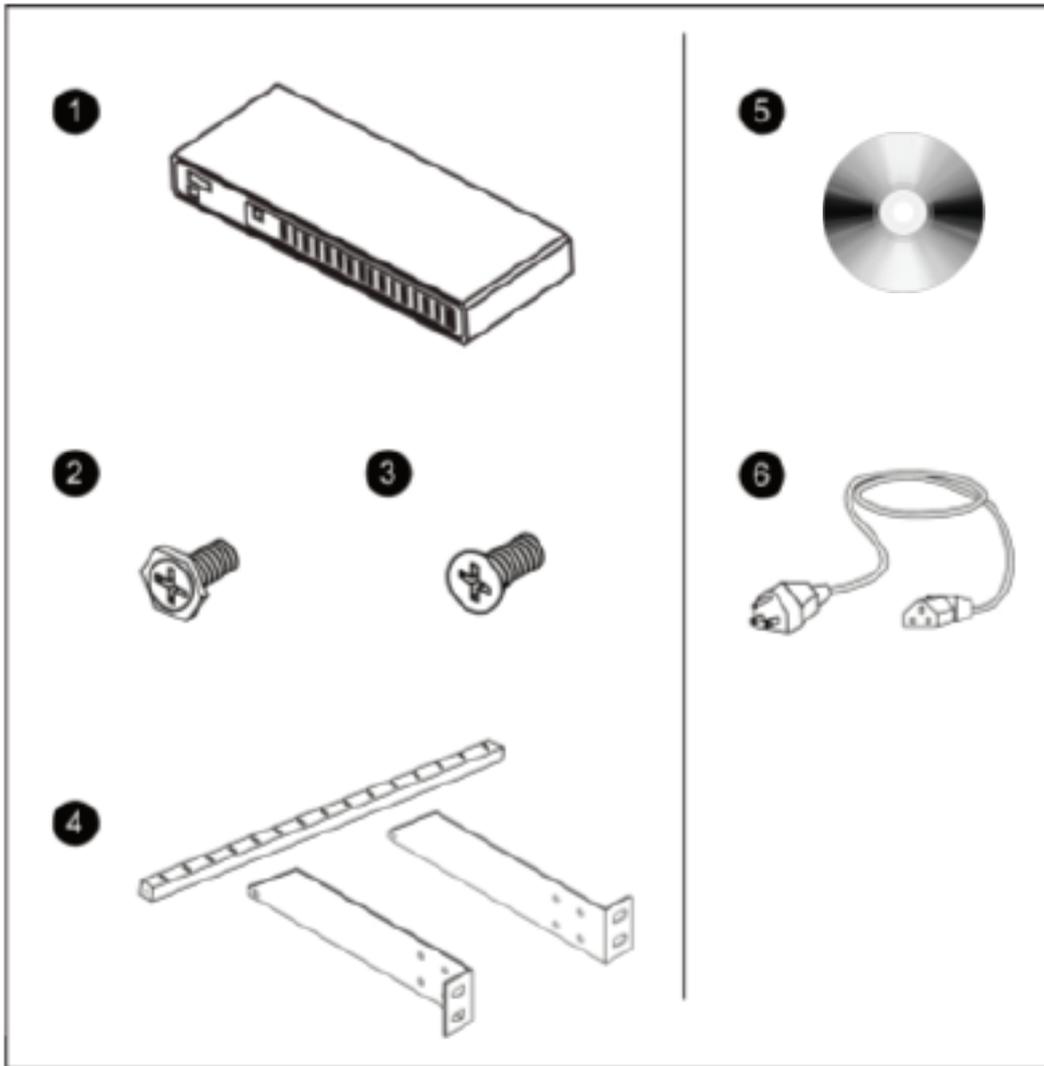
- Fix the KVM into the rack

\* Hardware for fixing the mounting bracket to the rack is not provided.

**Figure 2.** Fixing the KVM into the rack.

## 2.1 KVT15XAE-UK-116/132 CAT5 Single Console

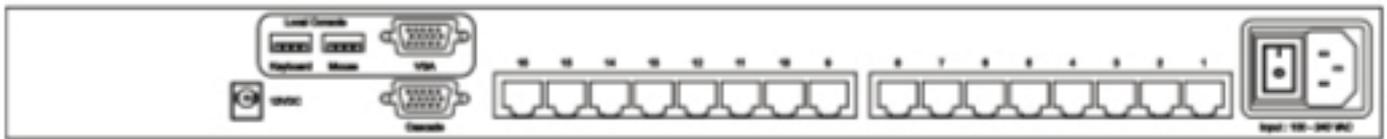
### Package Contents



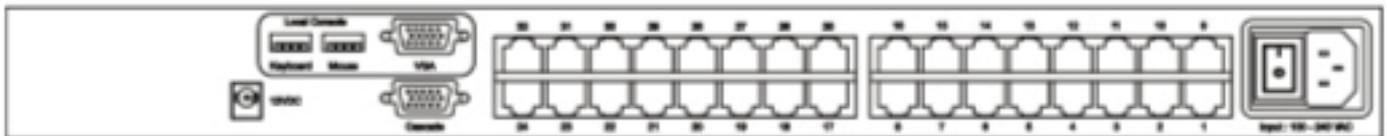
- ① KVM Switch (x1)
- ② Screw M3.2 x 4.5mm (x4)
- ③ Screw M4 x 10mm (x8).
- ④ Bracket Set (x1)
- ⑤ User Manual on CD-ROM (x1)
- ⑥ Power Cord (x1)

Connection

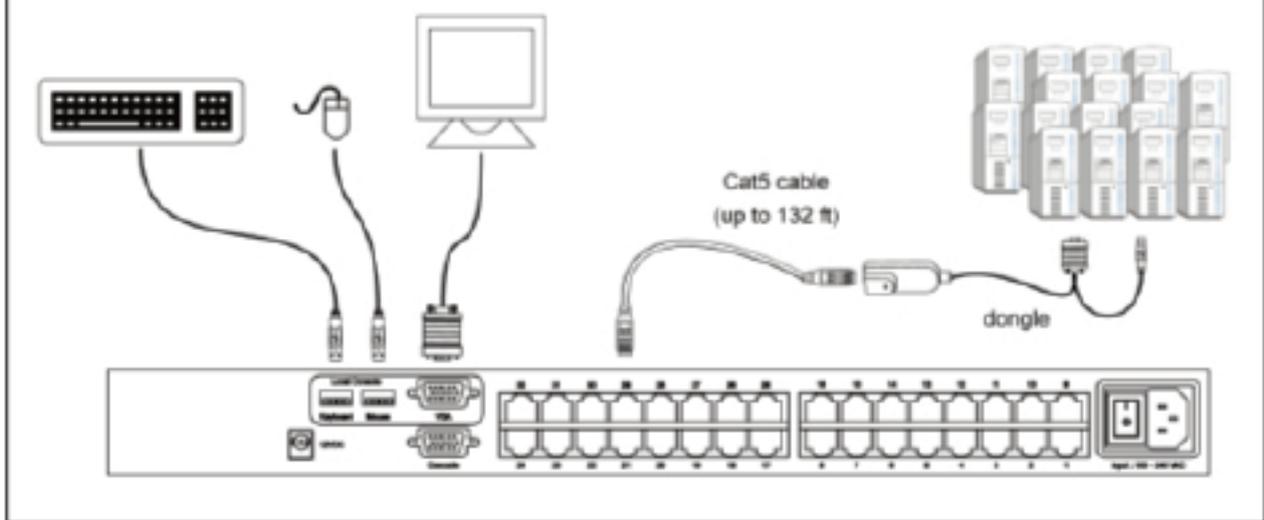
Local Console



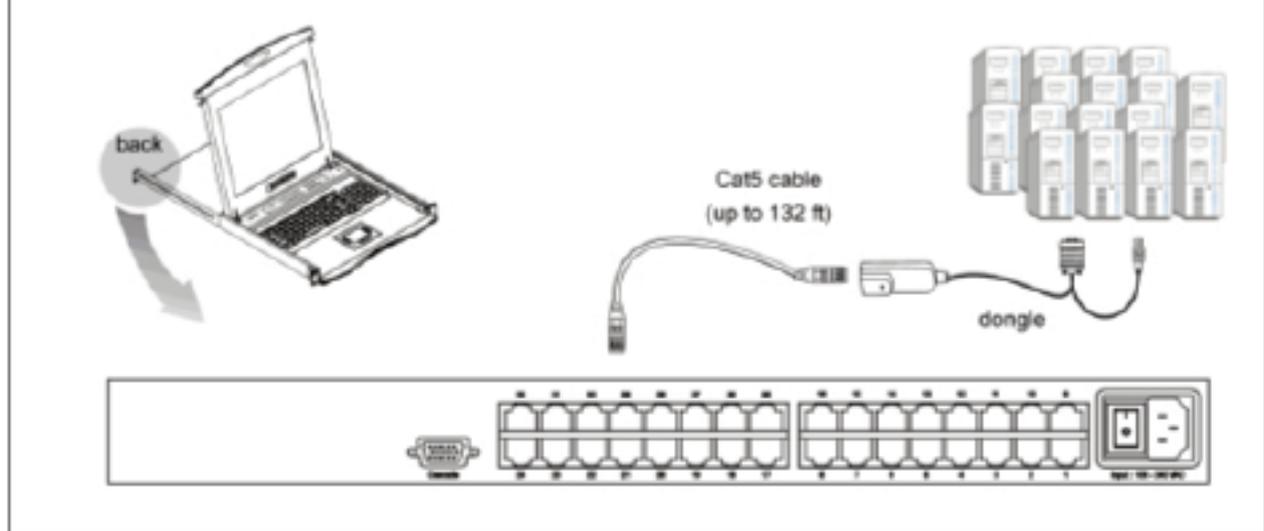
Dual power with failover Cascade



Connection Rackmount KVM

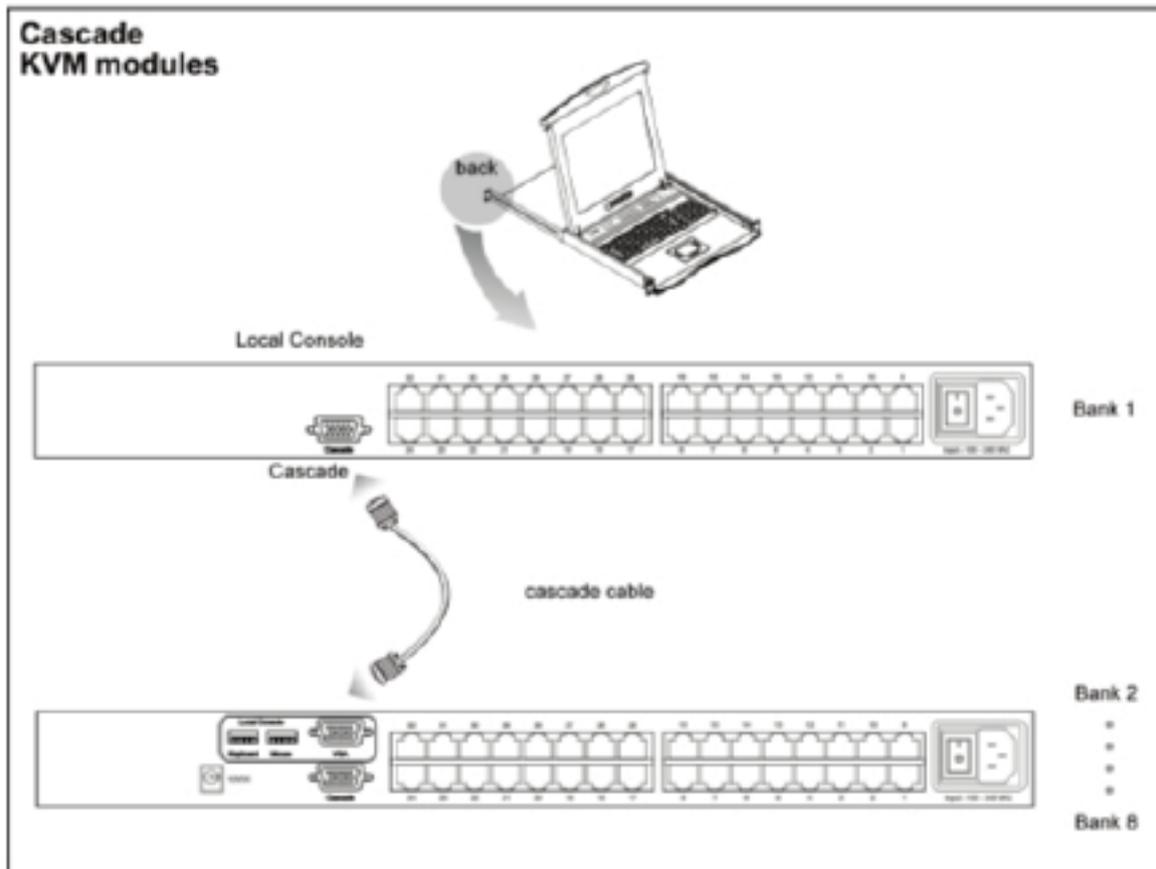
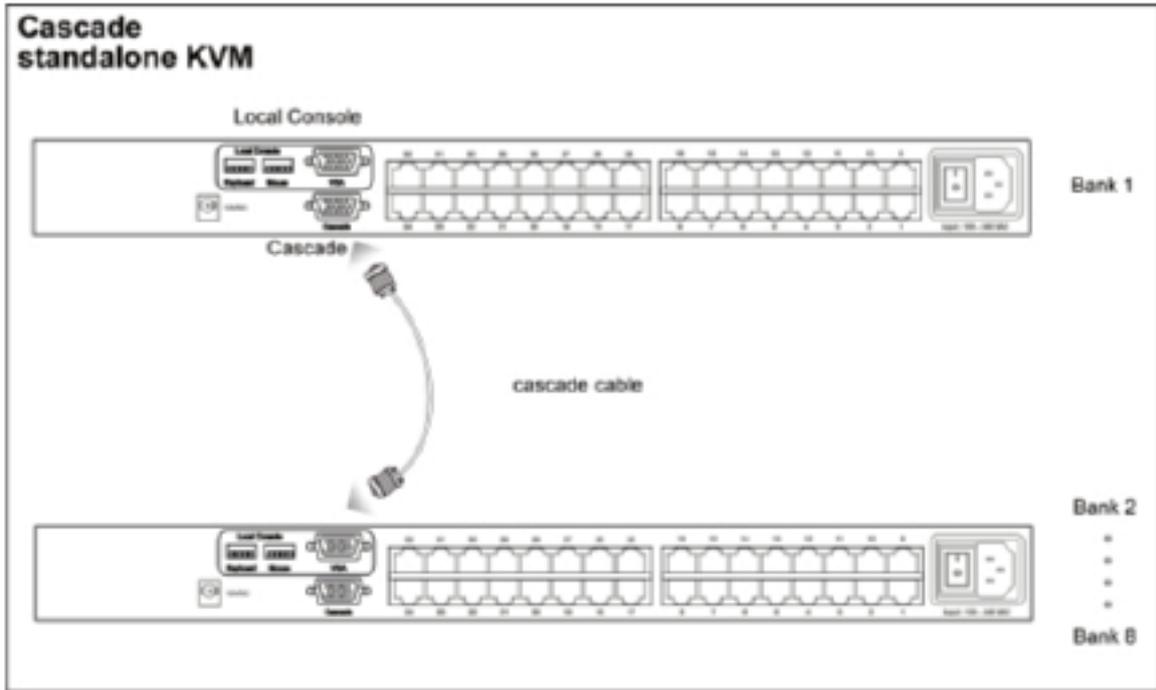


Connection KVM modules



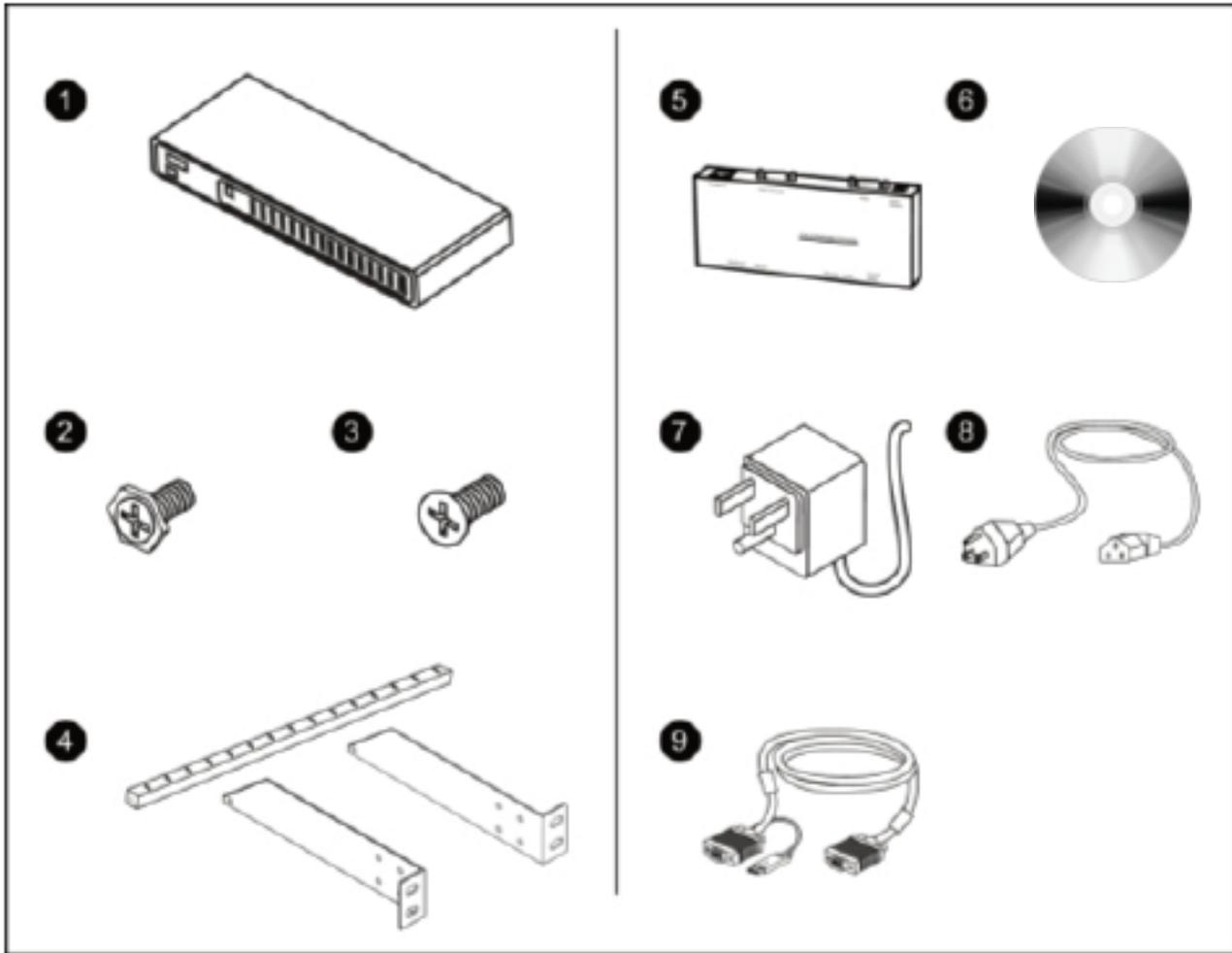
## Cascade

- You can cascade 16 port units to up to 128 servers. With the 32 port unit cascade up to 256 servers.
- Cascade multiple KVM switches using the KVT152A-CASCADE cable.



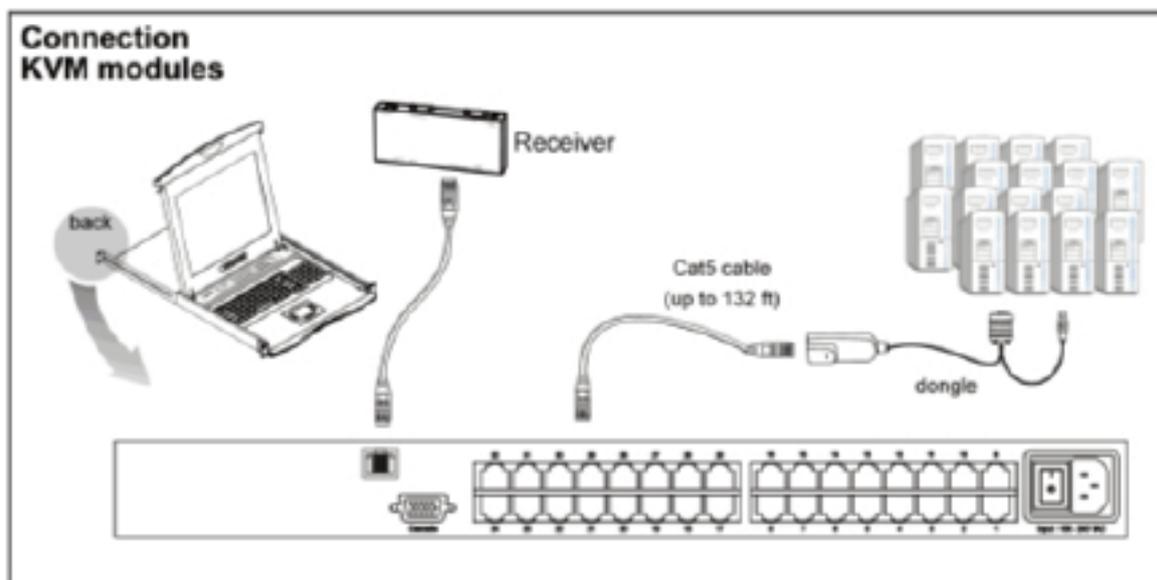
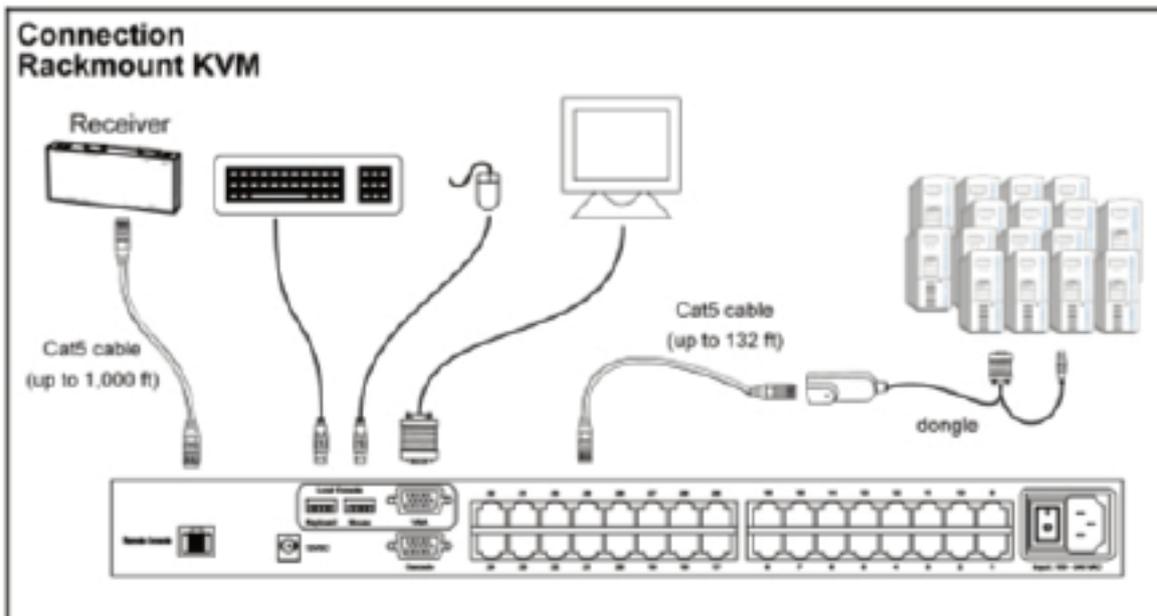
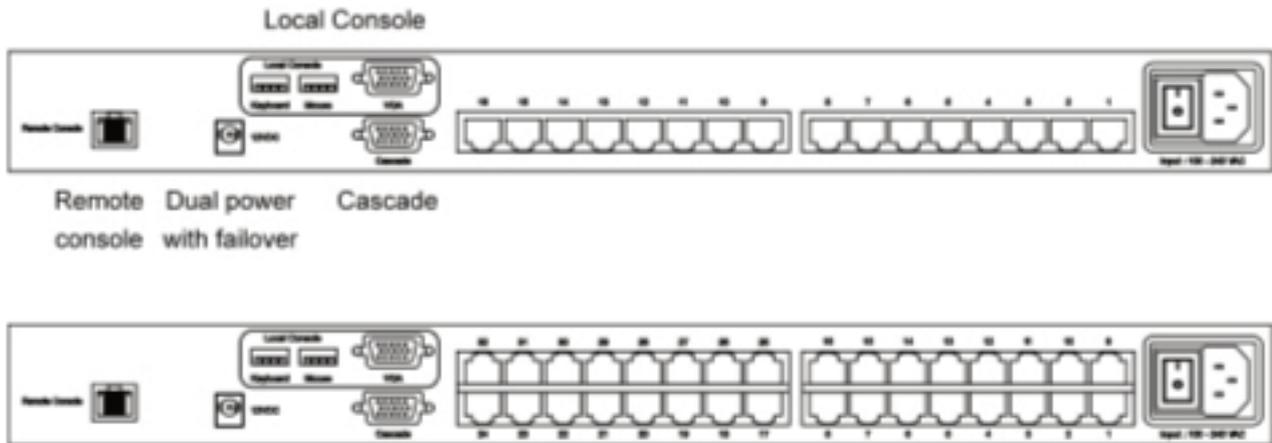
## 2.2 KVT15XAE-UK-216/232 CAT5 Two Console

