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Please read this manual thoroughly and follow the **Installation** procedures to prevent any damage to the KVM switch or any connecting device.

Models and Rear Connectors

KVM-0410



KVM-0810



KVM-1610



KVM-0420



KVM-0820



KVM-1620



----- *Introduction*

Overview

The slim LevelOne KVM Switches offer the most reliable and efficient way of managing multiple computers in server rooms where space is at a premium. On Screen Display (OSD) features computer naming, computer selection, status indication, auto scan and much more. Up to 136 servers can be easily managed by cascading multiple KVM switches to expand the capacity. Revolutionized video enhancement technology ensures superb quality up to 1920 x 1440. For secured connection and space saving, all LevelOne KVM switches require just one HDB15 connector for each computer connection.

Two major models are available:

- *PS/2-only models* One HDB15 connector for each PS/2 computer connection: (fit cable : ACC-2001 1.8m cable for PS2, ACC-2002 3m cable for PS2)
- *USB-PS/2 Combo models* One HDB15 connector for each PS/2 or USB computer connection: (fit cable : ACC-2001 1.8m cable for PS2, ACC-2002 3m cable for PS2), (fit cable : ACC-2003 1.8m cable for USB, ACC-2004 3m cable for USB)

Model	Product	For computer with Interface	Suitable for
<i>PS/2-only</i>	KVM-0410	PS/2	PS/2-server
	KVM-0810		
	KVM-1610		
<i>USB-PS/2 Combo</i>	KVM-0420	PS/2 or USB	PS/2-server
	KVM-0820		USB-Sun
	KVM-1620		USB-Mac

Features

- Cascade configuration expands system capability
- 1U-height form factor saves rack spaces

- Unique cables for secured connection
- Auto-scan function automatically selects computer sequentially
- Supports Microsoft IntelliMouse (Pro)
- Assigns computers with unique and meaningful names
- Identifies and selects computers by the names
- Programmable scan filters unused computers
- Store system settings and name entries to non-volatile memory
- Password security locks computer from unauthorized access
- Gains complete control with easy-to-use OSD interface
- Hotkey functions allow easily computer access
- Keyboard states automatically saved and restored when switching computers
- Operating system is independent, transparent to all applications
- Plug-and-play system configuration
- Keyboard and mouse can be hot plugged at any time
- DDC2B compatible
- Optional multimedia module supports microphones and stereo speakers

Configurations

Single KVM Switch Configuration

Use one PS/2 keyboard, mouse and monitor to manage 4, 8 or 16 computers in figure 1.

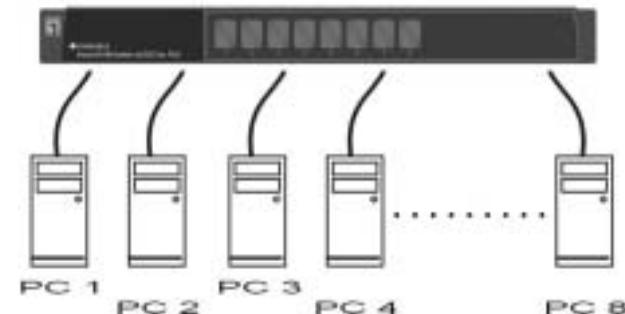


Figure 1: Single KVM Switch configuration

Cascaded KVM Switch (Master/Slave) Configuration

A second level of *Slave* KVM Switches may connect to the *Master* unit to expand system capacity allowing you to manage computers. There is only one *Master* that connects to the PS/2 keyboard, mouse and monitor directly operated by a user. Once connected, LevelOne KVM Switches automatically configure themselves to either *Master* or *Slave*. *Slaves* of different LevelOne KVM Switch models can be mixed in cascade configuration as shown in figure 2.

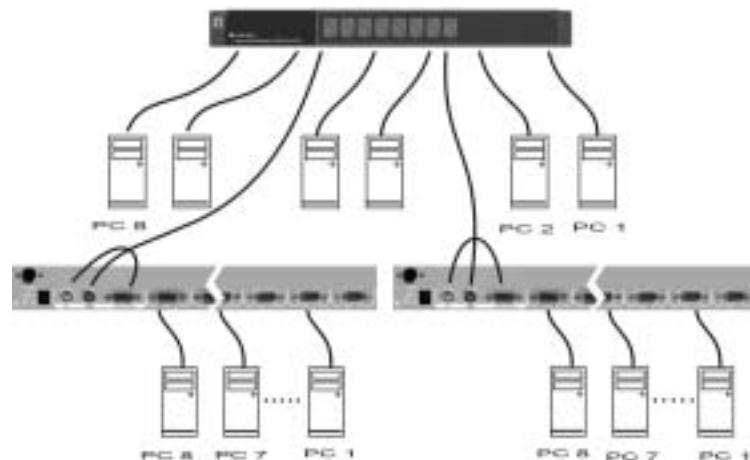


Figure 2: A cascade configuration

Throughout this manual, *Master* is the KVM Switch that connects directly to a PS/2 keyboard, mouse and monitor. *Slave* is a KVM Switch that has its **CONSOLE** port connected to the *Master*'s "PC x" port. *Slave* only exists in cascade configuration.

----- Installation

Make sure all computers and LevelOne KVM Switches are powered down during installation.

Cables

Use only the following cables for connection to computers with PS/2 interface, as shown in figure 3.

Model Name	ACC-2001	ACC-2002
Length	1.8m	3m



Figure 3: 1-to-3 cable for PS/2 computer

Use only the following cables for connection to computers with USB interface, as shown in figure 4.

Model Name	ACC-2003	ACC-2004
Length	1.8m	3m



Figure 4: 1-to-2 cable for USB computer

Device Connection

PS/2-only Model

(KVM-0410, KVM-0810, KVM-1610)

Use a 1-to-3 cable to connect from one of the **PC** ports to the PS/2 keyboard, mouse and monitor ports of computer, as shown in figure 5.

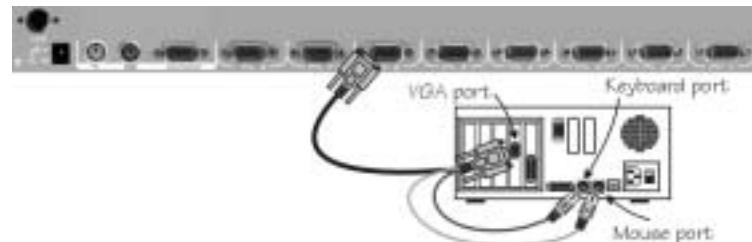


Figure 5: PS/2 computer connection

USB-PS/2 Combo Model

(KVM-0420, KVM-0820, KVM-1620)

To a USB computer: Use a 1-to-2 cable to connect from one of the **PC** ports to the USB port and VGA port of a computer, as shown in figure 6. The computer can be a USB-ready PC, Sun, HP server or a Mac.

To a PS/2 computer: Use a 1-to-3 cable to connect from one of the **PC** ports to the PS/2 keyboard, mouse and monitor ports of a computer, as shown in figure 5.

To a notebook computer: In most cases, all you need is a piece of PS/2 Y-adapter at the notebook PS/2 port. However, some Notebook computers do not follow industry standard, please check your Notebook user's manual for detail.