### Package Contents

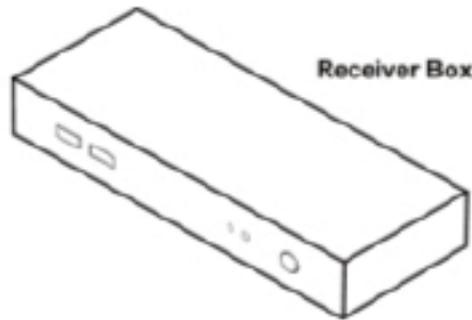


- ❶ KVM Switch (x1)
- ❷ Screw M3.2 x 4.5mm (x4)
- ❸ Screw M4 x 10mm (x8).
- ❹ Bracket Set (x1)
- ❺ Receiver (x1)
- ❻ User Manual on CD-ROM (x1)
- ❼ 9V Power adaptor for Receiver (x1)
- ❽ Power cord (x1)
- ❾ 2-in-1 USB KVM Cable (x1)

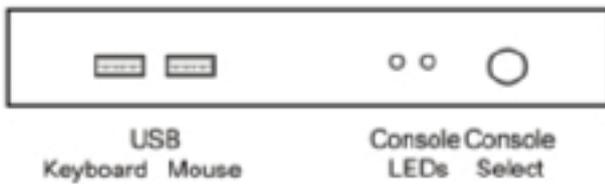
Connection



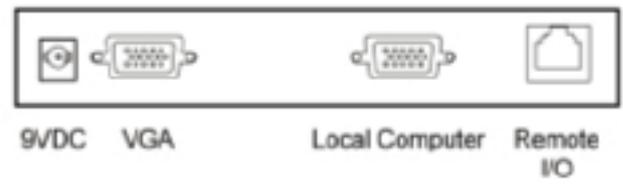
## Receiver



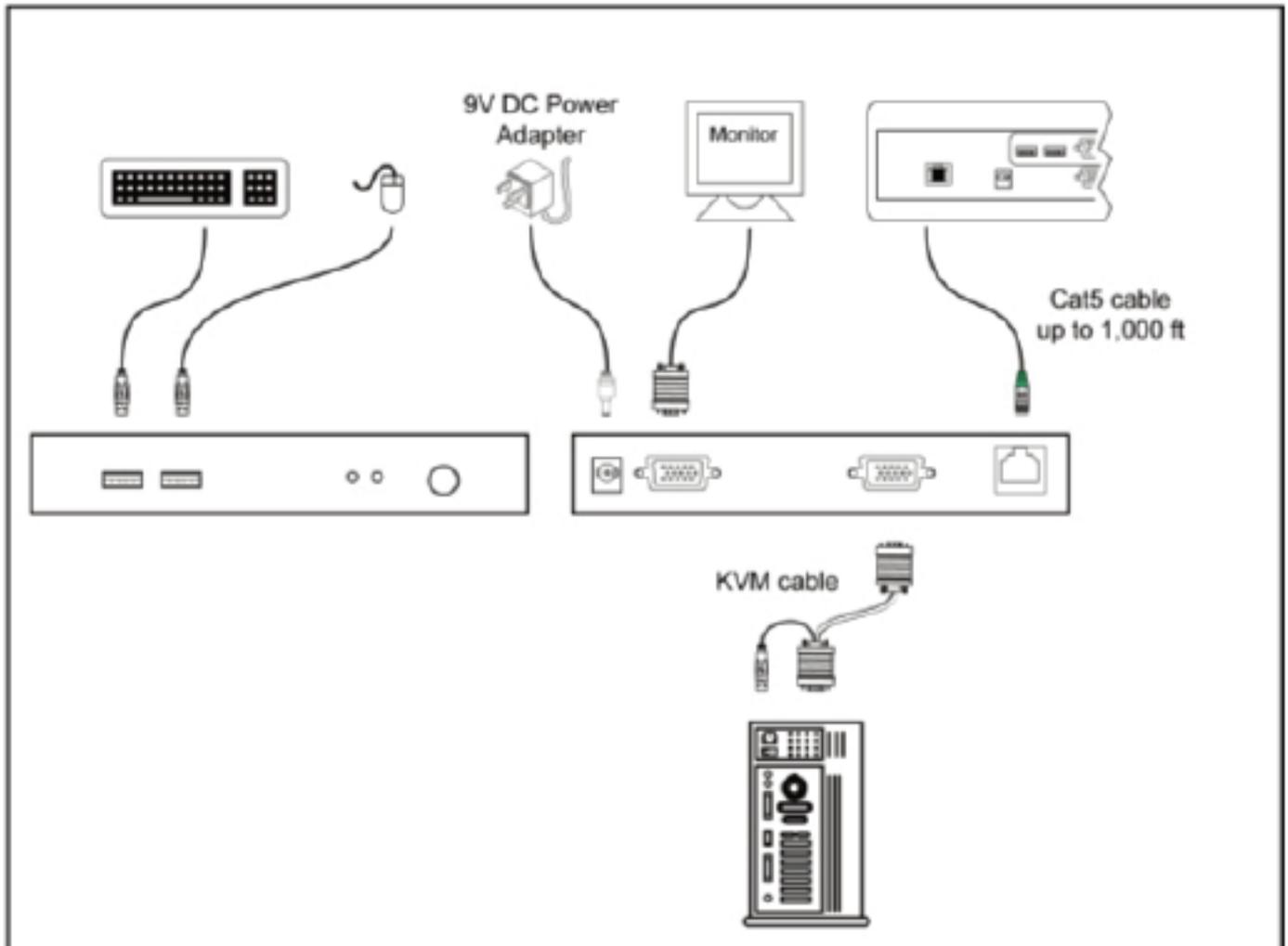
Front View



Rear View

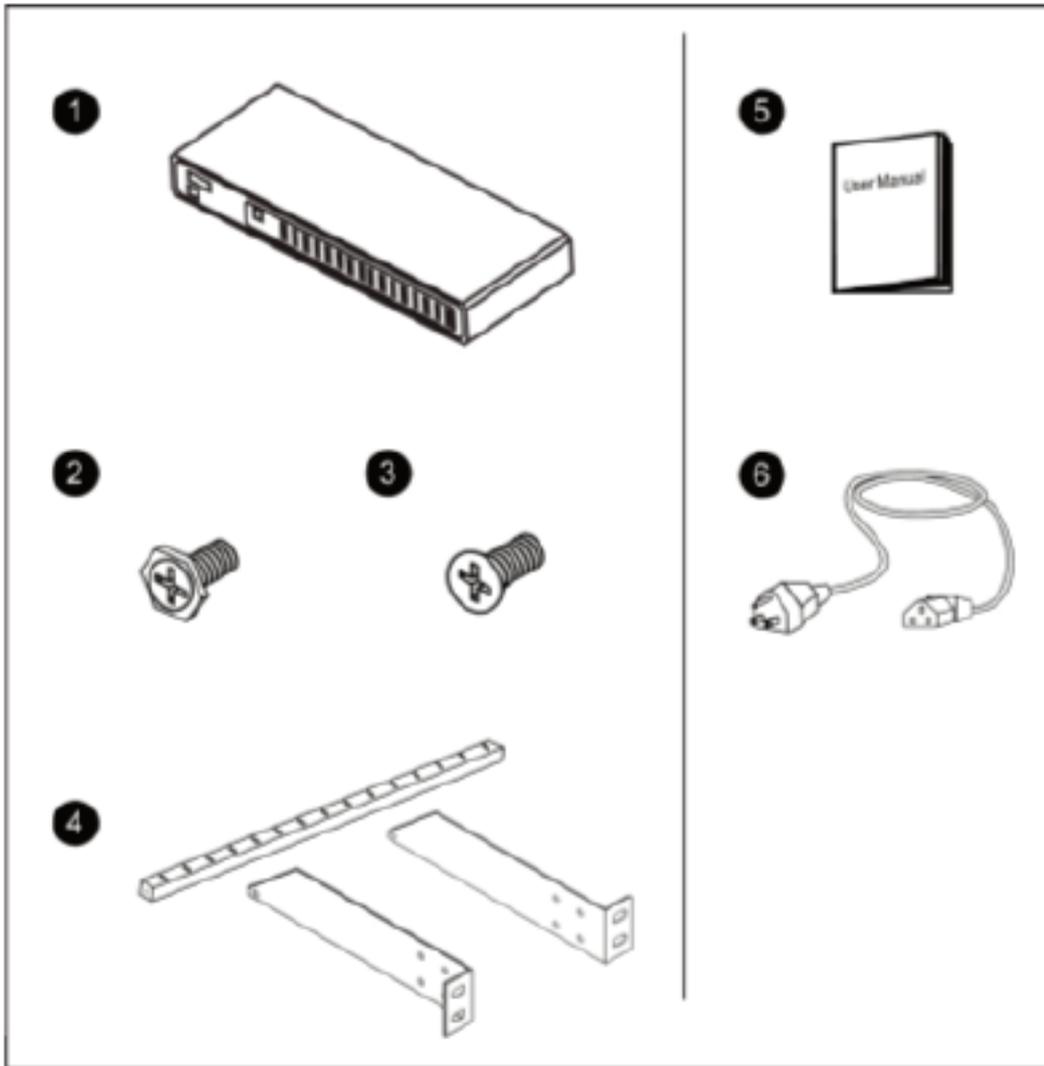


## Receiver



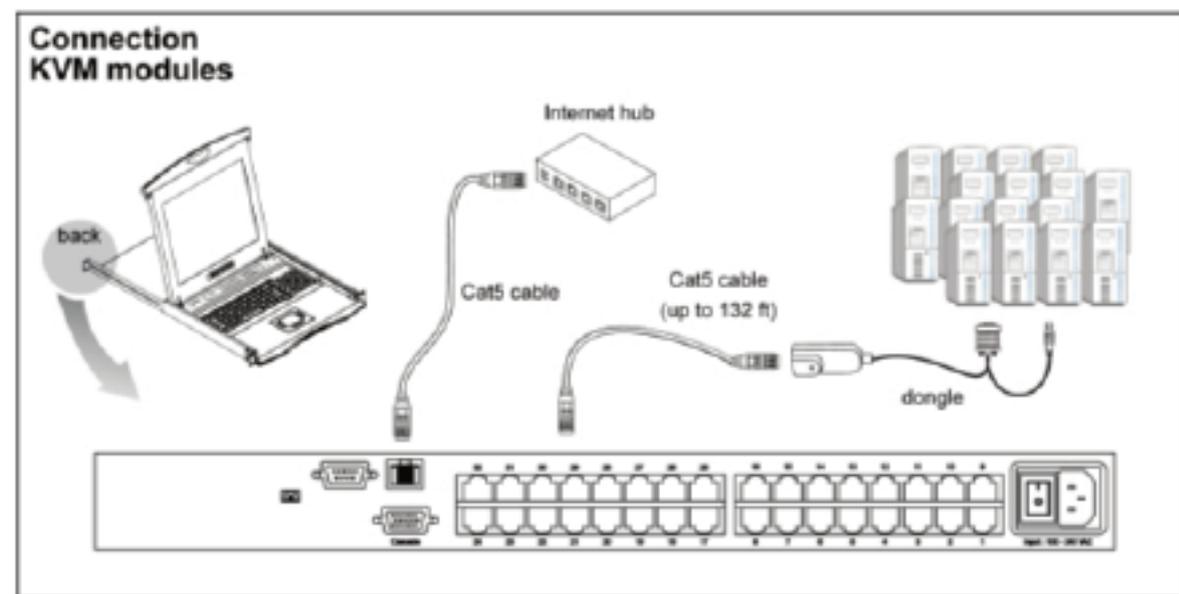
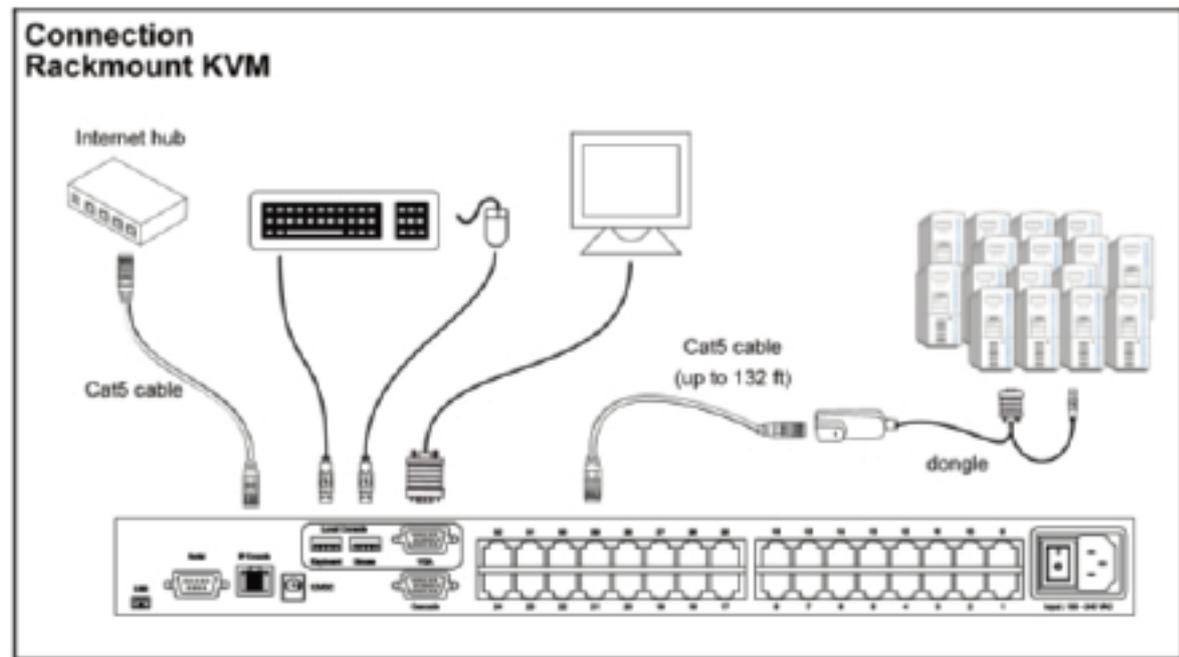
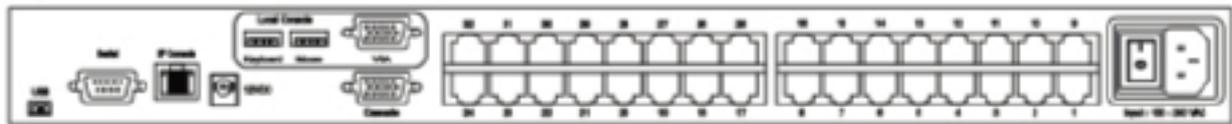
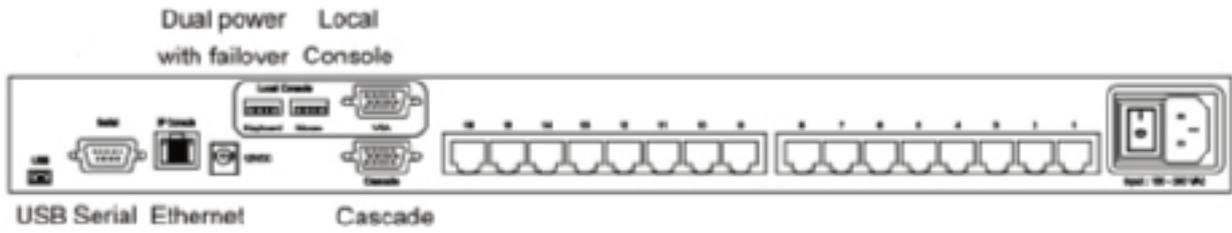
## 2.3 KVT15XAE-UK-IP16/IP32 IP CAT5 KVM

### Package Contents



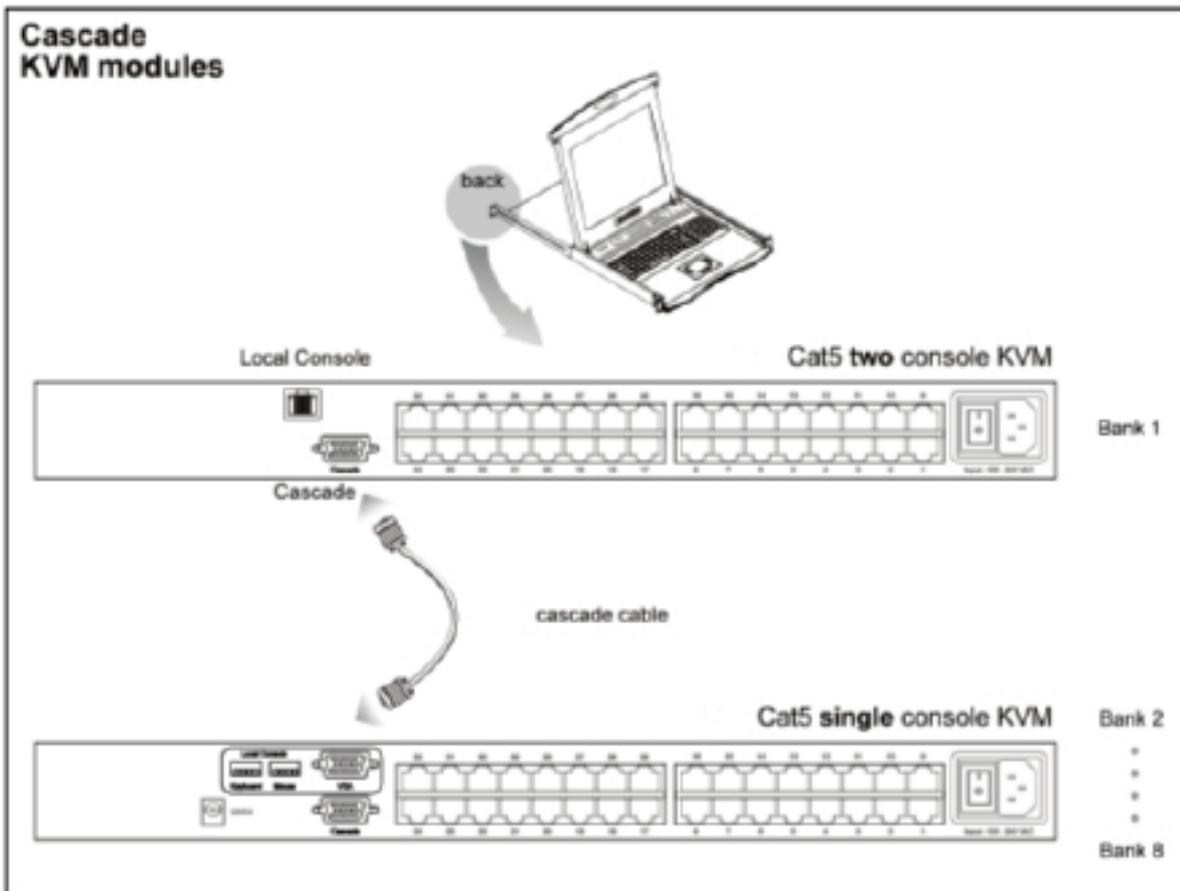
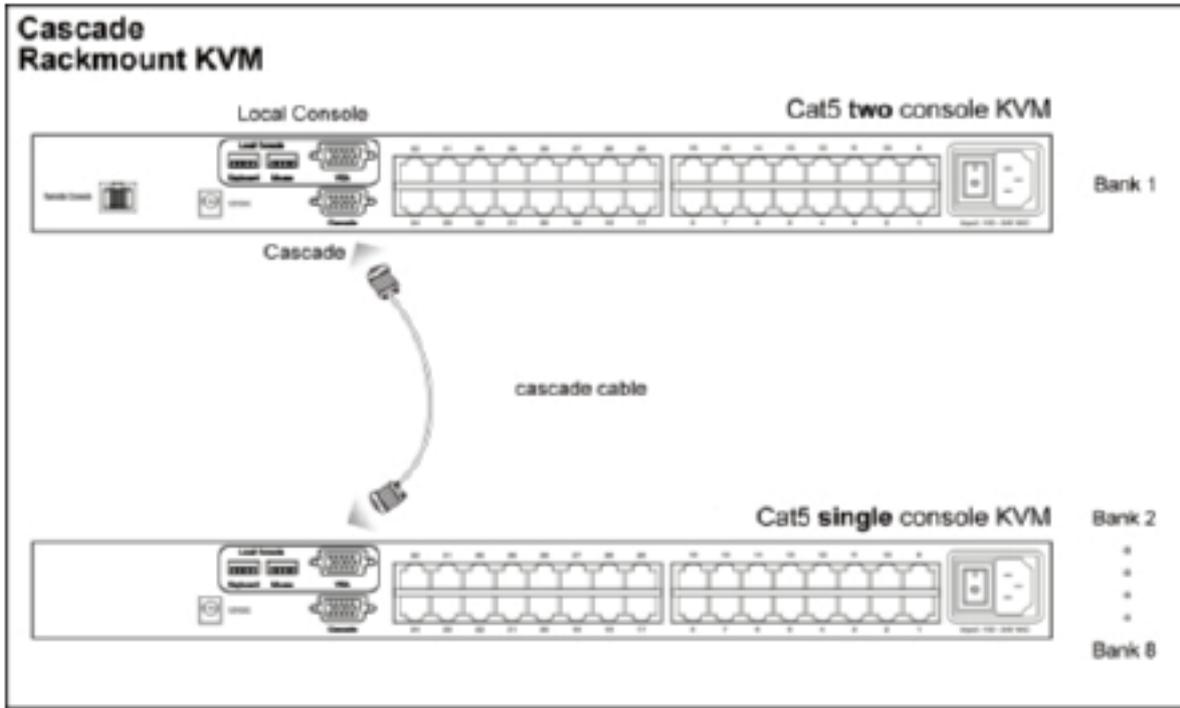
- ① KVM Switch (x1)
- ② Screw M3.2 x 4.5mm (x4)
- ③ Screw M4 x 10mm (x8).
- ④ Bracket Set (x1)
- ⑤ User Manual on CD-ROM (x1)
- ⑥ Power Cord (x1)

Connection



**Cascade**

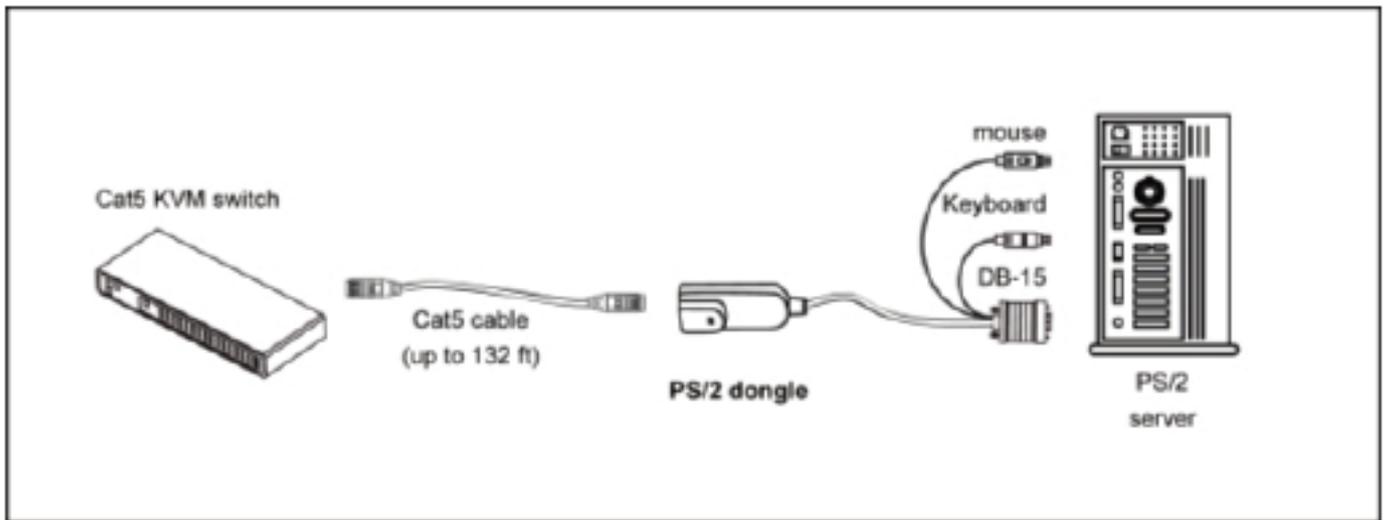
- The cascaded switch (Banks 2 to 8) must be a single console Cat5 KVM (SW151AE-116/132).
- Cascade up to 128 servers with the 16 port IP-KVM and up to 256 with the 32 port.
- Cascade multiple KVM switches using the KVT152A-CASCADE cable.



## 2.4 KVT150A-PS2/USB Connection

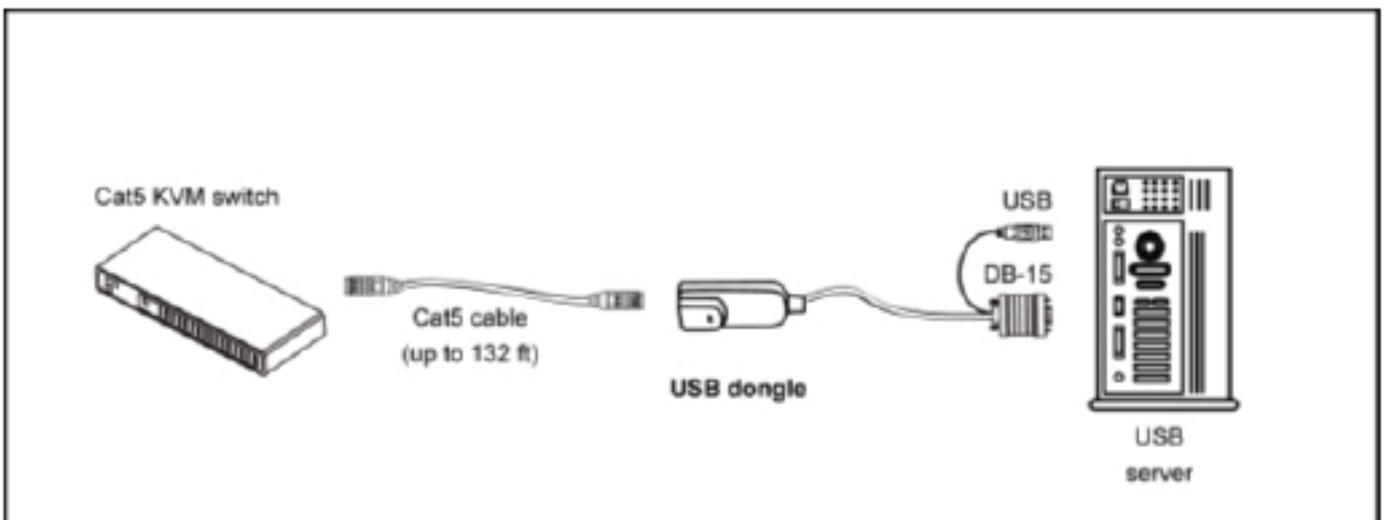
### KVT150A-PS2 PS/2 dongle

- Connect the DB-15 connector to the computer's video card.
- Connect the keyboard connector to the computer's keyboard port.
- Connect the mouse connector to the computer's mouse port.



### KVT150A-USB USB dongle

- Connect the DB-15 connector to the computer's video card.
- Connect the USB connector to the computer's USB port.



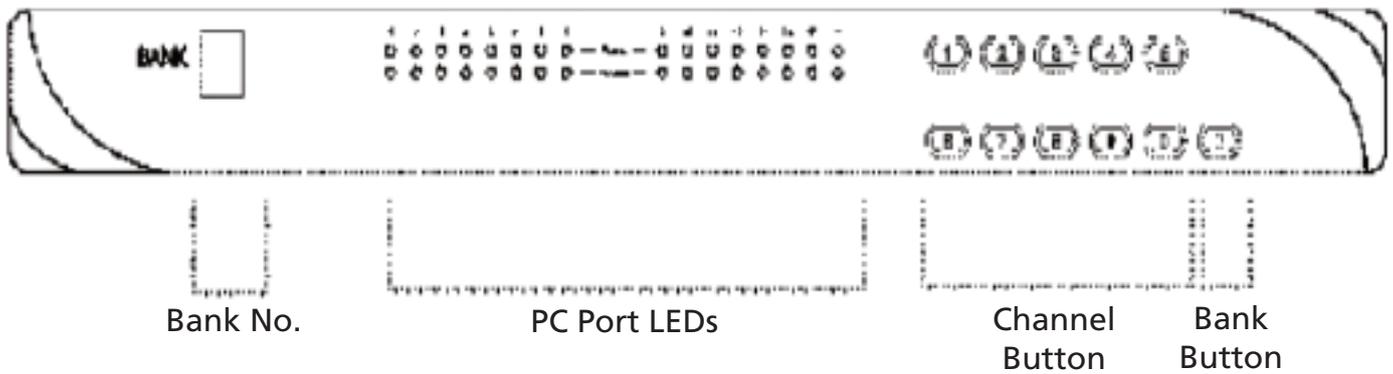
### 3.1 KVM Installation

#### Power ON

- Turn off all servers and KVM switches.
- Make sure all cables / connectors are properly connected.
- The recommended Power ON sequence is monitor, KVM switch, and then finally the computer.

#### Front Panel - Port LED Indications

##### 16 Ports



##### 32 Ports



Bank no.	7-Segment BANK LED indication
PC Port LEDs	<b>Power: Orange</b> LED on indicating a PC is connecting to the port <b>Access: Red</b> LED on indicating a selected channel
Channel Button	Enter to select channel from 01 to 32
Bank Button	Select the bank from 1 to 8

## 3.2 Password

The password is disabled by default (i.e. There is no password required when you power on the KVM switch for the first time)

### ■ Enable password.

1. Enter the KVM hotkey **Scroll Lock + Scroll Lock + U**
2. Logout of the KVM switch by entering the hotkey **Scroll Lock + Scroll Lock + P**
3. In SUPERVISOR level, enter "00000000" eight zeros in the user name & password field  
**(Do not use the "0" on the number pad)**
4. In USER level, enter **Space bar + Enter** in the user name & password field  
Note: Automatic logout after 10 minutes of inactivity

### ■ Set your own user name & password.

1. Login to the KVM switch in SUPERVISOR level by entering "00000000" eight zeros in user name & password field.
2. Call the KVM OSD menu by entering the KVM hotkey **Scroll Lock + Scroll Lock + Space Bar**.
3. Enter F1 to view the MAIN MENU.
4. Select "USER SECURITY".
5. Set password in SUPERVISOR & USER level.
  - a. In the top-left row "S" (SUPERVISOR), press **Enter** to set your own user name & password.
  - b. In the row 1 to 8 (USER), press **Enter** to set your own user name & password.
6. Press **Enter** to save the settings or press **Esc** to cancel without saving.  
Note:
  - a. Blank has an underscore, while SPACE does not.
  - b. Enter any alphanumeric key to move to next input item. SPACE is treated as a valid character.

### ■ Change your password.

1. Login to the KVM switch in SUPERVISOR level by entering your own user name & password.
2. Call the KVM OSD menu by entering the KVM hotkey **Scroll Lock + Scroll Lock + Space Bar**.
3. Press **F1** to view the MAIN MENU.
4. Select "USER SECURITY".
5. Change the password in SUPERVISOR & USER level.
  - a. In the top-left row "S" (SUPERVISOR), press **Enter** to change your user name & password.
  - b. In the row 1 to 8 (USER), press **Enter** to change your user name & password.
6. Press **Enter** to save the setting or press **Esc** to cancel without saving.  
Note:
  - a. Blank has underscore, while SPACE does not.
  - b. Enter any alphanumeric key to move to next input item. SPACE is treated as a valid character.

### ■ Enable password.

1. Enter the KVM hotkey **Scroll Lock + Scroll Lock + U**.
2. Logout of the KVM switch by entering the KVM hotkey **Scroll Lock + Scroll Lock + P**.
3. Following this you will not need a user name & password to access the KVM OSD menu.

### ■ Forget your password.

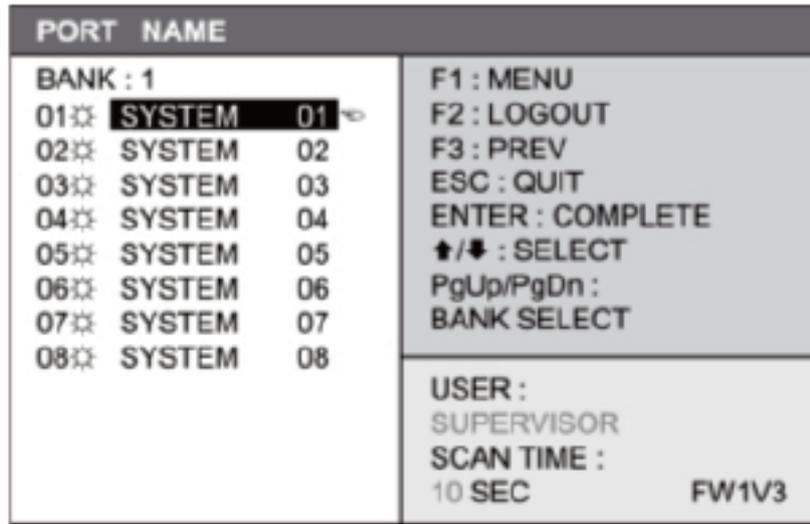
1. Please contact Black Box for further support.

Note:

- You must enter the KVM hotkey within 2 seconds.
- A beep sound will be heard once you have successfully entered the hotkey.

### 3.3 KVM OSD

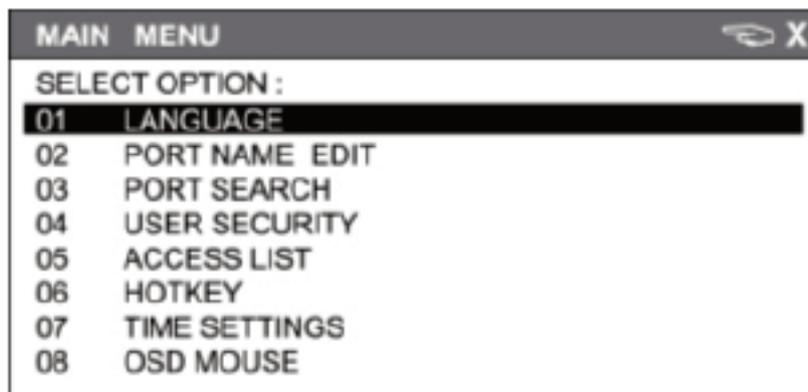
#### OSD Menu



#### OSD operation

 next to the system name	The PC is powered on
 next to the system name	The PC is selected
<b>F1</b>	Access F1 MAIN MENU
<b>F2</b>	Logout the OSD menu
<b>F3</b>	Previous menu
<b>Esc</b>	Cancel/Quit
<b>Enter</b>	Complete/Switch to selected port
	Switch to previous or next port
<b>PageUp/PageDown</b>	SWitch to previous bank or next bank
<b>1/2/3/4</b>	Display port 01-08/09-16/17-24/25-32 Note: Display port 17-32 for 32 port model only

#### F1 Main Menu



<b>01</b>	<b>LANGUAGE</b>	OSD language change
<b>02</b>	<b>PORT NAME EDIT</b>	Define port name
<b>03</b>	<b>PORT SEARCH</b>	Quick searching by port name
<b>04</b>	<b>USER SECURITY</b>	Change password
<b>05</b>	<b>ACCESS LIST</b>	Define user access authority
<b>06</b>	<b>HOTKEY</b>	Change hotkey
<b>07</b>	<b>TIME SETTINGS</b>	Modify scan display time interval
<b>08</b>	<b>OSD MOUSE</b>	Modify OSD mouse speed

## 3.4 KVM Hotkey

### Local Console Hotkey

Hotkey	Function
<b>Scroll Lock + Scroll Lock + Space Bar</b>	Calling OSD menu
<b>Right-button mouse + Esc</b>	Calling OSD menu
<b>Scroll Lock + Scroll Lock +</b>	Switch to previous port
<b>Scroll Lock + Scroll Lock +</b>	Switch to next port
<b>Scroll Lock + Scroll Lock + PgUp/PgDown</b>	Switch to previous bank or next bank
<b>Scroll Lock + Scroll Lock + Bank no. + Port no.</b>	Switch to specific port
<b>Scroll Lock + Scroll Lock + B</b>	Turn the buzzer ON and OFF * Default the buzzer is ON
<b>Scroll Lock + Scroll Lock + P</b>	Logout the KVM if password security is ON. Show up the status windows.
<b>Advanced hotkeys (for Supervisor login only)</b>	
<b>Scroll Lock + Scroll Lock + S</b>	Activate auto-scan mode for connected servers * Enter any key to exit the auto-scan mode
<b>Scroll Lock + Scroll Lock + R</b>	Reset all the KVM settings to factory default *Except User Security settings
<b>Scroll Lock + Scroll Lock + U</b>	Disable and enable password security * Default security is OFF
<b>Scroll Lock + Scroll Lock + L</b>	To enable/disable the screen saving function and 10 minutes auto-logout

#### Example:

- **"Scroll Lock + Scroll Lock + Bank no. + Port no."**
  - Bank no. : 1 to 8
  - Port no. : 01 to 16
  - e.g. Bank 1 Port 4: **Scroll Lock + Scroll Lock + 1 + 0 + 4**
  - e.g. Bank 2 Port 16: **Scroll Lock + Scroll Lock + 2 + 1 + 6**
- You must enter the hotkey within 2 seconds.
- A beep sound will be heard once the hotkey had been successfully entered.
- The numerical keypad is not supported by the OSD. The arrow keys, PgUp, PgDn, and Enter keys are supported.

## Remote Console Hotkey

Hotkey	Function
<b>Caps Lock + Caps Lock + F1</b>	Calls the Help OSD windows
<b>Caps Lock + Caps Lock + F2</b>	Select Hotkey *Default is Caps Lock
<b>Caps Lock + Caps Lock + C</b>	Toggle the switch between remote & local port
<b>Caps Lock + Caps Lock + Q</b>	Turn the buzzer ON & OFF * By default the buzzer is ON
<b>Caps Lock + Caps Lock + S</b>	Activate auto-scan mode for remote & local port * The scan time interval is 5 seconds
<b>Caps Lock + Caps Lock + A</b>	Auto-adjust the video signal

## 3.5 IP Setup

**Note - This chapter refers to IP Switch Versions only**

### Quick Installation

1. Power off all KVM hardware and connected devices.
2. Connect the power supply to the IP KVM switch
3. Connect the monitor, keyboard & mouse to the console port of the IP KVM switch (not applicable to integrated LCD drawer version )
4. Connect the KVM cable to IP KVM switch and target servers
5. Use an Ethernet cable to connect your local area network (LAN) to the IP console port on the KVM

### Initial IP Configuration

By default, DHCP is disabled (IP auto configuration = None), and the IP address is as follows :

**IP address:** 192.168.1.22 (default)  
**Subnet-mask:** 255.255.255.0  
**Default Gateway:** None

#### 1. Configure the IP KVM switch with a fixed address

- a. Set "IP auto configuration" as "None"; set an IP address and Subnet mask
- b. Enter the Super user login and password for Authentication (default : super/pass)
- c. Setup Device. If the super login was authenticated, it will show "Successfully configured device". Otherwise it will show "Permission Denied".

#### 2. Configure the IP KVM with DHCP

- a. Set "IP auto configuration" as "DHCP"
- b. Enter the Super user login and password for Authentication (default : super/pass)
- c. Setup Device. If the super login was authenticated, it will show "Successfully configured device". Otherwise it will show "Permission Denied".

#### 3. Install JVM on Client system

The IP-KVM switch is remotely accessed by a standard JAVA enabled web browser. The client system must install Sun JVM 1.4.2 or above for remote access the IP KVM.

#### Note:

- As a minimum, you must have Internet Explorer 6.0, Netscape 7.0 or Mozilla 1.6 (or above) installed on your client computer.

## 4.1 IP Remote Setup

**Note - This chapter refers to IP Switch Versions only**

### Remote Mouse Settings

A common problem with KVM devices is the synchronization between the local and remote mouse cursors. This IP KVM switch addresses this situation with an intelligent synchronization algorithm. There are two mouse modes available.

#### Auto mouse speed

Automatic mouse speed mode tries to detect the speed and acceleration settings of the host system automatically. See the section below for a more detailed explanation.

#### Fixed mouse speed

This mode just translates the mouse movements from the Remote Console so that a single pixel move will lead to n pixel movement on the remote system. The parameter 'n' is adjustable with the scaling. It should be noted that this only works when mouse acceleration is turned off on the remote system.

#### Auto mouse speed and mouse synchronisation

Automatic mouse speed mode performs the speed detection during mouse synchronization. In the event that the mouse does not move correctly there are two ways for re-synchronizing the local and remote mouse:

##### Fast Sync

Fast synchronization is used to correct a temporary but fixed skew. Select this option using the Remote Console options menu or enter the mouse synchronization hotkey sequence if you have defined one.

##### Intelligent Sync

If fast sync does not work or the mouse settings have been changed on the host system, use the intelligent resynchronization. This method takes more time and can be accessed with the appropriate item in the Remote Console option menu. The intelligent synchronisation requires a correctly adjusted picture. Use the auto adjustment function or the manual correction in the Video Settings panel to set up the picture. The Sync mouse button at the top of the Remote Console will behave differently depending on the current state of mouse synchronization. Clicking this button leads to a fast sync except where the KVM port or the video mode have been changed recently.

**Note:** Adjust the video before synchronising the mouse for the first time

## Host system mouse settings

**Note:** The following limitations do not apply to USB mice

While the IP-KVM switch works with accelerated mice and is able to synchronize the local with the remote mouse pointer, there are the following limitations which may prevent this synchronization from working correctly:

### Special Mouse Driver

There are mouse drivers which influence the synchronization process and lead to desynchronized mouse pointers. If you have mouse problems ensure you are not using a special vendor-specific mouse driver on your host system.

### Windows XP Mouse Settings

Windows XP has an "improve mouse acceleration" setting which has to be deactivated.

### Active Desktop

If the Active Desktop feature of Microsoft Windows is enabled do not use a plain background. Use some kind of wallpaper. As an alternative, you could also disable the Active Desktop completely.

Navigate your mouse pointer into the upper left corner of the applet screen and move it backwards and forwards slightly. This will resynchronize the mouse. If re-synchronizing fails, disable the mouse acceleration and repeat the procedure.

### Single and Double Mouse Mode

The information above applies to Double Mouse Mode, where local and remote mouse pointers are visible and need to be synchronized. The IP-KVM switch also features Single Mouse Mode, where only the remote mouse pointer is visible. Activate this mode in the open Remote Console and click in the window area. The local mouse pointer will be hidden and the remote mouse can be controlled directly. To exit this mode you must have defined a mouse hotkey in the Remote Console Settings Panel. Enter this key to free the captured local mouse pointer.

### Recommended Mouse Settings

#### **MS Windows 2000/2003 (Professional and Server), XP**

In general, we recommend using a USB mouse. Choose USB without Mouse Sync. For a PS/2 mouse choose 'Auto Mouse Speed'. For XP disable the option 'enhance pointer precision' in Control Panel.

#### **SUN Solaris**

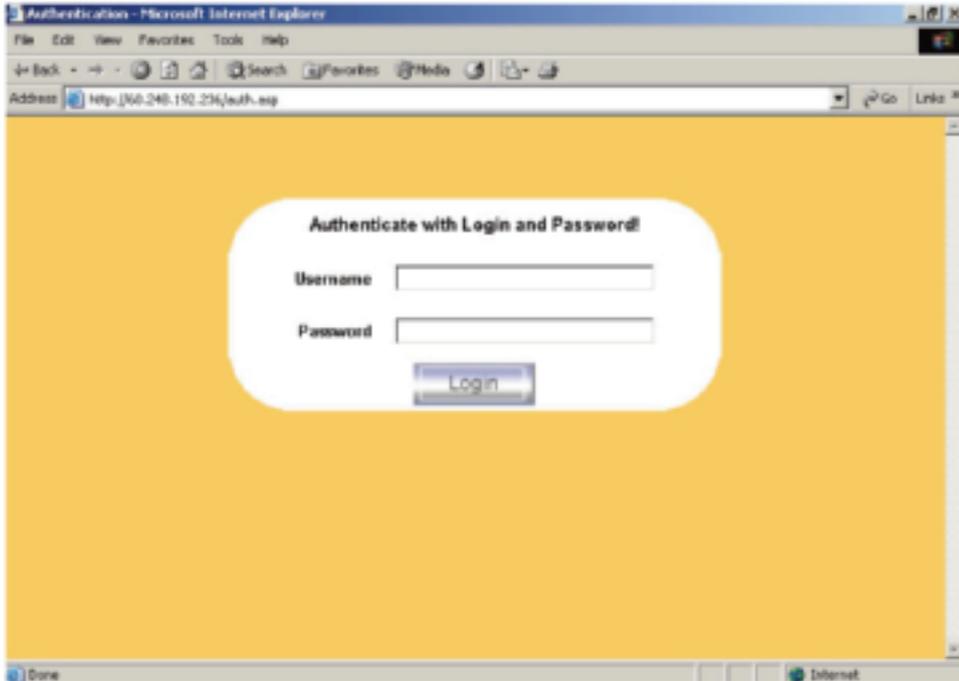
Adjust the mouse settings either via 'xset m 1' or use the 'CDE Control Pane'l to set the mouse to '1:1, no acceleration'. As an alternative you may also use the Single Mouse Mode.

#### **MAC OS X**

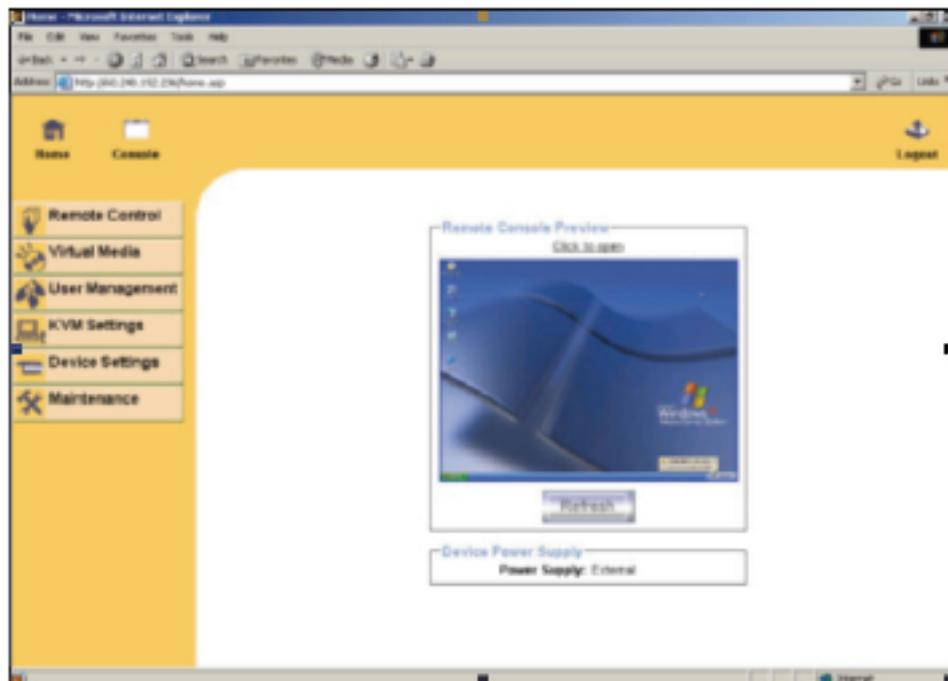
We recommend using the Single Mouse Mode.

## 4.2 Remote Access

Use HTTP or HTTPS and enter the IP address of the IP KVM switch into your web browser. The login page will be shown as below. Enter the default user name & password.



You will enter the main page of IP KVM switch as below:

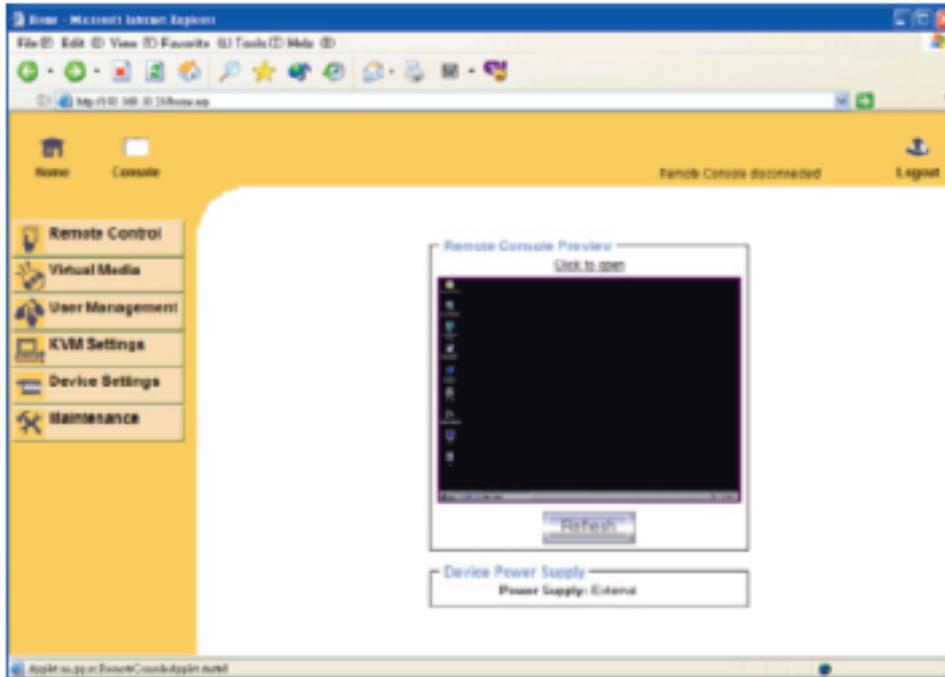


**Note:**

- We strongly recommend changing the default user name and password.

## Navigation

Having logged into the IP-KVM switch successfully, the main page of the IP-KVM switch will appear. This page consists of three parts. The buttons at the top allow you to navigate within the front end. The navigation bar at the left allows you to switch between the different sections of the IP-KVM switch. To the right task-specific information is displayed.



**Return to the main page**



**Open the remote console**



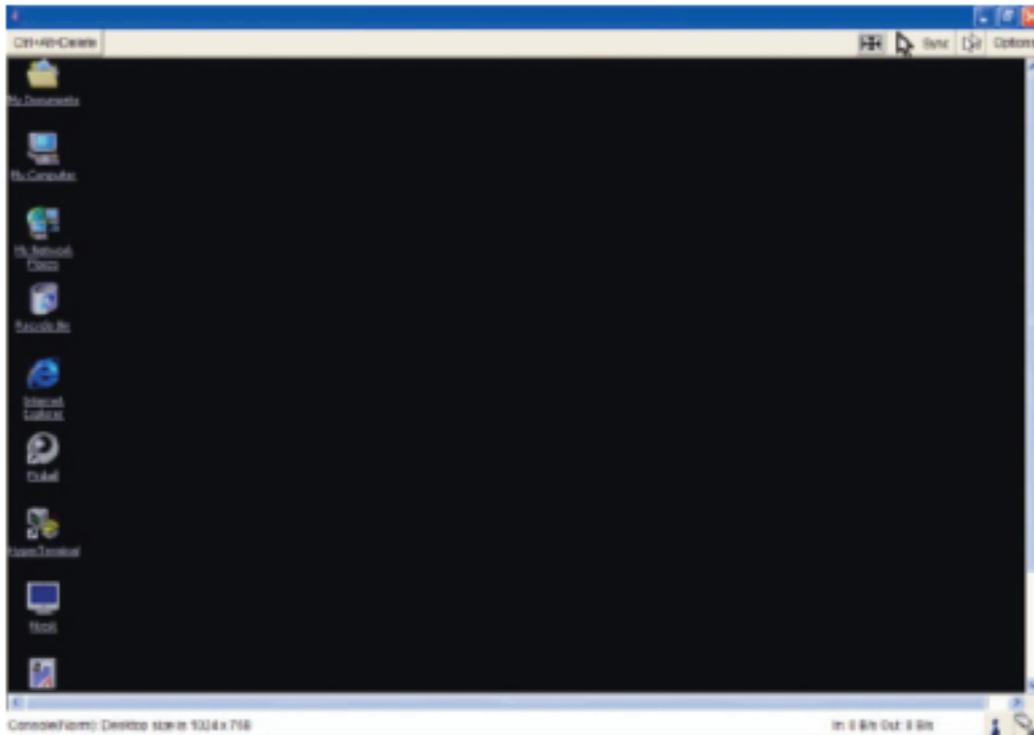
**Exit from the switch front end**

**Note:** An automatic logout will be performed if there is no activity for half an hour.

## 4.3 The Remote Console

### General Description

The Remote Console is the redirected screen, keyboard and mouse of the remote host system that IP-KVM switch controls.



The Remote Console window is a Java Applet that tries to establish its own TCP connection to the IP-KVM switch. The protocol for this connection is neither HTTP nor HTTPS, but RFB (Remote Frame Buffer Protocol). RFB tries to establish a connection to port number 443. Your local network environment must allow this connection to be made, i.e. your firewall and, if you have a private internal network, your NAT (Network Address Translation) settings have to be configured accordingly.

### Main Window

Starting the Remote Console opens an additional window that displays the screen content of your host system. The Remote Console will behave in exactly as if you were sitting directly in front of the screen of your remote system. That means that the keyboard and mouse can be used in the usual way. However, be aware that the remote system will react to keyboard and mouse actions with a slight delay. The delay depends on the bandwidth of the line you are using to connect to the IP-KVM switch.

When using the keyboard, this very exact remote representation might lead to some confusion as your local keyboard will change its keyboard layout according to the remote host system. For instance, if you use a German administration system and your host system uses a US English keyboard layout, special keys on the German keyboard will not work as expected. Instead, the keys will result in their US English counterpart. You can circumvent such problems by adjusting the keyboard of your remote system to the same mapping as your local one.

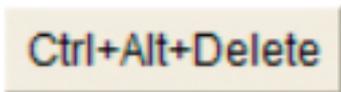
The Remote Console window always tries to show the remote screen at its optimal size. It will adapt its size to the size of the remote screen initially and after the screen resolution of the remote screen has been changed. However, you can always resize the Remote Console window in your local window system manually.

## Remote Console Control Bar

The upper part of the Remote Console window contains a control bar. A description for each control follows.



Remote Console Control Bar



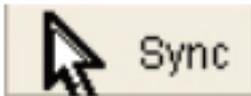
Ctrl+Alt+Delete

Special button to send the "Control Alt Delete" key combination to the remote system.



Auto Adjust button

If the displayed video is poor or distorted in some way, use this button and wait a few seconds while the IP-KVM switch tries to adjust itself for the best possible video quality.



Sync mouse

Activates the mouse synchronisation process. Choose this option in order to synchronise the local with the remote mouse cursor.



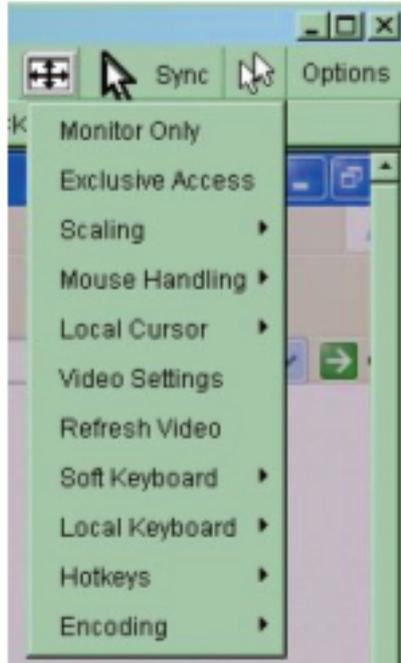
Single/Double mouse mode

Switches between Single Mouse Mode (where only the remote mouse pointer is visible) and Double Mouse Mode (where both local and remote mouse pointers are visible and need to be synchronised). Single mouse mode is only available if using SUN JVM 1.3 or higher.

Options

Options

To open the Options menu, click on the "Options" button.



**Remote Console Options Menu**

A short description of the options follows:

■ **Monitor Only**

Toggles the "Monitor Only" filter on or off. If the filter is switched on, no remote console interaction is possible and the connection is view only

■ **Exclusive Access**

If a user has the appropriate premissions, he can force the Remote Consoles of all other users to close. No other user will be able to open a remote console until this user disables the exclusive access, or logs off.

A change in the access mode is also visible in the status line:



■ **Scaling**

Allows you to scale down the Remote Console. You can still use both the mouse and the keyboard, however the scaling algorithm will not preserve all display details.



■ **Mouse Handling**

The submenu for mouse handling offers two options for synchronising the local and the remote mouse pointer.

Fast Sync --

The fast synchronisation is used to correct a temporary, but fixed skew.

Intelligent Sync --

Use this option if the fast sync does not work or the mouse settings have been changed on the host system.

■ **Local Cursor**

Offers a list of different cursor shapes to choose from for the local mouse pointer. The selected shape will be saved for the current user and activated the next time this user opens the Remote Console. The number of available shapes depends on the Java Virtual Machine; a version of 1.2 or higher offers the full list.



**Remote Console Options Menu: Cursor**

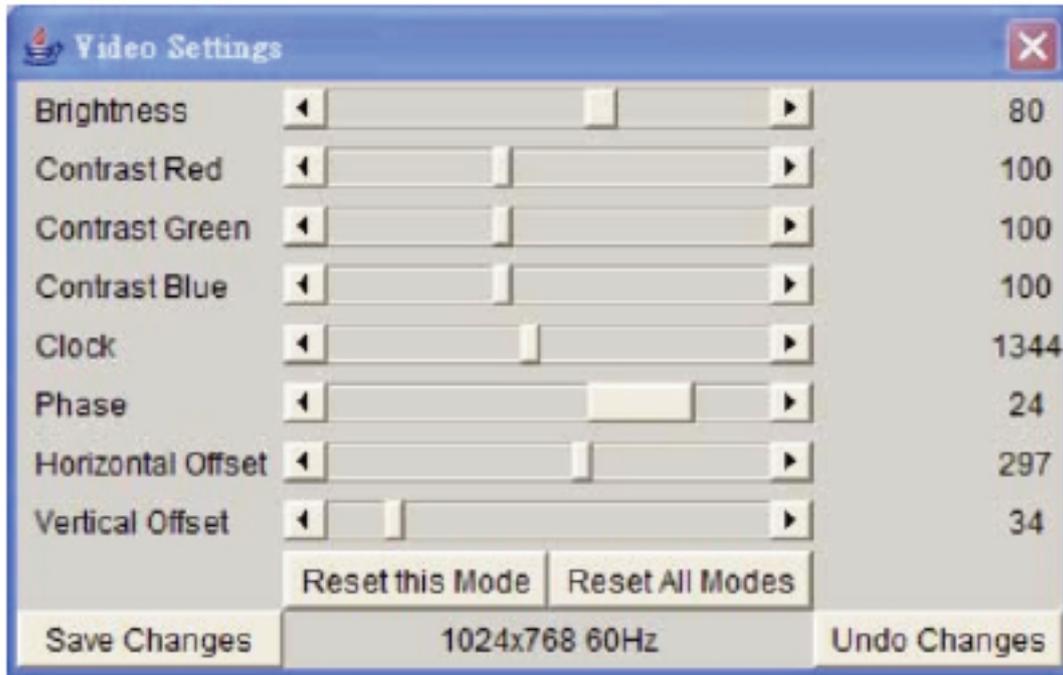
■ **Video Settings**

Opens a panel for changing the switch's video settings.

**Video Settings through the HTML-Front-End**

To enable the local video port, select this option. This option determines whether the local video output of the IP-KVM switch is active and passing through the incoming signal from the host system.

The 'Noise Filter' option defines how the switch reacts to small changes in the video input signal. A large filter setting needs less network traffic and leads to a faster video display, but small changes in some display regions may not be recognized immediately. A small filter displays all changes instantly but may lead to a constant amount of network traffic even if the display content is not really changing (depending on the quality of the video input signal). The default setting should be suitable for most situations.



**Video Settings Panel**

- **Brightness**  
Controls the brightness of the picture.
- **Contrast**  
Controls the contrast of the picture.
- **Clock**  
Defines the horizontal frequency. Different video card types may require different values here. The default settings set by the auto adjustment procedure should be adequate for all common configurations. If the picture quality is still bad after auto adjustment you can change this setting together with the sampling phase to achieve a better quality.
- **Phase**  
Defines the phase for video sampling, used to control the display quality together with the setting for clock sampling.
- **Horizontal Position**  
Use the left and right buttons to move the picture in a horizontal direction while this option is selected.
- **Vertical Position**  
Use the left and right buttons to move the picture in a vertical direction while this option is selected.
- **Reset this Mode**  
Reset mode specific settings to the factory defaults.
- **Reset all Modes**  
Reset all settings to the factory defaults.

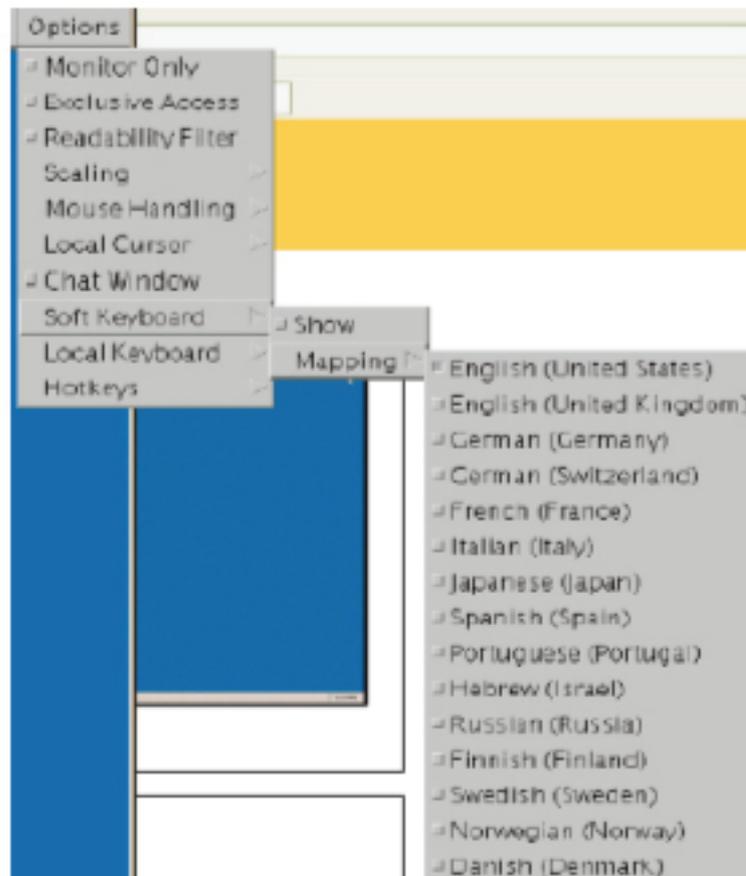
- **Save Changes**  
Save changes permanently.
- **Undo Changes**  
Restore last settings.
- **Soft Keyboard**



**Soft Keyboard**

**Opens up the Menu for the Soft-Keyboard**

- **Show**  
Shows the Soft-Keyboard. The Soft-Keyboard is necessary if your host system runs a completely different language and country mapping from your administration machine.
- **Mapping**  
Used for choosing the correct language and country mapping of the Soft-Keyboard.



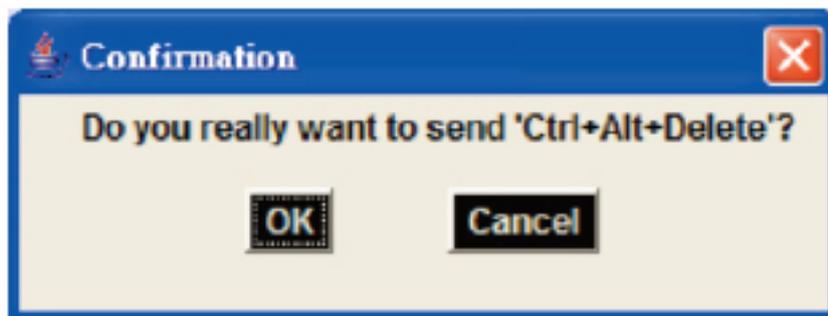
■ **Local Keyboard**

Used to change the language mapping of your browser machine running the Remote Console Applet. Normally, the applet determines the correct value automatically. However, depending on your particular JVM and your browser settings this is not always possible. A typical example is a German localized system that uses an US-English keyboard mapping. In this case you have to change the Local Keyboard setting to the right language manually.

■ **Hotkeys**

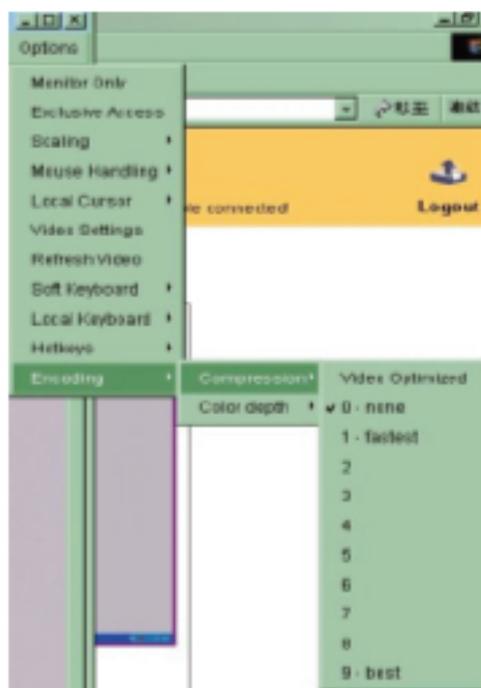
Opens a list of predefined hotkeys. Select a hotkey and it will be send to the target computer.

A confirmation dialog can be added that will be displayed before sending the selected command to the remote host. Select "OK" to perform the command on the remote host.



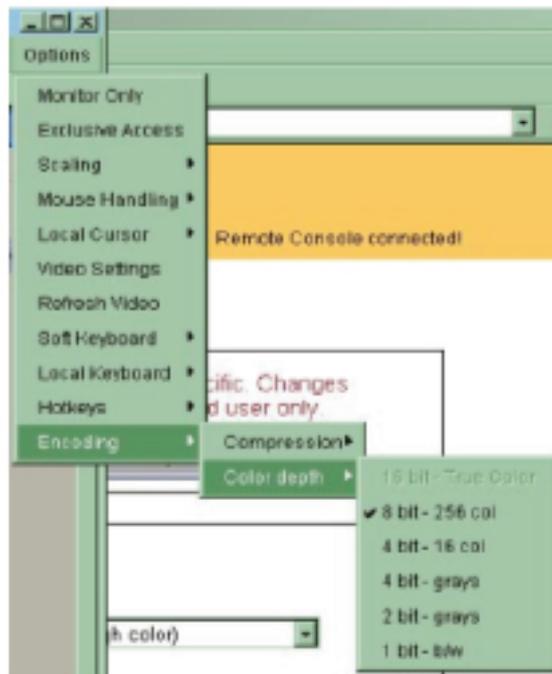
**Remote Console Confirmation Dialog**

**Encoding**



**Encoding**

Allows you to adjust both compression rate and the colour depth individually. High compression rates save bandwidth but are time consuming so should not be used if more than one user is accessing the switch at the same time.



The standard color depth is 16 Bit (65536 colors). The other colour depths are intended for slower network connections in order to allow a faster transmission of data. Only compression level 0 (no compression) uses 16 Bit color depth. At lower bandwidths 4 Bit (16 colors) and 2 Bit (4 gray scales) are recommended for typical desktop interfaces. Photo-like pictures have best results with 4 Bit (16 gray scales). 1 Bit color depth (black/white) should only be used for extremely slow network connections.

**Remote Console Status Line**



**Status Line**

Shows both the console and the connection state. The size of the remote screen is displayed. The value in brackets describes the connection to the Remote Console. "Norm" means a standard connection without encryption, "SSL" indicates a secure connection.

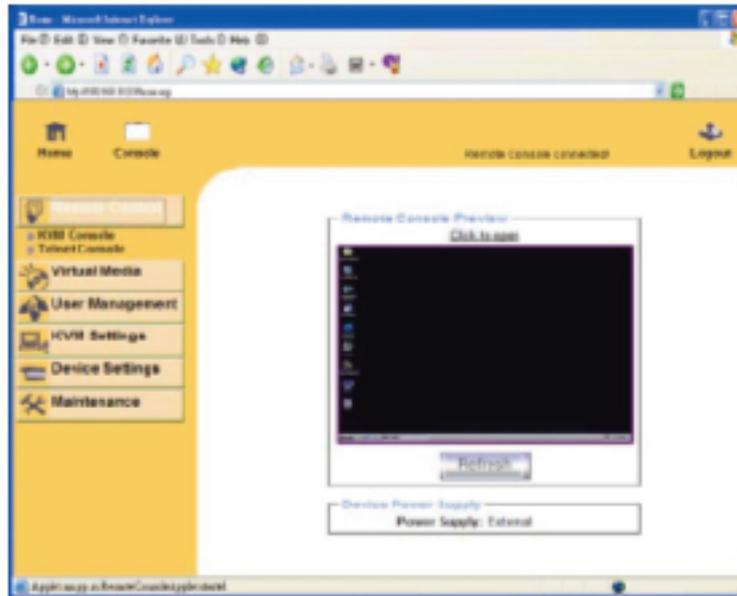
**In: 0 B/s Out: 0 B/s**

**Status line transfer rate**

In addition both the incoming ("In:") and the outgoing ("Out:") network traffic are shown (in kb/s). If compression is enabled, a value in brackets displays the compressed transfer rate

## 4.4 Remote Control

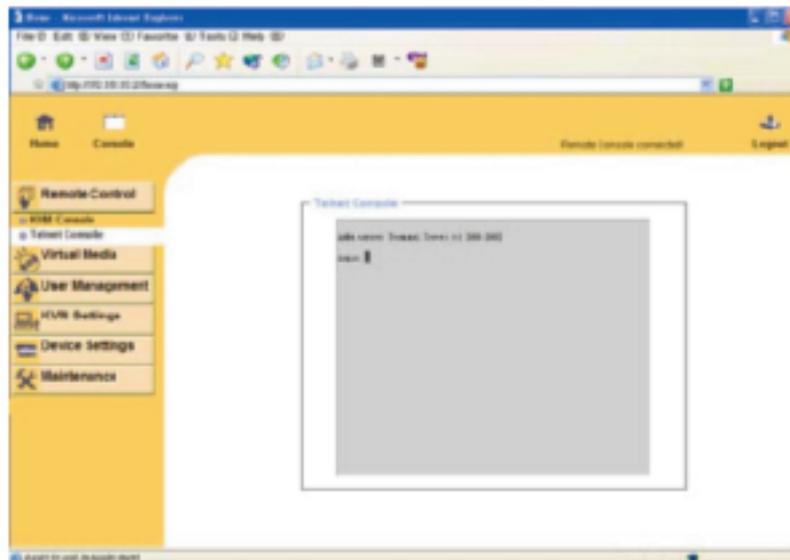
### KVM Console



**KVM Console**

To open the KVM console, either click on the menu entry on the left, or on the console picture on the right. To refresh the picture, click on the "Refresh" Button.

### Telnet



The switch features a Telnet server that enables a user to connect via a standard Telnet client. If the Telnet program is using a VT100, VT102 or VT220 terminal or a similar emulation, it is even possible to perform a console redirection as long as the host machine is using a text mode screen resolution. Connect as required by the Telnet client, for instance in a UNIX shell:

```
telnet 192.168.1.22
```

The switch will prompt for a username and password. This is the same as the password for the web interface.

Once you have successfully logged into the switch a command line will be presented and you can enter management commands.

The Telnet interface supports two operation modes: the command line mode and the terminal mode. The command line mode is used to control or display configuration parameters. In terminal mode pass-through access to serial port one is activated. All inputs are redirected to the device on serial port one and its responses are displayed on the Telnet interface.

The following list shows the command mode command syntax

**help**

Displays the list of possible commands

**cls**

Clears the screen

**quit**

Exits the current session and disconnects from the client

**version**

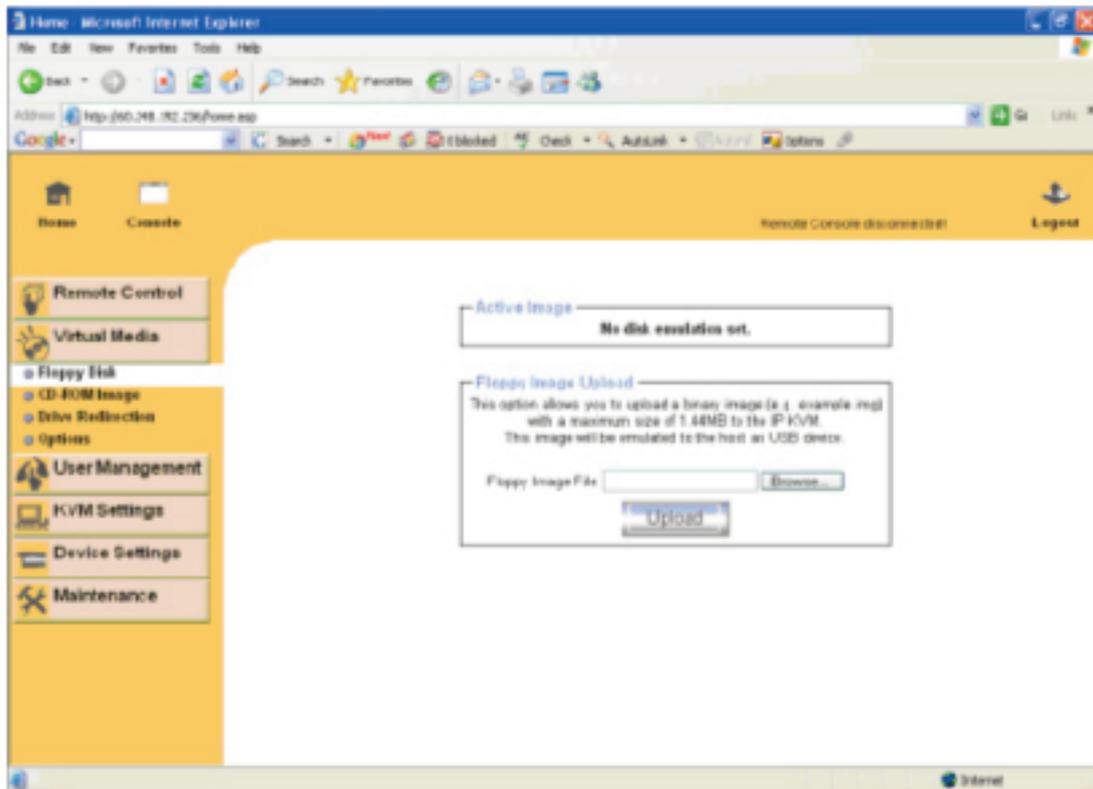
Displays the release information

**terminal**

Starts terminal pass-through mode for serial port one. The key sequence 'esc' 'exit' switches back to command mode. This command has an optional parameter (1 or 2) to select the desired serial port for pass-through access.

## 4.5 Virtual Media

### Floppy Disk



**Virtual Floppy Area**

### Upload a Floppy Image

This is a two step process;

- Click the "Browse" button and select the image file



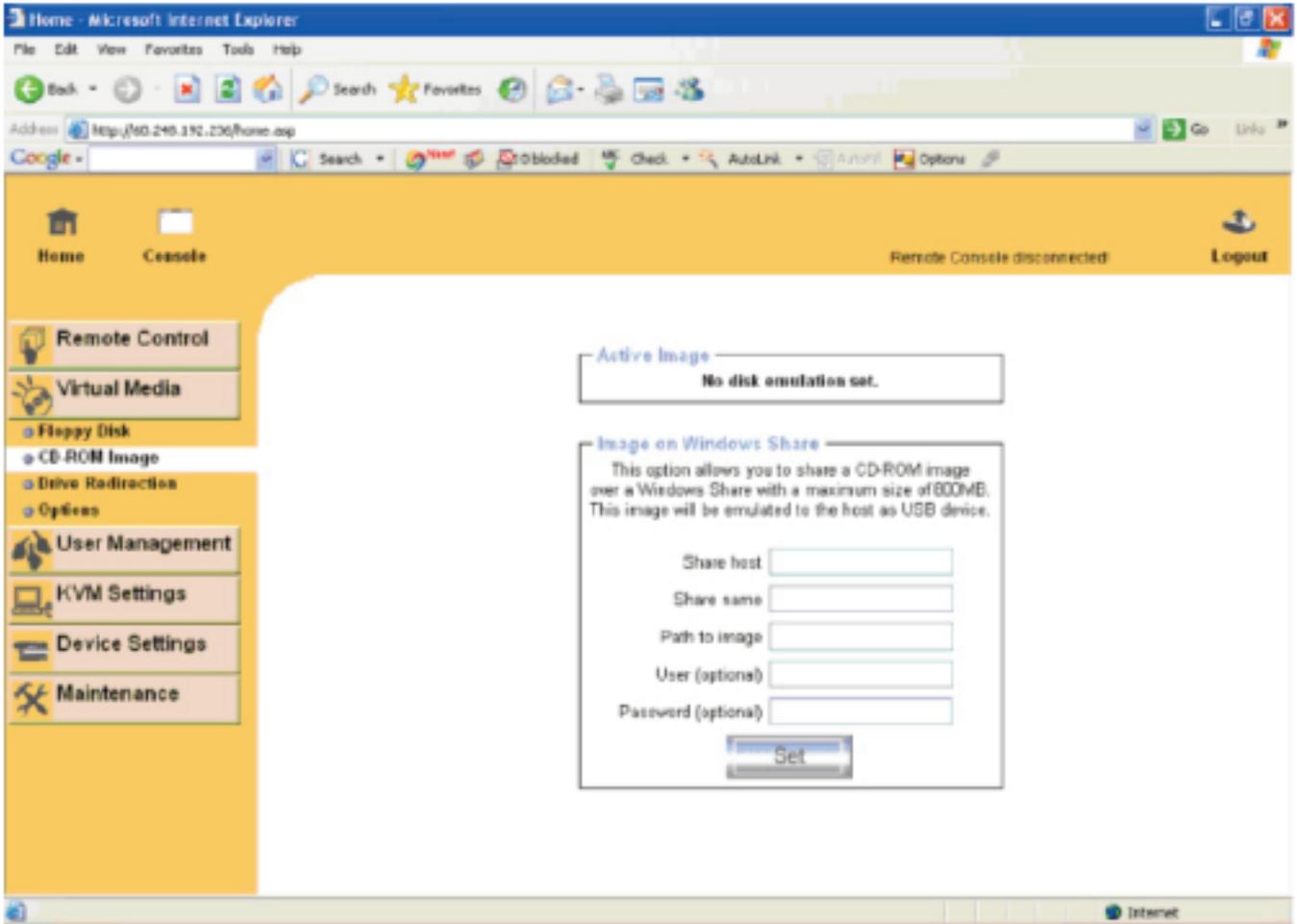
The maximum image size is limited to 1.44MB.

Click the "Upload" button to upload the chosen image file into the IP-KVM switch's onboard memory. This image file is kept in the onboard memory of the IP-KVM switch until the user logs out or reboots the switch.

**CD-ROM Image**

**Use an Image on a Windows Share (SAMBA)**

To include an image from a Windows share, select "CD-ROM" from the submenu.



**Selecting CD ROM**

**Image on Windows Share**

Share host

Share name

Path to image

User (optional)

Password (optional)

**Select Windows Share**

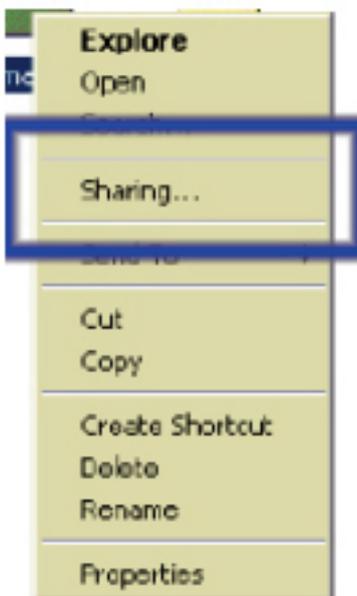
The following information has to be given to mount the image properly:

<b>Share host</b>	The server name or IP address
<b>Share name</b>	The name of the share to be used
<b>Path to image</b>	The name of the image file on the share
<b>User (optional)</b>	If necessary, specify the user name for the share If unspecified and a guest account is activated this guest account will be used as your login.
<b>Password (optional)</b>	If necessary, specify the password for the given user name. To register the specified file image and its location click on "Set" button.

The specified image file must be accessible from the IP-KVM switch and the correct IP address and device names must be given. Otherwise the IP-KVM switch will not be able to access the referenced image file. Also, the specified share must be configured correctly. Administrative permissions will be required. You should either login as a system administrator (or as "root" on UNIX systems), or ask your system administrator for help to complete this task.

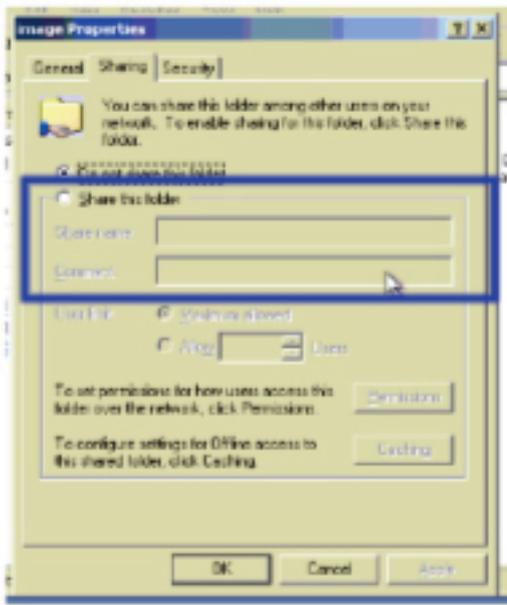
**Windows 2000/XP**

Open the Explorer, navigate to the directory (or share), and press the right mouse button to open the context menu.



**Explorer Context menu**

Select "Sharing" to open the configuration dialogue.



**Share configuration dialogue**

## Adjust the settings for the selected directory

- **Activate the selected directory as a share. Select "Sharing this folder".**
- **Choose an appropriate name for the share. You may also add a short description for the folder (using the "Comment" field).**
- **If necessary, adjust the permissions (using the "permissions" button).**
- **Click "OK" to set the options for this share.**

## UNIX and UNIX-like OS (Sun Solaris, and Linux)

If you need to access the share via SAMBA, it must be correctly configured. You may either edit the SAMBA configuration file `/etc/samba/smb.conf`, or use the Samba Web Administration Tool (SWAT) or WebMin to set the correct parameters.

## Creating an image

### Floppy Images

#### **UNIX and UNIX-like OS**

To create an image file, make use of "dd". This is one of the original UNIX utilities and is included in every UNIX-like OS (UNIX, Sun Solaris, and Linux).

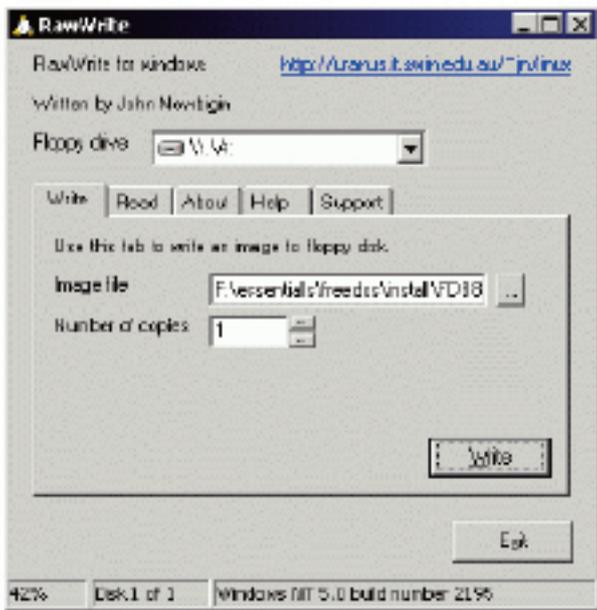
To create a floppy image file, copy the contents of a floppy to a file. You can use the following command:

```
dd [ if=/dev/fd0 ] [ of=/tmp/floppy.image ]
```

dd reads the entire disc from the device `/dev/fd0`, and saves the output to the specified output file `/tmp/floppy.image`. Adjust both parameters to your own values (input device etc.)

#### **MS Windows**

You can use the tool "Raw Write for Windows". It is included on the CD ROM shipped with IP-KVM switch.



### Share configuration dialogue

From the menu, select the “Read” tab. Enter (or choose) the name of the file in which you would like to save the floppy content. Click on the “Copy” button to initiate the image creation process.

For related tools visit [www.fdos.org](http://www.fdos.org) 1.

## CD-ROM/ISO Images

### Unix and Unix-like OS

To create an image file, make use of “dd”. This is one of the original UNIX utilities and is included in every UNIX-like OS (UNIX, Sun Solaris, and Linux).

To create a CDROM image file, copy the contents of the CDROM to a file. You can use the following command:

```
dd [ if=/dev/cdrom ] [ of=/tmp/cdrom.image ]
```

dd reads the entire disc from the device /dev/cdrom, and saves the output to the specified output file /tmp/cdrom.image. Adjust both parameters to your own values (input device etc.).

### MS Windows

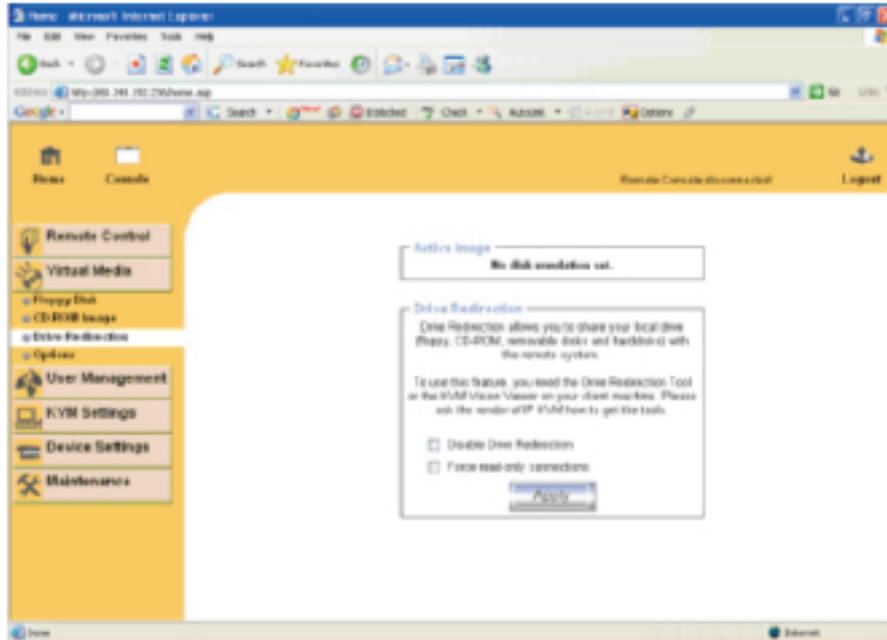
To create the image file, use your favorite CD imaging tool. Copy the whole contents of the disc into one single image file on your hard disk.

For example, with “Nero” you choose “Copy and Backup”. Then, navigate to the “Copy Disc” section. Select the CD ROM or DVD drive you would like to create an image from. Specify the filename of the image, and save the CD ROM content in that file.



**Nero selection dialogue**

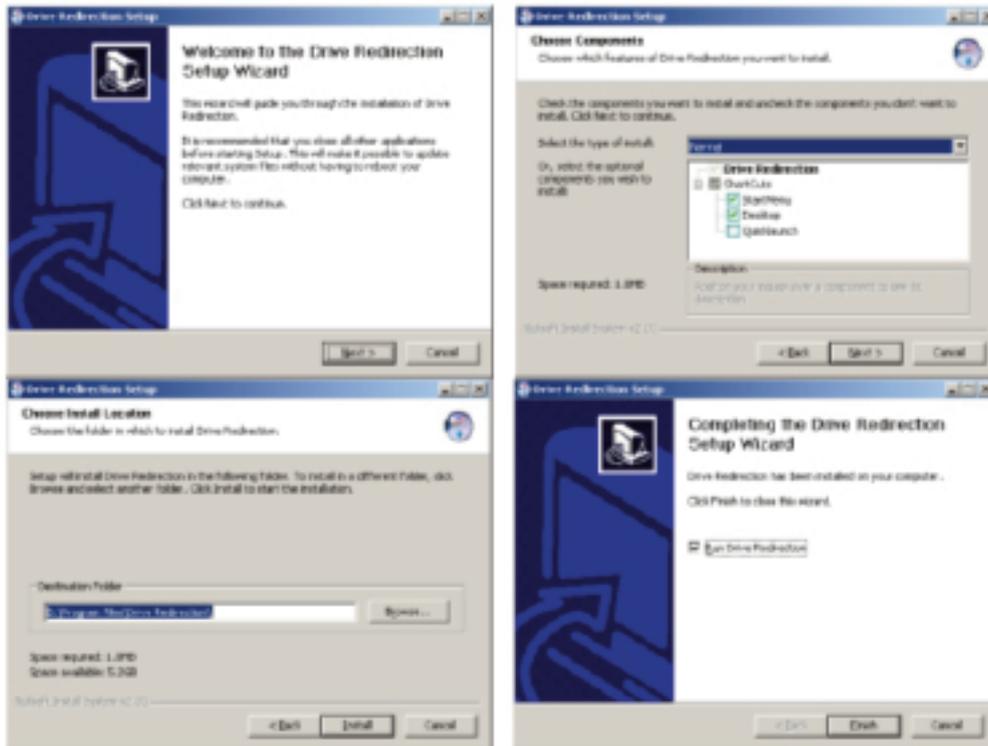
## Drive redirection



**Options of Drive Redirection**

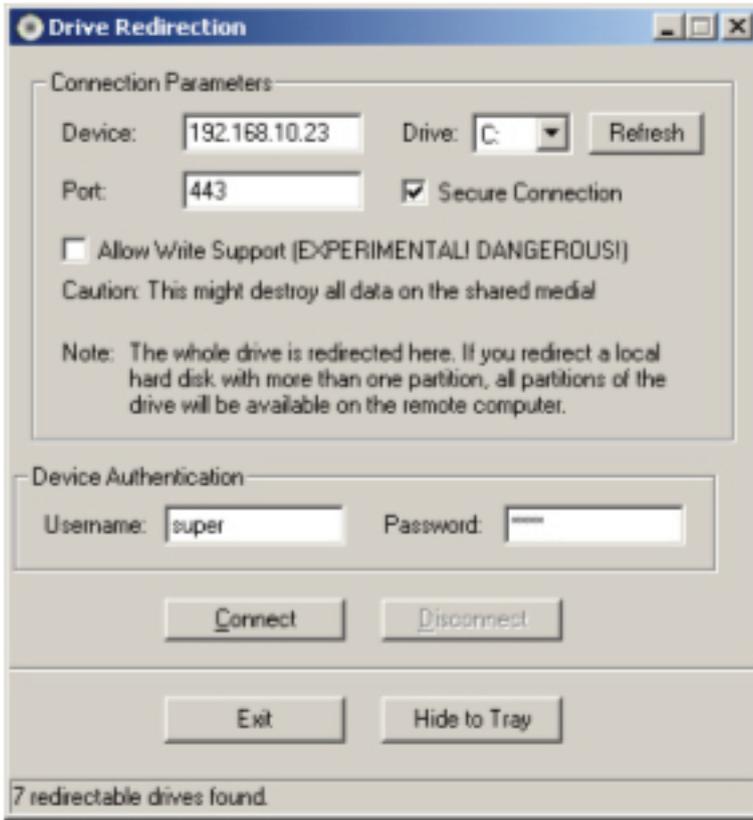
## Drive installation

Please follow the Drive Redirection Setup Wizard step by step to install the driver from the attached CD ROM.



**Drive redirection setup**

## Drive Redirection Settings



### Drive Redirection Settings

#### Drive to redirect

- Device:** IP of IP-KVM switch
- Drive:** The local drive you want to share with the remote computer  
This could be floppy disc, CD-ROMs, USB-Sticks and hard drives.
- Port:** This is a fixed number "443".

#### Warning

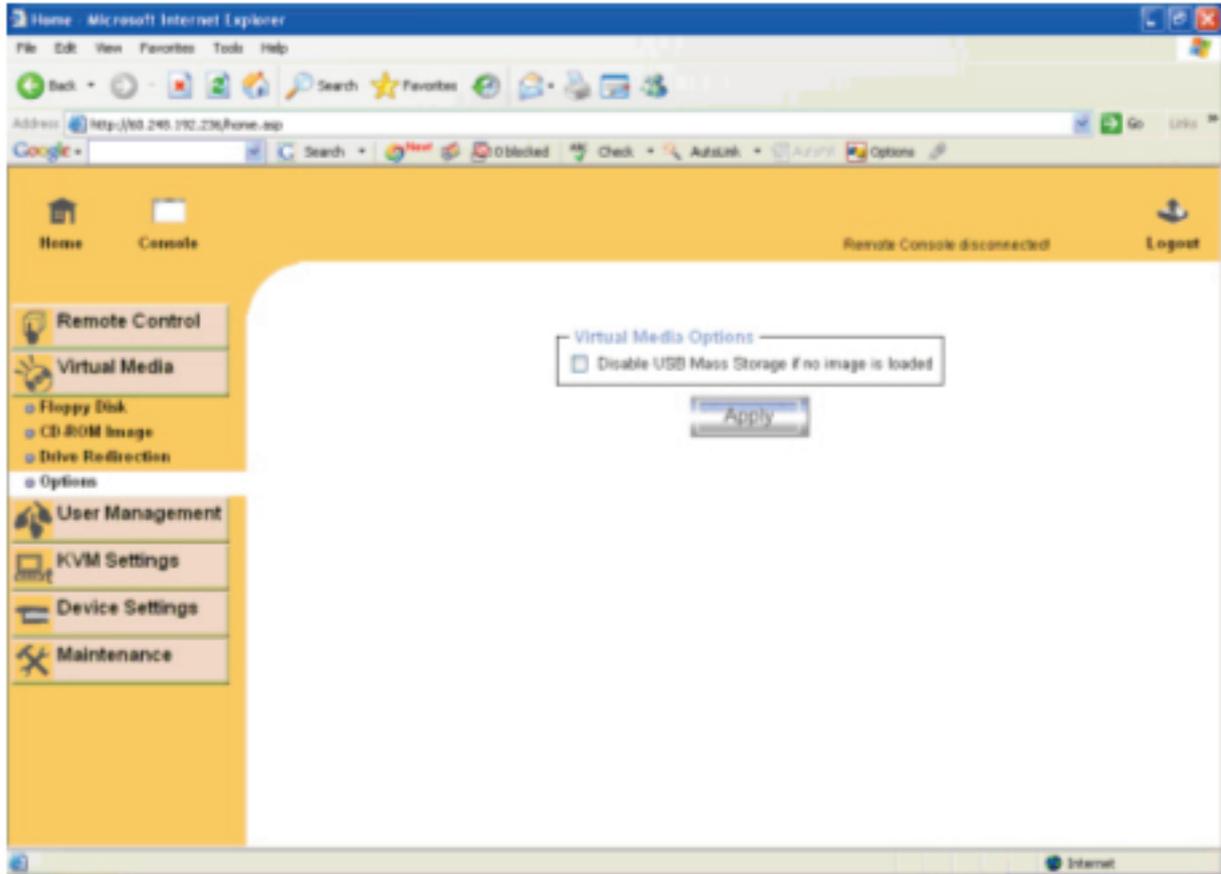
Please be cautious that if "Allow Write Support" is selected, data on the shared media could be destroyed.

**Device Authentication** The factory default Username is "super" and the default Password is "pass". Click Connect to redirect drive

#### Warning

1. Drive Redirection is only possible with Windows 2000 and above .
2. The Drive Redirection works on a low SCSI level and the SCSI protocol does not recognize partitions; therefore the whole drive selected will be shared instead of a specific partition.
3. While connecting to a legacy KVM switch, please select PS/2 mouse for the keyboard/ Mouse setting from the webpage. Otherwise you will not be able to use Hot-key.

**Options**



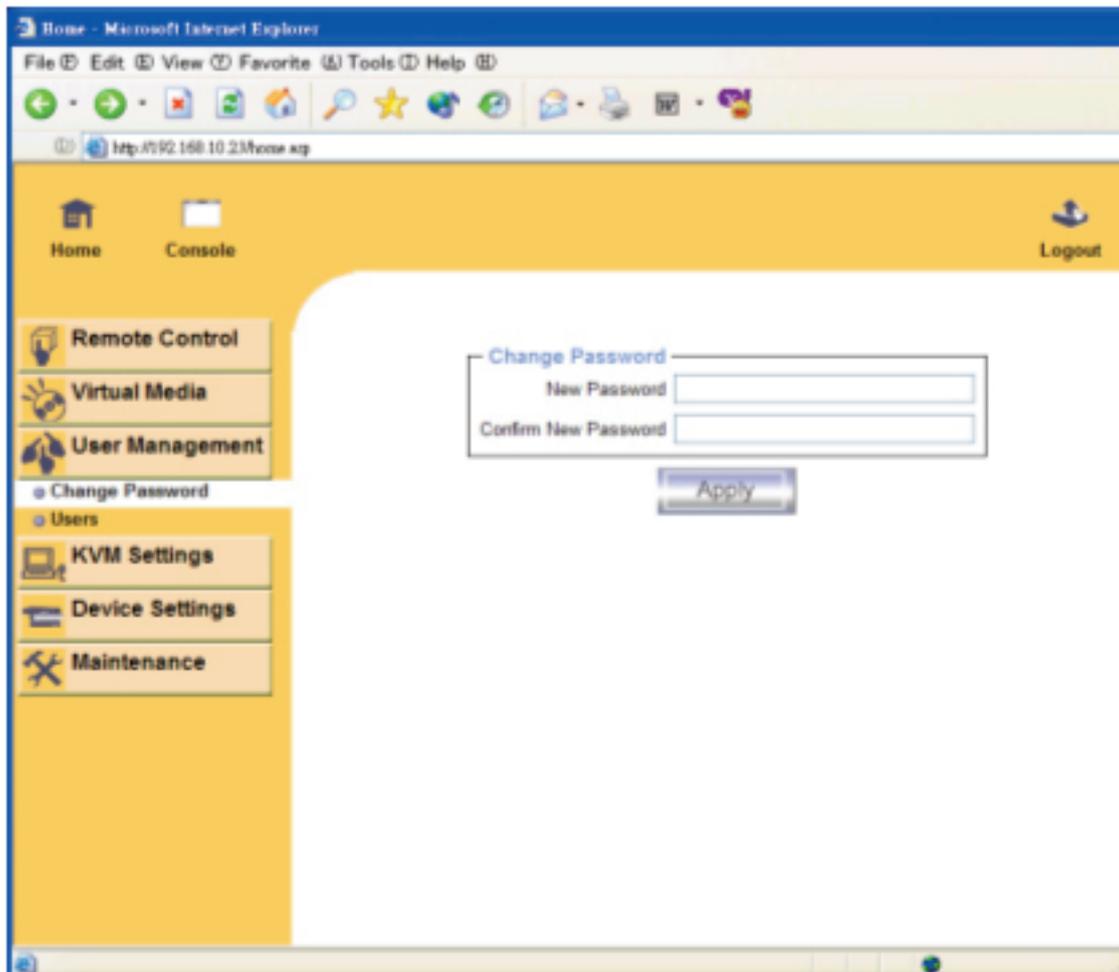
**USB mass storage option**

Set this option to disable mass storage emulation (and hide the virtual drive) if no image file is currently loaded. If unset and no file image is found the host system may hang on boot due to changes in the boot order or the boot manager (LILO, GRUB). This has been reported for some Windows versions (2000, XP) and other OS might not be fully excluded. This behavior depends on the BIOS version used in the computer.

To set this option, click "Apply"

## 4.6 User Management

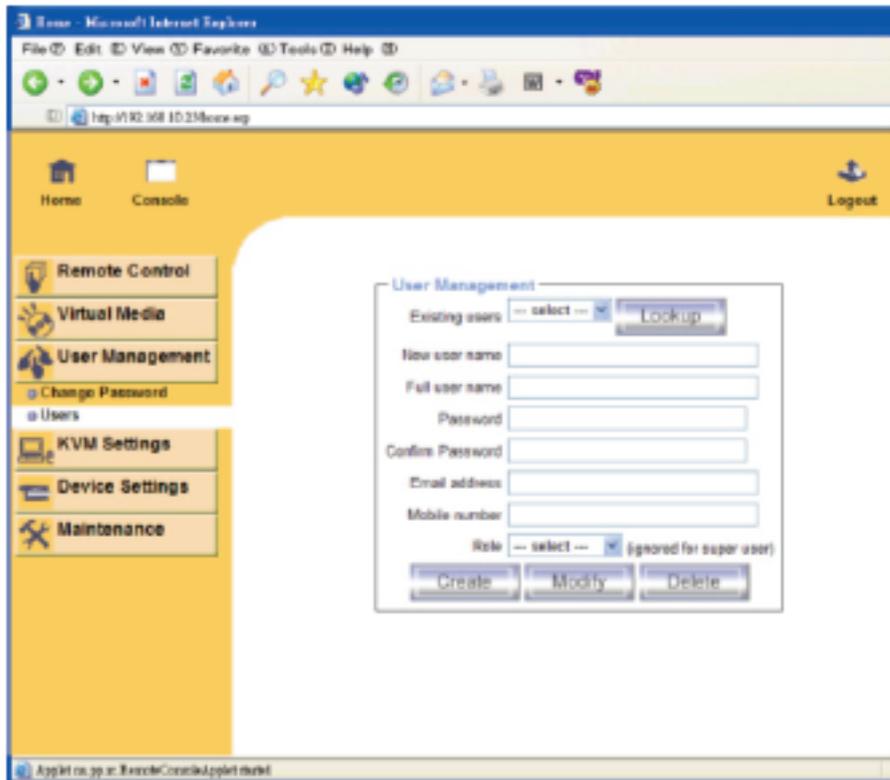
### Change Password



### Set Password

To change your password, enter the new password in the upper entry field. Retype the password in the field below. Click "Apply" to submit your changes.

## Users and Groups



### Set User

The switch comes with 2 pre-configured user accounts that have fixed permissions. The “super” account has all possible rights to configure the device and to use all the functions the switch offers. The “user” account has only the permission to open and use the Remote Console. Even the user name and password can only be changed by the super account.

Upon delivery, both accounts have the password **pass**. Make sure to change these passwords immediately after you have installed your switch.

While the “user” account never sees the following options, the “super” account can change the name and password for both accounts.

#### Existing users

Select an existing user for modification. Once a user has been selected, click the lookup button to see the user information.

#### New User name

The new user name for the selected account.

#### Password

This must be at least four characters long.

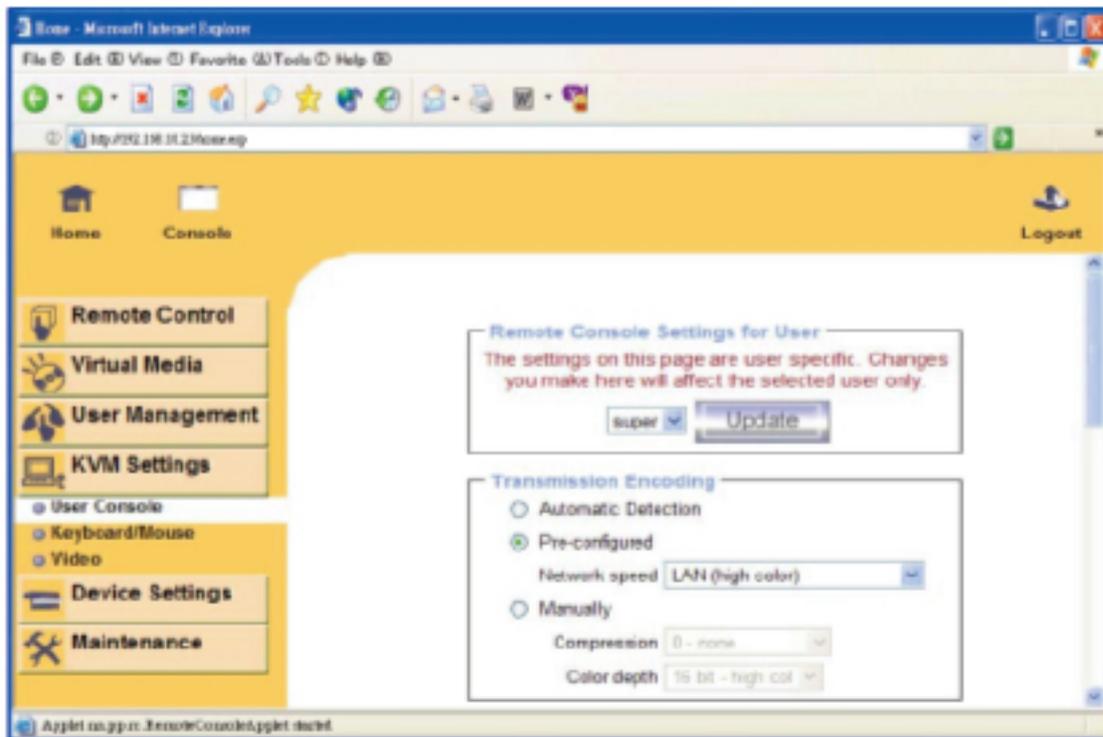
#### Confirm password

Confirmation of the password above

## 4.7 KVM Settings

### User Console

The following settings are user specific. This means the super user can customize these settings for every user separately. Changing the settings for one user does not affect the settings for the other users



**User Console Settings**

#### User select box

This selection box displays the user ID for which the values are shown and for which the changes will take effect. You may change the settings of other users if you have the necessary access rights.

#### Transmission Encoding

The Transmission Encoding setting allows you to change the image-encoding algorithm that is used to transmit the video data to the Remote Console window. It is possible to optimise the speed of the remote screen depending on the number of users working at the same time and the bandwidth of the connection (Modem, ISDN, DSL, LAN, etc.).

#### Automatic detection

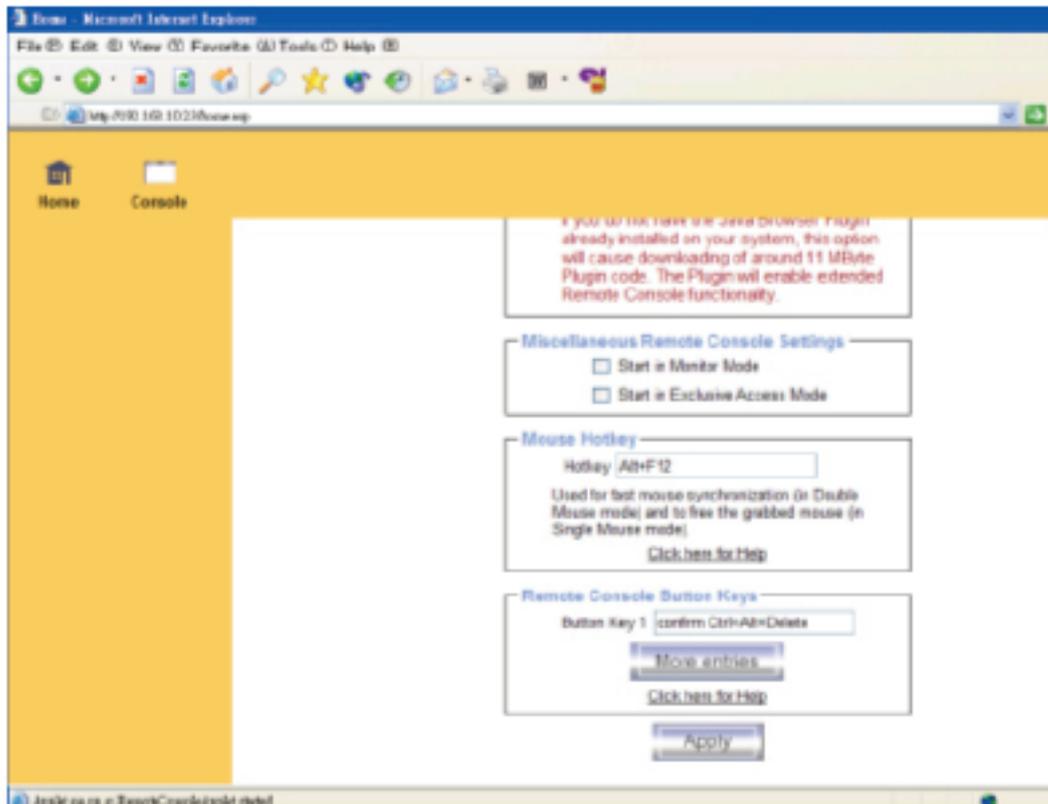
The encoding and the compression level is determined automatically from the available bandwidth and the current content of the video image.

#### Pre-configured

The pre-configured settings deliver the best results because of optimised adjustment of compression and colour depth for the indicated network speed.

#### Manually

Allows you to adjust both the compression rate and the colour depth individually.



**User Console Settings (Part 2)**

**Remote Console Type**

Specifies which Remote Console Viewer to use.

**Default Java-VM**

Uses the default Java Virtual Machine of your Browser. This may be the Microsoft JVM for Internet Explorer, or the Sun JVM if it is configured this way. Use of the Sun JVM may also be forced (see below).

**Sun Microsystems Java Browser Plugin**

Instructs the web browser of your administration system to use the Sun Microsystems JVM. The JVM of the browser is used to run the code for the Remote Console window, which is a Java Applet. If you check this box for the first time on your administration system and the appropriate Java plug-in is not already installed on your system, it will be downloaded and installed automatically. However, in order to make the installation possible, you still need to answer the prompts with a "yes". The download size is around 11 Mbytes. The advantage of downloading Sun's JVM is in providing a stable and consistent Java Virtual Machine across different platforms. The Remote Console software is optimized for this JVM version and offers greater functionality when run in SUN's JVM. (Note: If you are connected over a slow connection to the Internet you can also pre-install the JVM on your administration machine.

## Miscellaneous Remote Console Settings

### Start in Monitor Mode

Sets the initial value for monitor mode. By default monitor mode is off. If you switch it on the Remote Console window will be started in view only mode.

### Start in Exclusive Access Mode

Enables exclusive access mode immediately at Remote Console startup. This forces the Remote Consoles of all other users to close. No new user can open the Remote Console until this user disables exclusive access or logs off.

### Mouse hotkey

Allows you to specify a hotkey combination which starts either the mouse synchronization process if entered in the Remote Console, or is used to exit single mouse mode.

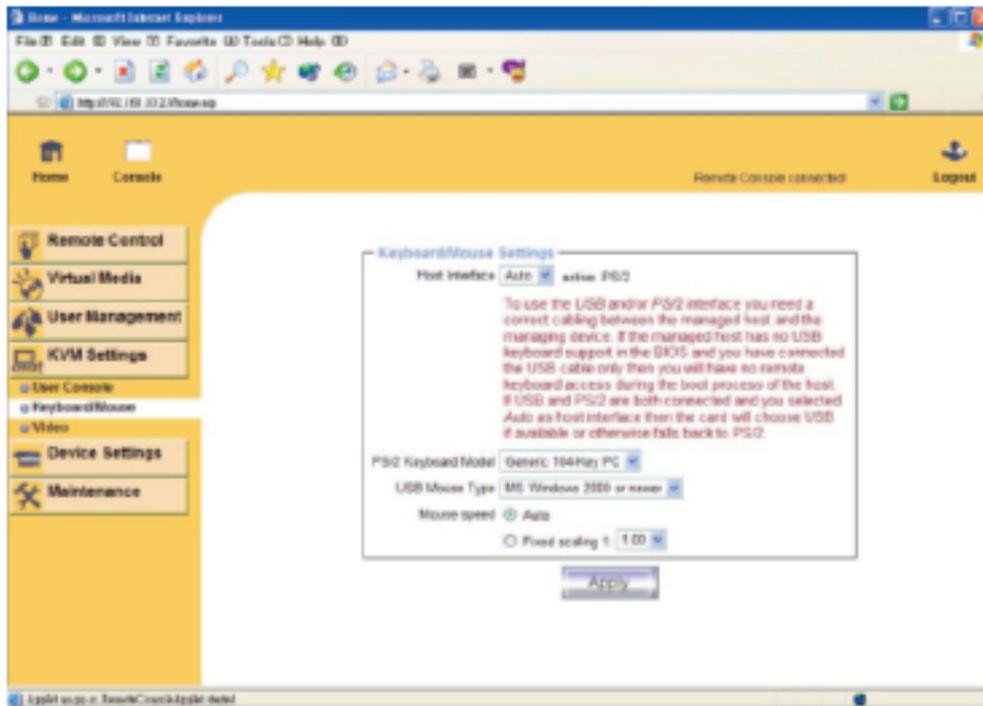
### Remote Console Button Keys

Button Keys allow the simulation of keystrokes on the remote system that cannot be generated locally. The need for this might be due to a missing key or the fact that the local operating system of the Remote Console is intercepting the keystroke. Typical examples are "Control+Alt+Delete" on Windows and DOS, or "Control+Backspace" on Linux for terminating the X-Server. The syntax to define a new Button Key is as follows:

```
[confirm] <keycode>[+|-[*]<keycode>]*
```

"confirm" requests confirmation before the key strokes are sent to the remote host.

"keycode" is the key to be sent. Multiple key codes can be concatenated with a plus, or a minus sign. The plus sign builds key combinations, all keys will be entered until a minus sign or the end of the combination is encountered. In this case all entered keys will be released in reversed sequence. The minus sign builds single, separate key entries and releases them. The star inserts a pause with duration of 100 milliseconds.



## Keyboard and Mouse Settings

### Host Interface

Selects the interface the mouse is connected to. You can choose between “Auto” for automatic detection, “USB” for a USB mouse, and “PS/2” for a PS/2 mouse.

### PS/2 Keyboard Model

Enables a specific keyboard layout. You can choose between “Generic 101-Key PC” for a standard keyboard layout, “Generic 104-Key PC” for a standard keyboard layout extended by the three additional windows keys, “Generic 106-Key PC” for a Japanese keyboard, and “Apple Macintosh” for the Apple Macintosh.

### USB Mouse Type

Selects the USB mouse type. Choose between “MS Windows 2000 or newer” for MS Windows 2000 or Windows XP, or “Other Operating Systems ” for MS Windows NT, Linux, or OS X. In “MS Windows 2000 or newer” mode the remote mouse is always synchronized with the local mouse.

### Mouse Speed

#### ■ Auto mouse speed.

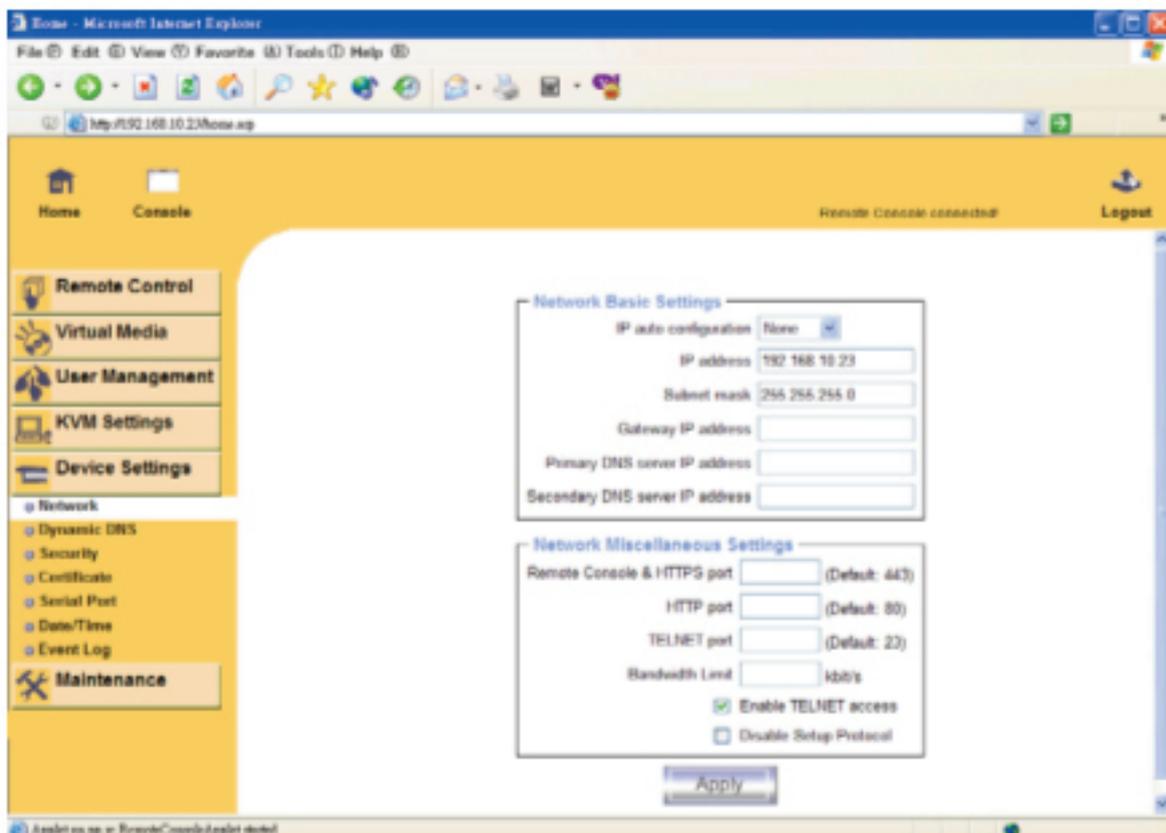
Use this option if the mouse settings on the host use an additional acceleration setting. The IP-KVM switch tries to detect the acceleration and speed of the mouse during the mouse sync process.

#### ■ Fixed mouse speed.

Selects a direct translation of mouse movements between the local and the remote pointer. You may also set a fixed scaling which determines the amount the remote mouse pointer is moved when the local mouse pointer is moved by one pixel. This option only works when the mouse settings on the host are linear. i.e. When there is no mouse acceleration involved.

To set the options, click on the “Apply” button.

## Video Settings



## Video Settings

### Miscellaneous Video Settings

- **Noise filter.**

This option defines how the IP-KVM switch reacts to small changes in the video input signal. A large filter setting creates less network traffic and leads to a faster video display, but small changes in some display regions may not be recognized immediately. A small filter displays all changes instantly but may lead to a constant amount of network traffic even if the display content is not changing (depending on the quality of the video input signal). The default setting should be suitable for most situations..

- **Force Composite Sync (Required for Sun Computers).**

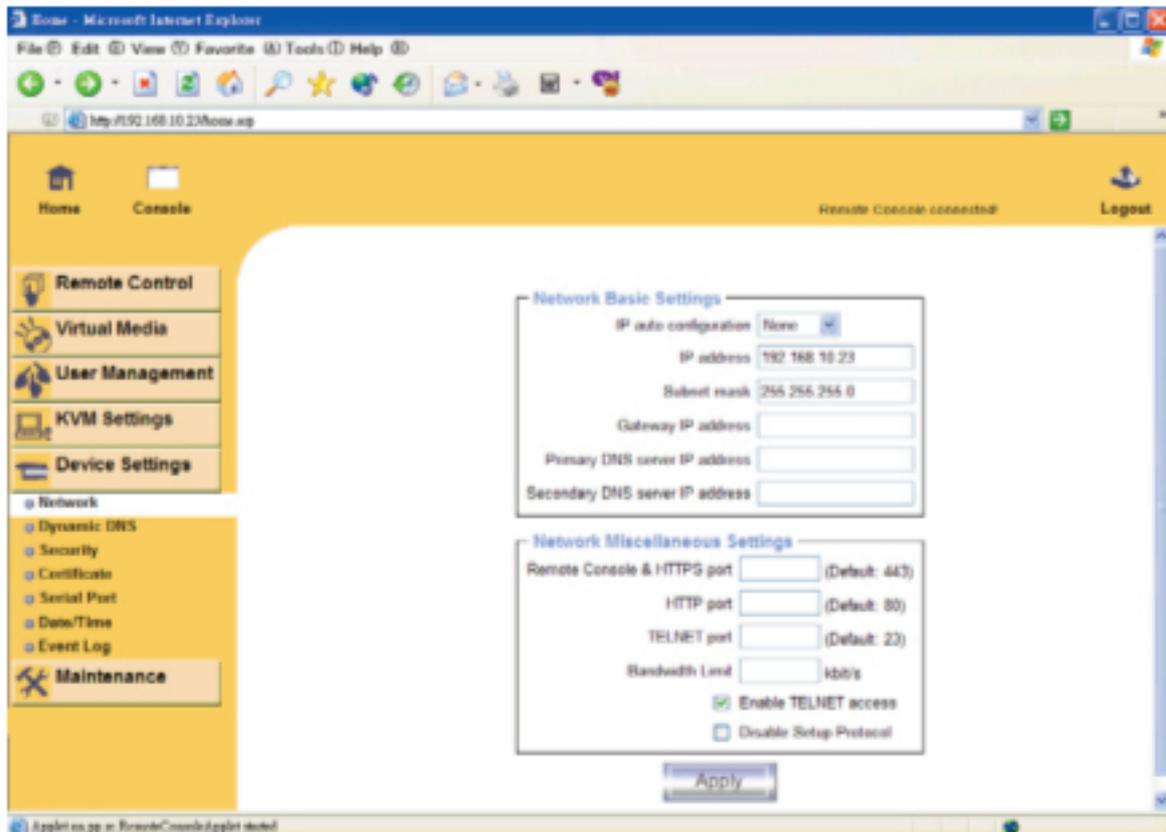
To support signal transmission from a Sun machine, enable this option. If not enabled the picture of the remote console will not be visible.

To set the options, click on the "Apply" button.

## 4.8 Device Settings

### Network

The Network Settings panel allows you to change network related parameters. Each parameter is explained below. Once applied the new network settings will immediately come into effect.



### Network Settings

#### IP auto configuration

With this option you can select whether the IP-KVM switch should take its network settings from a DHCP or BOOTP server. For DHCP, select "dhcp", and for BOOTP select "bootp". If you choose "none" then IP auto configuration is disabled.

#### IP address

IP address in the usual dot notation

#### Subnet Mask

The net mask of the local network.

#### Gateway IP address

If the IP-KVM switch should be accessible from networks other than the local one, this IP address must be set to the local network router's IP address.

**Primary DNS Server IP Address**

IP address of the primary Domain Name Server in dot notation. This option may be left empty, however the IP-KVM switch will not be able to perform name resolution.

**Secondary DNS Server IP Address**

IP address of the secondary Domain Name Server in dot notation. It will be used if the Primary DNS Server cannot be contacted.

**Remote Console and HTTPS port**

Port number at which the IP-KVM switch's Remote Console server and HTTPS server are listening. If left empty the default value will be used.

**HTTP port**

Port number at which the IP-KVM switch's HTTP server is listening. If left empty the default value will be used.

**Telnet port**

Port number at which the IP-KVM switch's Telnet server is listening. If left empty the default value will be used.

**Bandwidth limitation**

The maximum network traffic generated through the IP-KVM switch Ethernet interface. Value in Kbps.

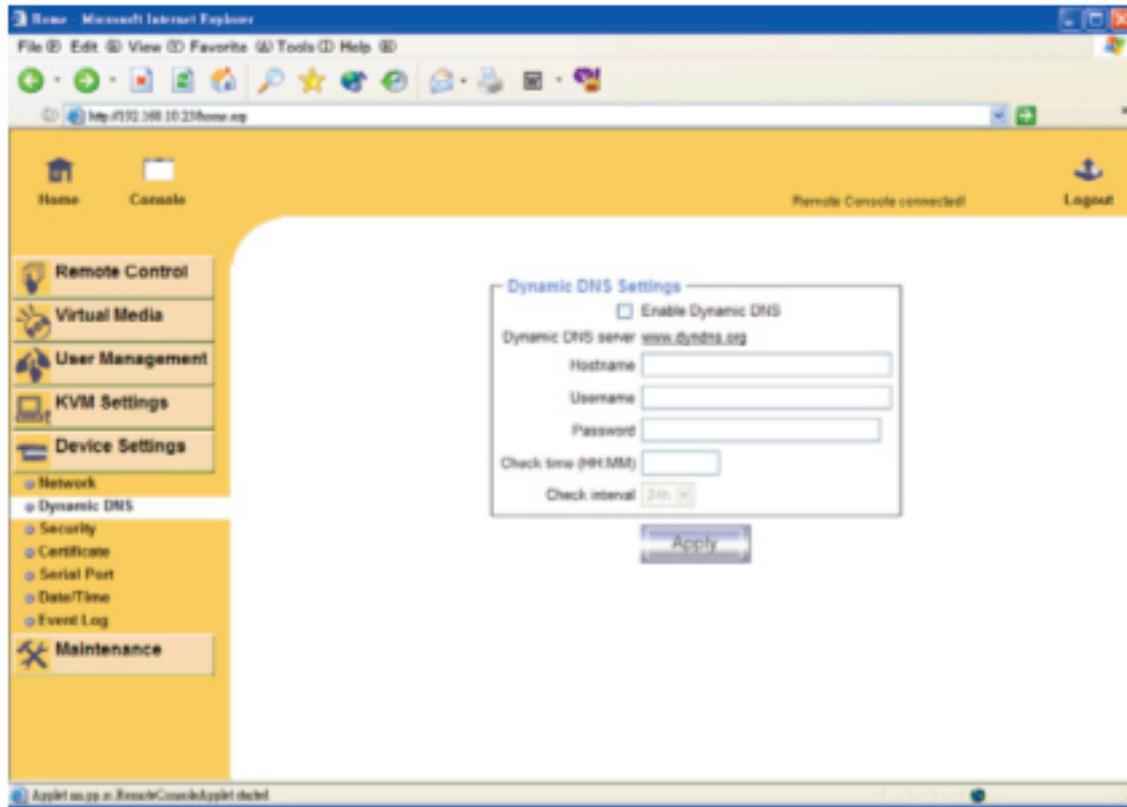
**Enable Telnet access**

Set this option to allow access to the IP-KVM using the Telnet Gateway.

**Disable Setup Protocol**

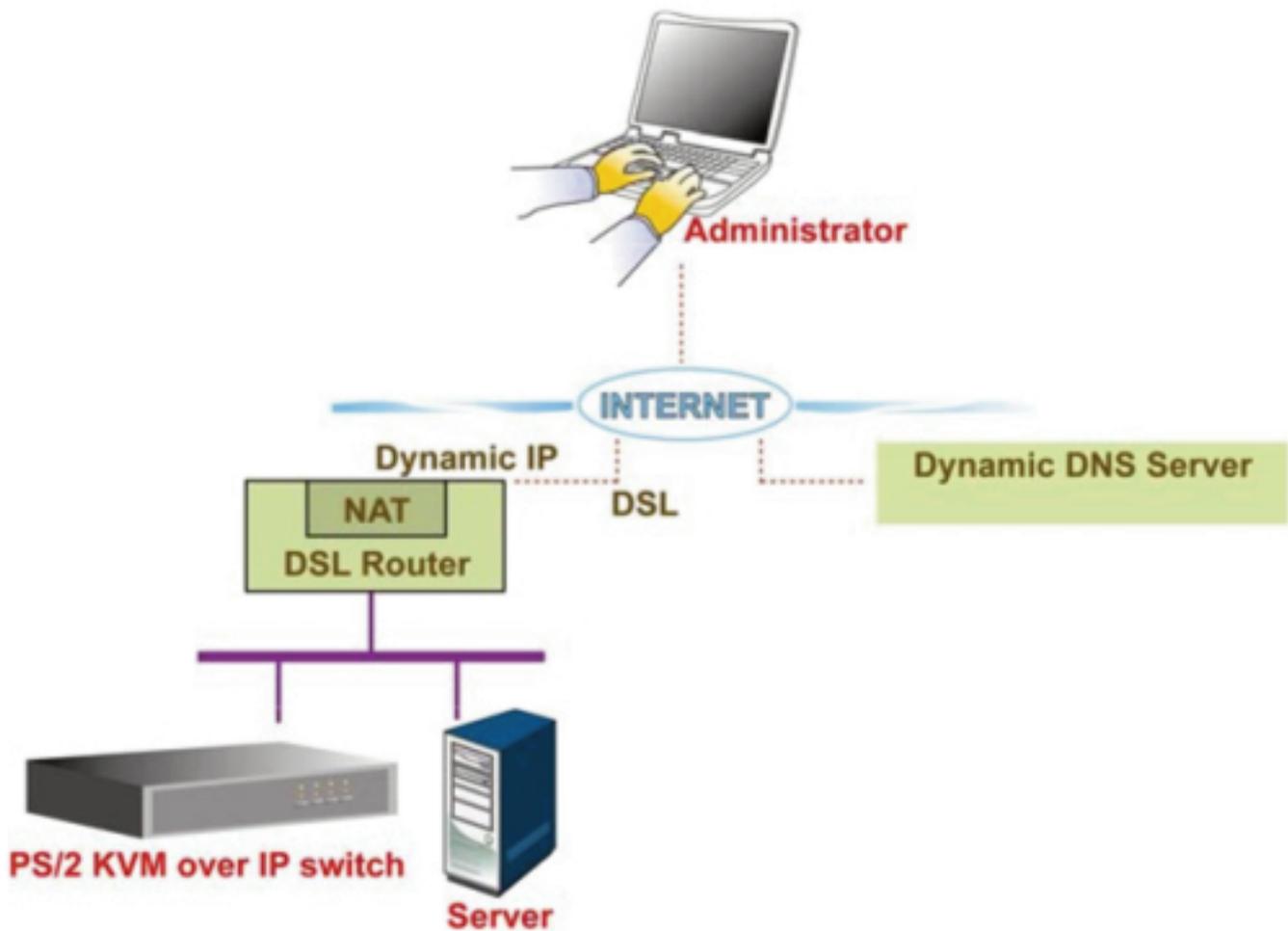
Enable this option to exclude the IP-KVM switch from the setup protocol.

## Dynamic DNS



## Dynamic DNS

A freely available Dynamic DNS service ([dyndns.org](http://dyndns.org)) can be used in the scenario on the following page..



The IP-KVM switch is accessible via the IP address of the DSL router, which is dynamically assigned by the provider. Since the administrator does not know the IP address assigned by the provider, the IP-KVM switch connects to a special dynamic DNS server at regular intervals and registers its IP address there. The administrator may contact this server as well and discover the IP address.

The administrator must register the IP-KVM switch and assign a hostname to it. He will get a nickname and a password in return. This account information together with the hostname is needed in order to determine the IP address of the registered IP-KVM switch.

You have to perform the following steps in order to enable Dynamic DNS:

- Make sure that the LAN interface of the IP-KVM switch is correctly configured.
- Enter the Dynamic DNS Settings configuration dialog
- Enable Dynamic DNS and change the settings according to your needs (see below).

### **Enable Dynamic DNS**

This enables the Dynamic DNS service. This requires a configured DNS server IP address.

### **Dynamic DNS server**

This is the server name that the IP-KVM switch registers itself with at regular intervals. Currently, this is a fixed setting since only dyndns.org is supported

**Hostname**

This is the hostname of the IP-KVM switch that is provided by the Dynamic DNS Server. (Use the whole name including the domain, e.g. testserver.dyndns.org, not just the actual hostname).

**Username**

You will have registered this username during the manual registration with the Dynamic DNS Server. Spaces are not allowed in the nickname.

**Password**

You will have used this password during your manual registration with the Dynamic DNS Server.

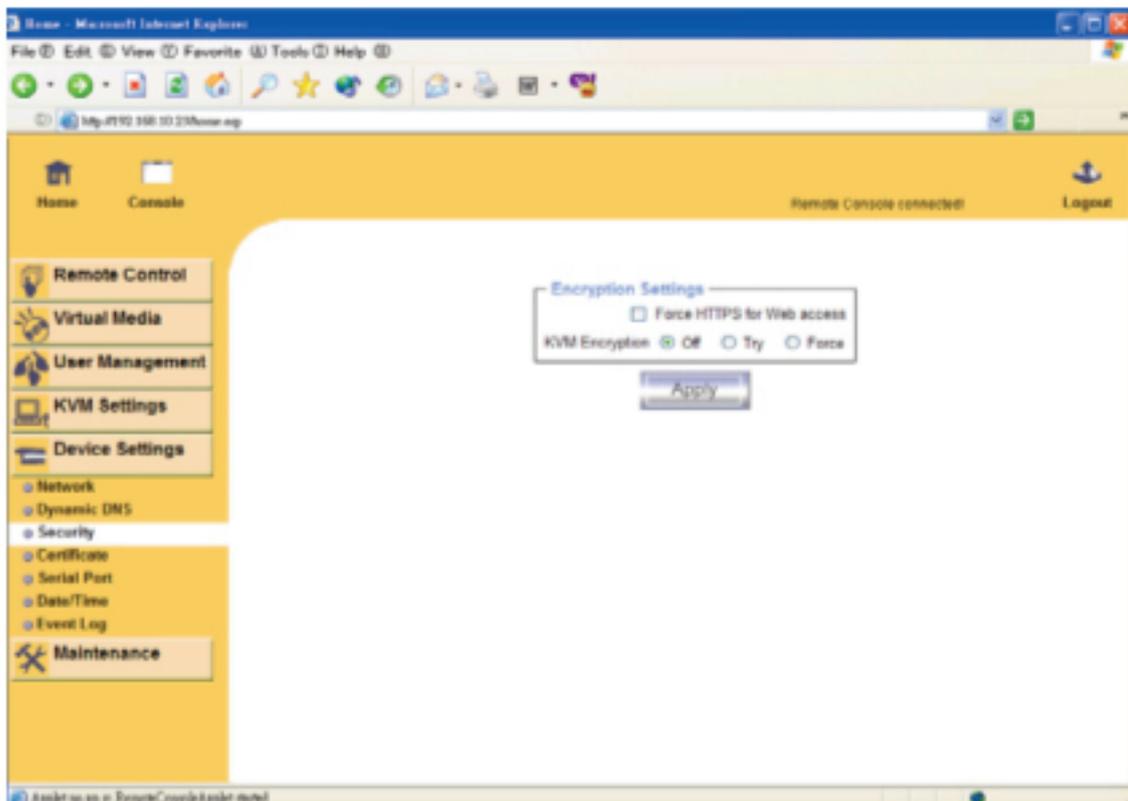
**Check time**

The IP-KVM switch registers itself in the Dynamic DNS server at this time.

**Check interval**

This is the interval at which the IP-KVM contacts the Dynamic DNS server.

**Security**



**Force HTTPS**

If this option is enabled access to the web front-end is only possible using an HTTPS connection. The IP-KVM switch will not listen on the HTTP port for incoming connections.

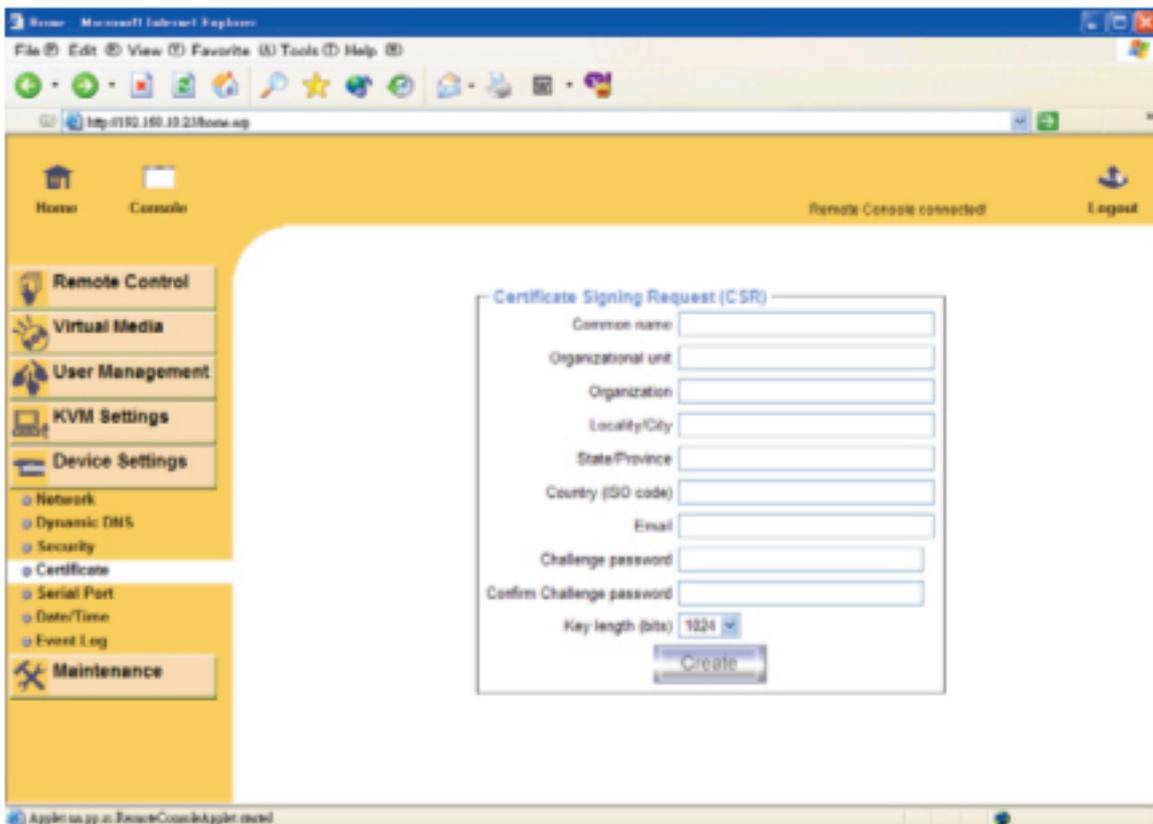
If you want to create your own SSL certificate to identify the IP-KVM switch refer to the Certificate section.

**KVM encryption**

This option controls the encryption of the RFB protocol. RFB is used by the Remote Console to transmit both the screen data to the administrator machine and keyboard and mouse data back to the host. If set to 'Off' no encryption will be used. If set to 'Try' the applet tries to make an encrypted connection. If connection establishment fails for any reason an unencrypted connection will be used.

If set to "Force" the applet tries to make an encrypted connection. An error will be reported if connection establishment fails.

**Certificates**



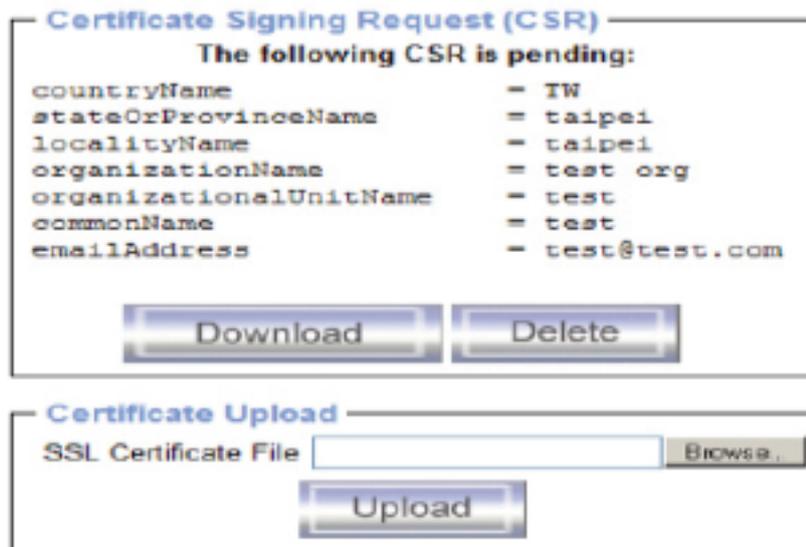
The IP-KVM switch uses the Secure Socket Layer (SSL) protocol for any encrypted network traffic between itself and a connected client. During the connection establishment the IP-KVM switch has to expose its identity to a client using a cryptographic certificate. Upon delivery, this certificate and the underlying secret key are the same for all IP-KVM switches and will not match your network configuration. The certificate's underlying secret key is also used for securing the SSL handshake. Hence, this is a security risk (but far better than no encryption at all).

However, it is possible to generate and install a new certificate that is unique for to particular IP-KVM switch. In order to do this, the IP-KVM switch is able to generate a new cryptographic key and the associated

Certificate Signing Request (CSR) that needs to be certified by a certification authority (CA). A certification authority verifies that you are the person who you claim you are, and signs and issues a SSL certificate to you.

The following steps are necessary to create and install a SSL certificate for the IP-KVM switch:

- Create a SSL Certificate Signing Request. You need to fill out a number of fields that are explained below. Once this is done, click on the button " Create " which will initiate the Certificate Signing Request generation. The CSR can be downloaded to your administration machine with the "Download CSR" button.
- Send the saved CSR to a CA for certification. You will get the new certificate from the CA after a more or less complicated traditional authentication process (depending on the CA).
- Upload the certificate to the IP-KVM switch using the "Upload" button.



After completing these three steps, the IP-KVM switch will have its own certificate for identifying the switch to its clients.

### Common name

This is the network name of the IP-KVM switch once it is installed in the user's network (usually the fully qualified domain name). It is identical to the name that is used to access the IP-KVM switch with a web browser (without the "http://" prefix). If the name given here and the actual network name differ, the browser will pop up a security warning when the IP-KVM switch is accessed using HTTPS.

### Organisational unit

This field is used for specifying to which department within an organization the IP-KVM switch belongs.

**Organisation**

The name of the organisation to which the IP-KVM switch belongs.

**Locality/City**

The city where the organisation is located.

**State/Province**

The state or province where the organisation is located.

**Country (ISO code)**

The country where the organisation is located. This is the two-letter ISO code, e.g. DE for Germany, or US for the USA.

**Challenge Password**

Some certification authorities require a challenge password to authorise later changes on the certificate (e.g. revocation of the certificate). The minimal length of this password is 4 characters.

**Confirm Challenge Password**

Confirmation of the Challenge Password

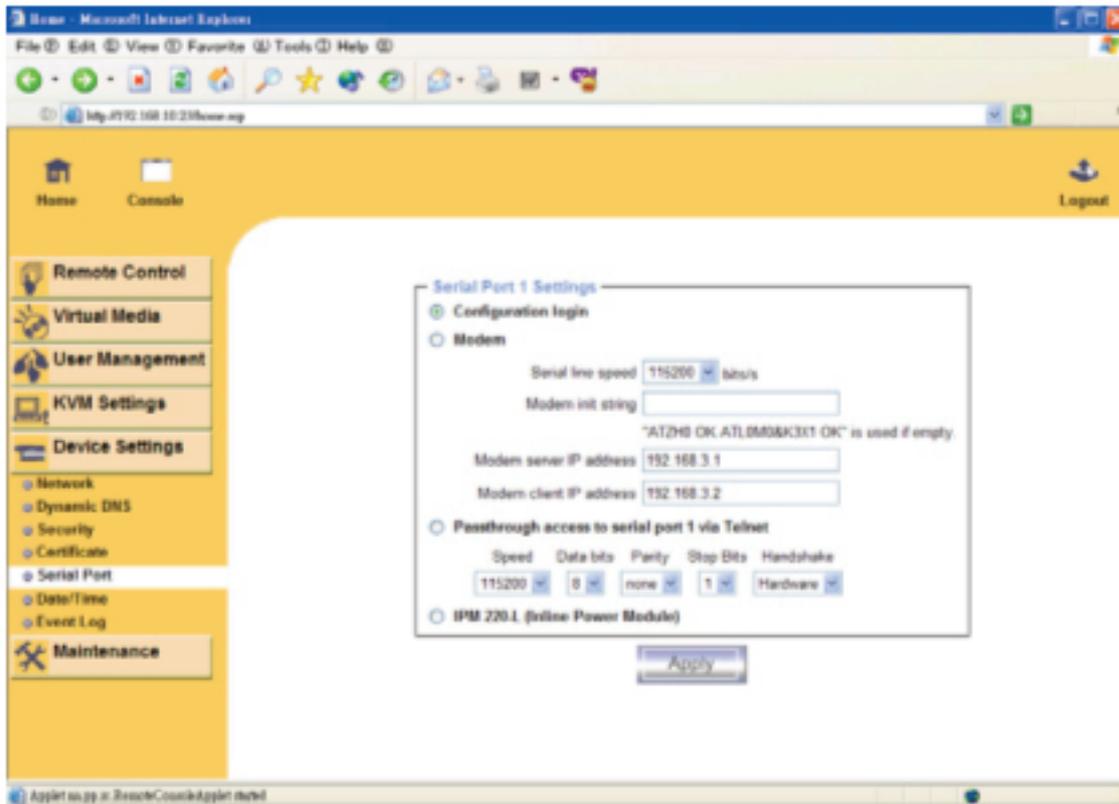
**Email**

The email address of a contact person that is responsible for the IP-KVM switch and its security.

**Key length**

This is the length of the generated key in bits. 1024 Bits are usually considered sufficient for most cases. Longer keys may result in a slower response time of the IP-KVM switch during connection establishment.

## Serial Port



### Serial Port

The IP-KVM switch's Serial Settings allow you to specify what device is connected to the serial port and how to use it.

#### Configuration or console login

Do not use the serial port for any special function; use it only for the initial configuration

#### Modem

The IP-KVM switch offers remote access using a telephone line in addition to the standard access over the built-in Ethernet adapter. The modem needs to be connected to the serial interface of the IP-KVM switch .

Connecting to the IP-KVM switch using a telephone line simply means building up a dedicated point-to-point connection from your console computer to the IP-KVM switch. In other words, the IP-KVM switch acts as an Internet Service Provider (ISP) to which you can dial in. The connection is established using the Point-to-Point Protocol (PPP). Before you connect to the IP-KVM switch, make sure to configure your console computer accordingly. For instance, on Windows based operating systems you can configure a dial-up network connection, which defaults to the correct settings.

The Modem Settings panel allows you to configure remote access to the IP-KVM switch using a modem. The meaning of each parameter is described below. The modem settings are part of the serial settings panel.

## Serial line speed

The speed the IP-KVM switch uses to communicate with the modem. Most modems available today will support the default value of 115200 bps. If you are using an old modem and discovering problems try to lowering this speed.

## Modem Init String

The initialisation string used by the IP-KVM switch to initialise the modem. The default value will work with all modern standard modems directly connected to a telephone line. If you have a special modem or the modem is connected to a local telephone switch that requires a special dial sequence in order to establish a connection to the public telephone network, you can change this setting by giving a new string. Refer to the modem's manual for the AT command syntax.

## Modem server IP address

This IP address will be assigned to the IP-KVM switch itself during the PPP handshake. Since it is a point-to-point IP connection virtually any IP address will work but you must make sure it is not interfering with the IP settings of the IP-KVM switch and your console computer. The default value will work in most cases.

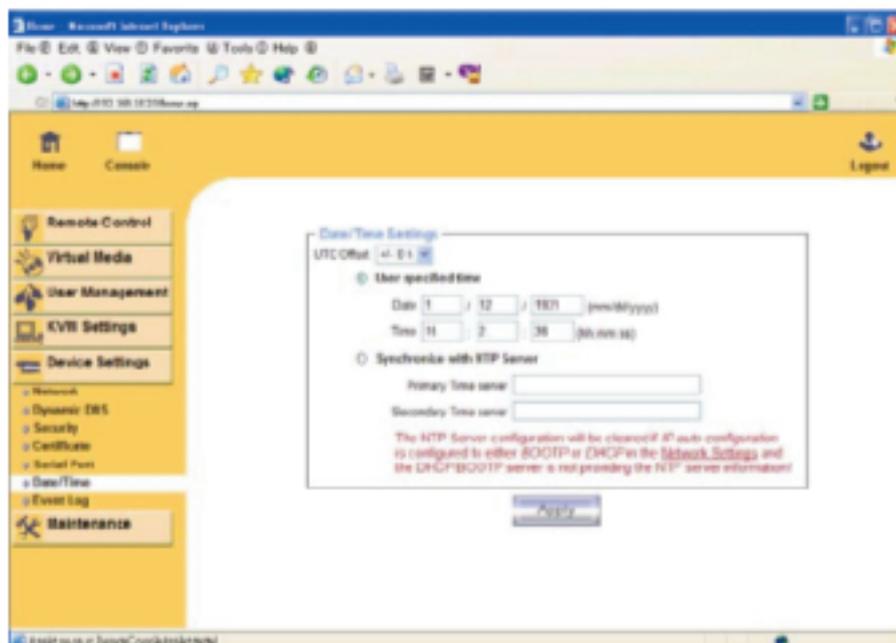
## Modem client IP address

This IP address will be assigned to your console computer during the PPP handshake. The default value will work in most cases.

## Pass-through access to serial port via Telnet

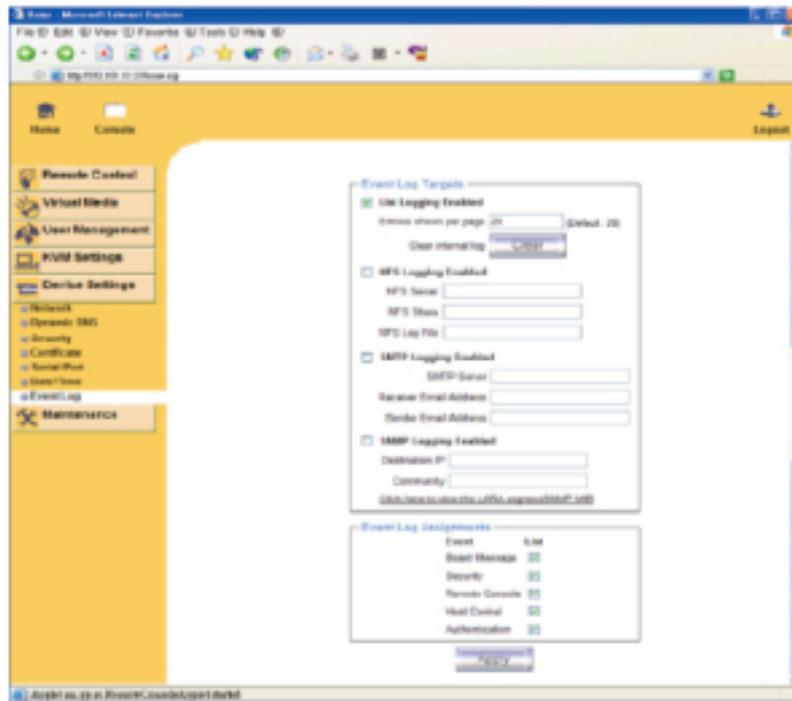
Using this option, it is possible to connect an arbitrary device to the serial port and access it (assuming it provides terminal support) via Telnet. Select the appropriate options for the serial port and use the Telnet Console, or a standard Telnet client to connect to the IP-KVM switch.

## Date and Time



This is where the internal real-time clock of the IP-KVM switch can be set. Either adjust the clock manually or to use a NTP timeserver. Without a timeserver, your time setting will not be persistent, so you will have to readjust if the IP-KVM switch loses power for more than a few minutes. To avoid this, you can use a NTP timeserver, which sets up the internal clock automatically to the current UTC time. Because NTP server time is always UTC, there is a setting that allows you to set up a static offset to get your local time.

**Event Log**



Important events like a login failure or a firmware update are logged to a selection of logging destinations. Each events belongs to an event group which can be activated separately.

The most common way to log events is using the internal log list of the IP-KVM switch. To show the log list, click on "Event Log" on the "Maintenance" page. In the Event Log Settings you can choose how many log entries are shown on each page. You can also clear the log file here.

**List logging enabled**

Since the IP-KVM switch's system memory is used to save all the information if this setting is selected, the maximum number of possible log list entries is restricted to 1000 events. Every entry that exceeds this limit overrides the oldest one automatically.

**NFS Logging enabled**

Define an NFS server to write all logging data to. To write logging data from more than one IP-KVM switch device to only one NFS share, you have to define a file name that is unique for each device. When you change the NFS settings and click the "Apply" button the NFS share will be mounted immediately. That means that the NFS share and the NFS server fields must be completed with valid sources or you will get an error message.

**SMTP logging enabled**

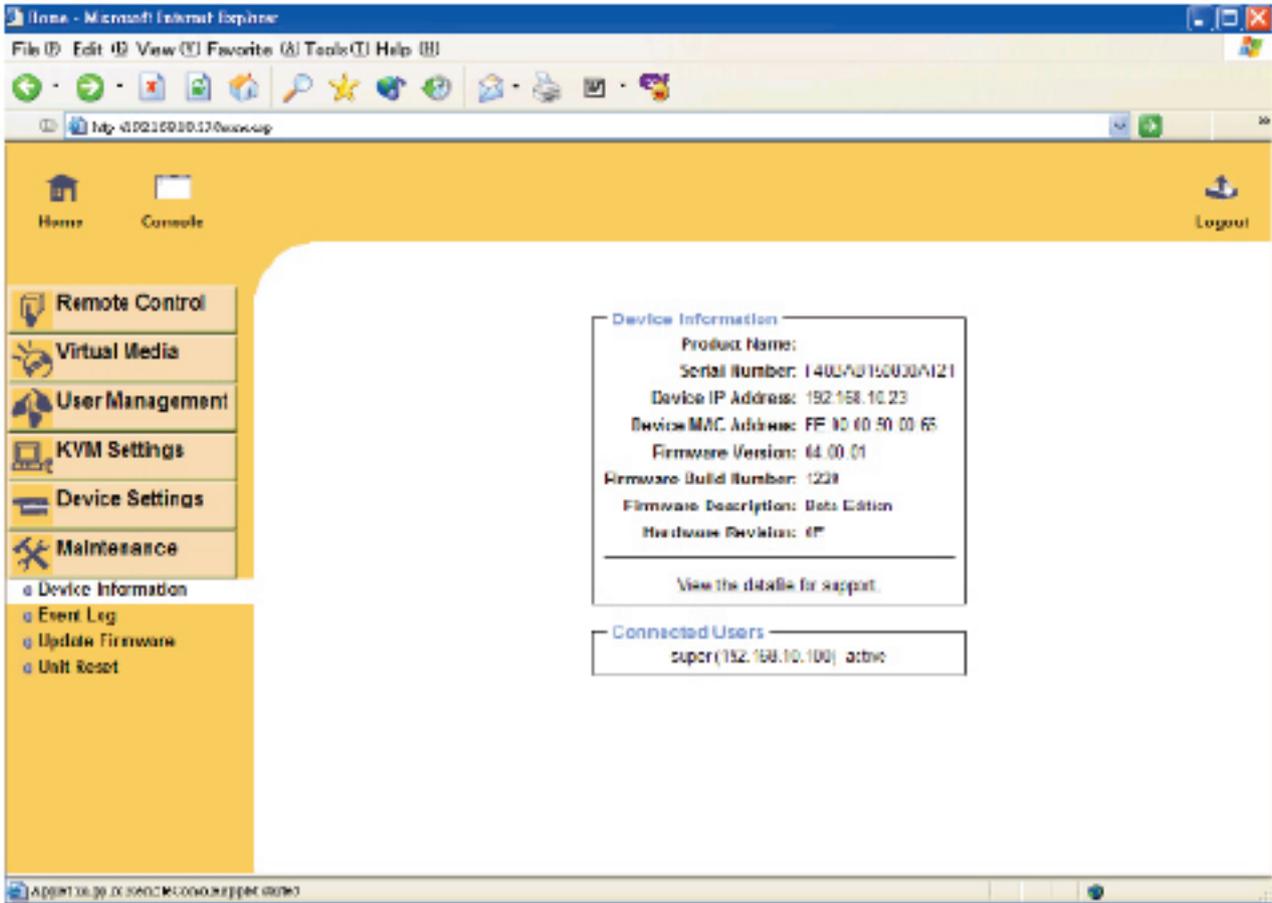
With this option enabled the IP-KVM switch is able to send Emails to the address given in the Email address text field in the Event Log Settings. These mails contain the same description strings as the internal log file and the mail subject is filled with the event group of the log event. In order to use this log destination you have to specify a SMTP server that is reachable from the IP-KVM switch device and that does not require authentication (<serverip>:<port>).

**SNMP Logging enabled**

If this is activated, the IP-KVM switch sends an SNMP trap to a specified destination IP address every time a log event occurs. If the receiver requires a community string, you can set it in the appropriate text field. Most of the event traps only contain one descriptive string with all the information about the log event. Only authentication and host power events have their own trap class that consist of several fields with detailed information about the event. To receive SNMP traps, any SNMP trap listener may be used.

In contrast to the internal log file on the IP-KVM switch, the size of the NFS log file is not limited. Every log event will be appended to the end of the file so it grows continuously and you may have to delete it or move it from time to time.

## 4.9 Maintenance



### Device Information

#### Board Summary

This section contains a summary with information about this IP-KVM and its current firmware and allows you to reset the unit.

The support Data File support allows you to download specific information, such as serial number, that we may require for support.

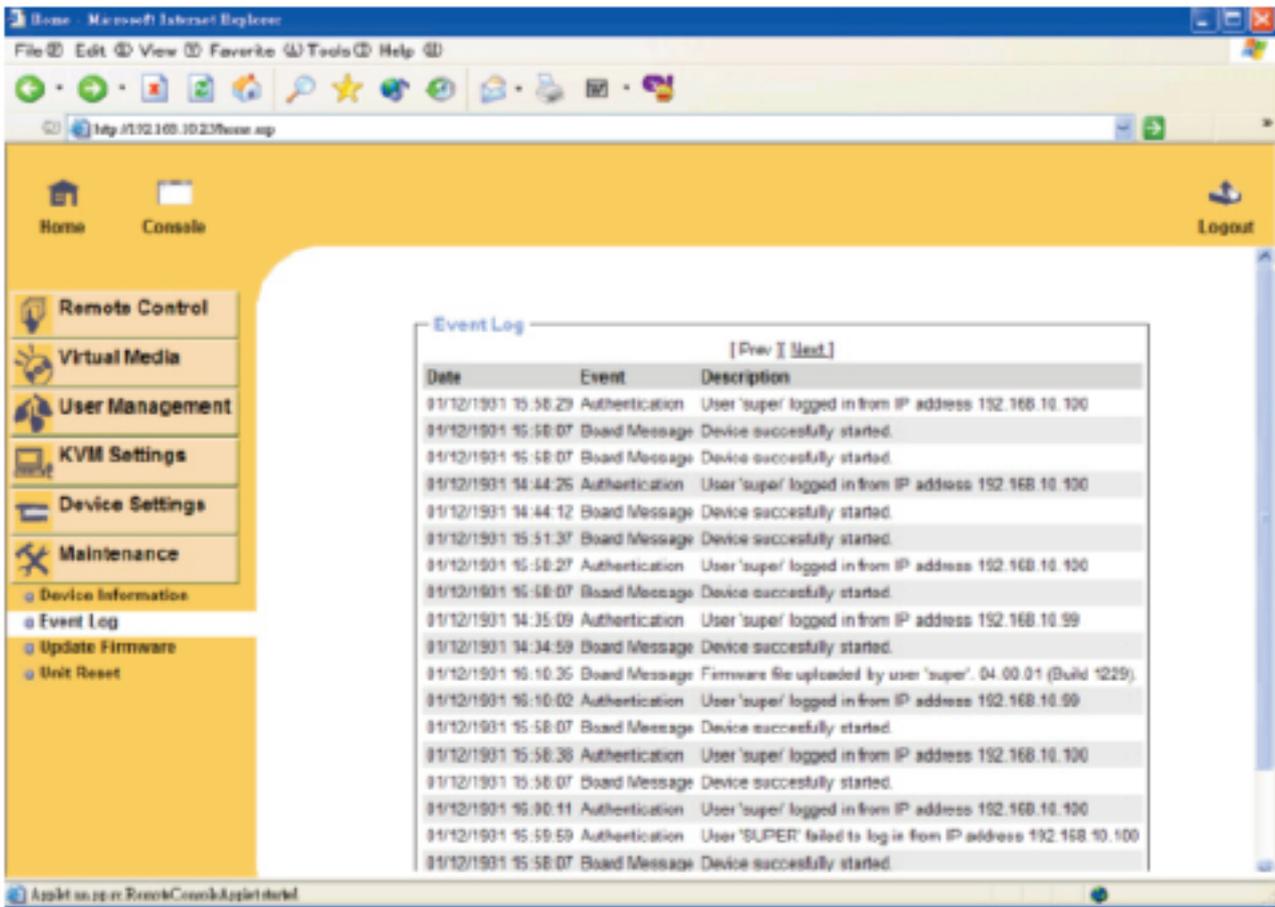
Connected Users	
test (62.238.0.39)	active
test (80.145.25.183)	26 min idle
test (212.183.10.29)	20 min idle
test (62.153.241.228) RC (exclusive)	active

Connected User displays user activity. From left to right you see the connected user(s), the IP address of host and the user's activity status. RC means that the Remote Console is open. If the Remote Console is opened in exclusive mode the term (exclusive) is added.

**Reset Functions**

This section allows you to reset specific parts of the device. Currently this includes the video engine and the IP-KVM switch itself. Resetting the switch itself is mainly needed to activate a newly updated firmware. This will close all current connections to the administration console and to the Remote Console. The whole process will take about half a minute. Resetting sub devices (e.g. the video engine) will take only seconds and does not close connections.

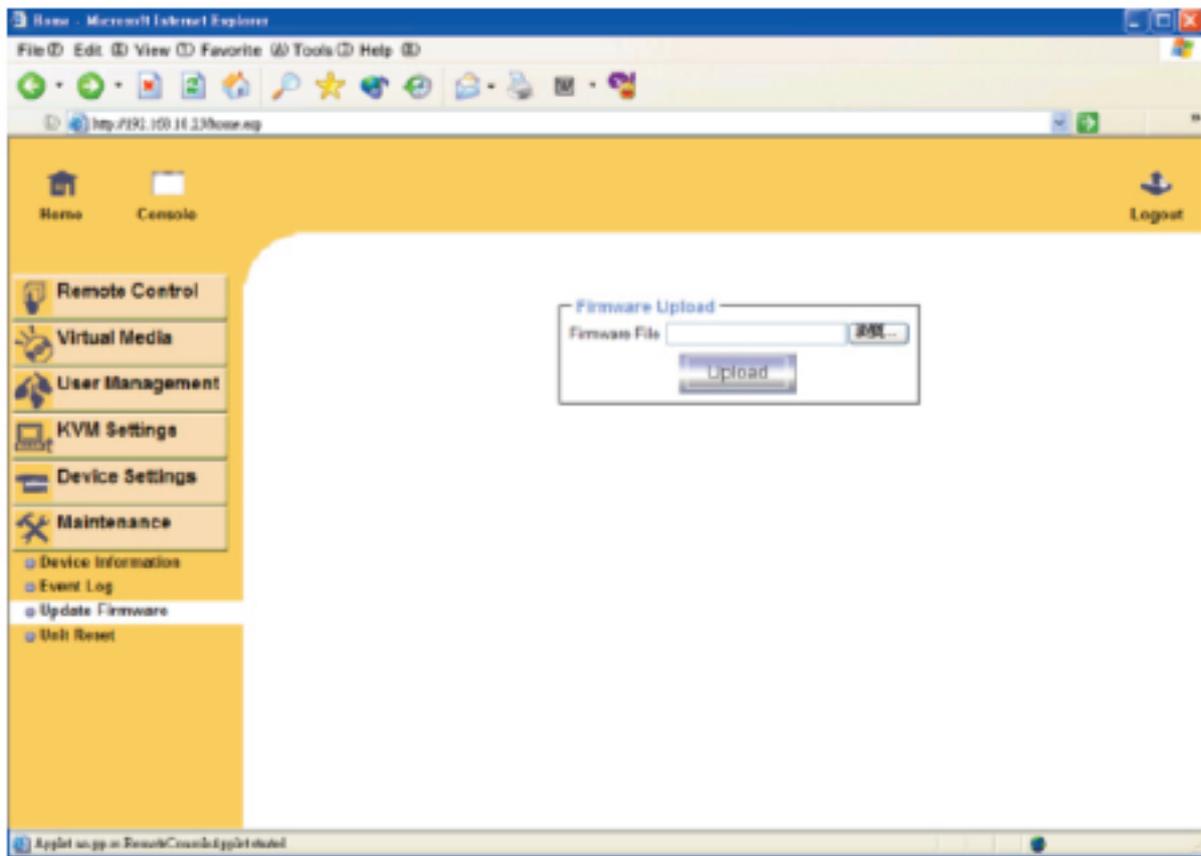
**Event Log**



**Event Log List**

This displays the log list containing the events that are logged by the IP-KVM switch.

## Update Firmware



### Update Firmware

The IP-KVM switch is a standalone computer. The software it runs is called firmware. The firmware of the IP-KVM switch can be updated remotely in order to install new functionality or special features.

A new firmware update is a binary file which will be sent to you by email. If the firmware file is compressed (with a .zip suffix) then you must unzip it before you can proceed. If using a Windows operating system you can use WinZip. Other operating systems might provide a program called unzip.

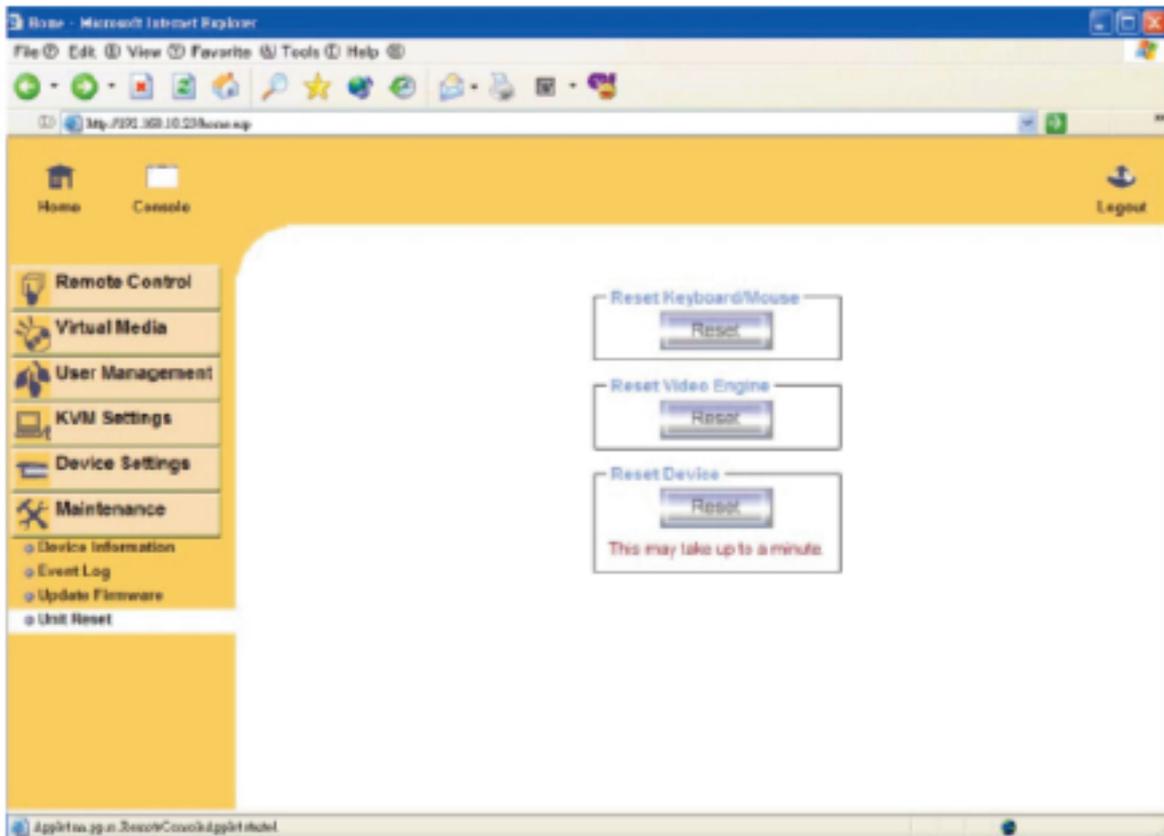
Before you can start updating the firmware of your IP-KVM switch the new uncompressed firmware file has to be accessible on the system that you use to connect to the IP-KVM switch.

Updating the firmware is a three-stage process:

- Firstly, the new firmware file is uploaded onto the IP-KVM switch. In order to do this you need to select the file on your local system using the " Browse " button on the Upload Firmware panel. Once the firmware file has been uploaded, it is checked to ensure it is a valid firmware file and whether there were any transmission errors. In the event of any error the Upload Firmware function will be aborted.
- Secondly, if everything went well, you will see the Update Firmware panel. The panel shows you the version number of the currently running firmware and the version number of the uploaded firmware. Clicking the " Update " button will store the new version and remove the old one completely.

- Thirdly, after the firmware has been stored, the panel will request you to reset the IP-KVM switch manually. Half a minute after the reset, the IP-KVM switch will run with the new firmware version and should be accessible. However, you are requested to login once again.

**Unit Reset**



**Unit Reset**

This section allows you to reset specific parts of the device. This involves both the keyboard and mouse, the video engine and the IP-KVM itself. Resetting the card itself is mainly needed to activate a newly updated firmware. It will close all current connections to the administration console and to the Remote Console.

The whole process will take about half a minute. Resetting sub devices (e.g. video engine) will take only seconds and does not close open connections.

## 4.10 Video Modes

The table below lists the video modes the IP-KVM switch supports. Please don't use other custom video setting as switch may not be able to detect them.

<i>Resolution (x, y)</i>	<i>Refresh Rates (Hz)</i>
640 x 350	70, 85
640 x 400	56, 70, 85
640 x 480	60, 67, 72, 75, 85, 90, 100, 120
720 x 400	70, 85
800 x 600	56, 60, 70, 72, 75, 85, 90, 100
832 x 624	75
1024 x 768	60, 70, 72, 75, 85, 90, 100
1152 x 864	75
1152 x 870	75
1152 x 900	66
1280 x 960	60
1280 x 1024	60, 75

## 5.1 Specifications

<b>KVT15XAE-UK-116/132</b>	
<b>KVM Port</b>	
Number of ports:	16 or 32
Connector:	RJ-45
Connectivity:	KVT150AE-USB/PS/2 dongle up to 132 feet
<b>Local Console</b>	
Graphic Connector:	HDDDB15-pin VGA
Resolution:	Up to 1600 x 1200
Input Device:	2 x USB type A for keyboard & mouse
<b>Management</b>	
Multilingual OSD:	English, France, German, Spanish, Italian, Russian, Simplified Chinese
Hotkey combination:	Scroll-lock, Cap-lock, Num-lock, Alt, Ctrl & Win
Security:	Password enable & disable, up to 8 users profile for port access
PC Selection:	Front button, OSD menu & hotkey
<b>Expansion</b>	Up to 256 servers by 8-level cascade
<b>Compatibility</b>	
Multi-platform:	Mix PCs, SUNs, IBMs, HPs, DELLs Server
Support:	Windows Vista / 2003 / XP / 2000, Linux, Netware, Unix
<b>Power</b>	
Input:	100 or 240V AC at 50 or 60 Hz via IEC type cord OR AC / DC power adapter 12V@3.3A (optional)
Option DC:	12V / 24V / 48V DC input
Consumption:	Max. 25 Watt
<b>Regulatory Approval</b>	FCC, CE

<b>KVT15XAE-UK-116/132 (continued)</b>	
<b>Environmental</b>	
Operating Temperature:	0 to 50°C
Storage Temperature:	-10 to 60°C
Relative humidity:	90%, non-condensing
Shock:	50G peak acceleration (11ms, half-sine wave)
Vibration:	58~100Hz / 0.98G (11ms / cycle)
<b>Product Information</b>	
Dimensions (W x D x H):	443 x 180 x 44 mm / 17.3 x 7.1 x 1.73 inch
Net weight:	4 kg / 9 lb
<b>Packing Information</b>	
Dimension (W x D x H):	510 x 400 x 77 mm / 20.1 x 15.7 x 3 inch
Gross weight:	7 kg / 15 lb

<b>KVT15XAE-UK-216/232 - SW151AE-216/232</b>	
<b>KVM Port</b>	
Number of ports:	16 or 32
Connector:	RJ-45
Connectivity:	KVT150AE-USB/PS/2 dongle up to 132 feet
<b>Local Console</b>	
Graphic Connector:	HDDB15-pin VGA
Resolution:	Up to 1600 x 1200
Input Device:	2 x USB type A for keyboard & mouse
<b>Remote Console</b>	
Connector:	HDDB15-pin VGA
Resolution:	Up to 1600 x 1200 (500 feet), Up to 1024 x 768 (1000 feet)
Input Device:	2 x USB type A for keyboard & mouse
Remote I/O:	RJ-45 via CAT5/CAT5e/CAT6 cable up to 1000 feet
Compensation:	Auto adjust for cable length
<b>Expansion</b>	Up to 256 servers by 8-level cascade
<b>Compatibility</b>	
Multi-platform:	Mix PCs, SUNs, IBMs, HPs, DELLs Server
Support:	Windows Vista / 2003 / XP / 2000, Linux, Netware, Unix
<b>Power</b>	
Input:	100 or 240V AC at 50 or 60 Hz via IEC type cord
Option DC:	12V / 24V / 48V DC input
Consumption:	Max. 25 Watt
<b>Regulatory Approval</b>	FCC, CE

<b>KVT15XAE-UK-216/232 - SW151AE-216/232 (continued)</b>	
<b>Environmental</b>	
Operating Temperature:	0 to 50°C
Storage Temperature:	-10 to 60°C
Relative humidity:	90%, non-condensing
Shock:	50G peak acceleration (11ms, half-sine wave)
Vibration:	58~100Hz / 0.98G (11ms / cycle)
<b>Product Information</b>	
Dimensions (W x D x H):	443 x 180 x 44 mm / 17.3 x 7.1 x 1.73 inch
Net weight:	4 kg / 9 lb
<b>Packing Information</b>	
Dimension (W x D x H):	510 x 400 x 77 mm / 20.1 x 15.7 x 3 inch
Gross weight:	7 kg / 15 lb

<b>KVT15XAE-UK-IP16/IP32 - SW151AE-IP16/IP32</b>	
<b>KVM Port</b>	
Number of ports:	16 or 32
Connector:	RJ-45
Connectivity:	KVT150AE-USB/PS/2 dongle up to 132 feet
<b>Local Console</b>	
Graphic Connector:	HDDB15-pin VGA
Resolution:	Up to 1600 x 1200
Input Device:	2 x USB type A for keyboard & mouse
<b>IP Remote Console</b>	
Connector:	RJ-45 Ethernet
User Management:	15-user login, 1 x active user
Network protocol:	DHCP/BOOTP/DNS
Security:	SSL v3, RSA, AES, HTTP/HTTPs, CSR
Resolution:	Up to 1600 x 1200
Browser:	IE, Firefox, Safari, Netscape
Other:	Serial port, virtual media via USB
<b>Expansion</b>	Up to 256 servers by 8-level cascade
<b>Compatibility</b>	
Multi-platform:	Mix PCs, SUNs, IBMs, HPs, DELLs Server
Support:	Windows Vista / 2003 / XP / 2000, Linux, Netware, Unix
<b>Power</b>	
Input:	100 or 240V AC at 50 or 60 Hz via IEC type cord
Option DC:	12V / 24V / 48V DC input
Consumption:	Max. 25 Watt
<b>Regulatory Approval</b>	FCC, CE

<b>KVT15XAE-UK-IP16/IP32 - SW151AE-IP16/IP32 (continued)</b>	
<b>Environmental</b>	
Operating Temperature:	0 to 50°C
Storage Temperature:	-10 to 60°C
Relative humidity:	90%, non-condensing
Shock:	50G peak acceleration (11ms, half-sine wave)
Vibration:	58~100Hz / 0.98G (11ms / cycle)
<b>Product Information</b>	
Dimensions (W x D x H):	443 x 180 x 44 mm / 17.3 x 7.1 x 1.73 inch
Net weight:	4 kg / 9 lb
<b>Packing Information</b>	
Dimension (W x D x H):	510 x 400 x 77 mm / 20.1 x 15.7 x 3 inch
Gross weight:	7 kg / 15 lb

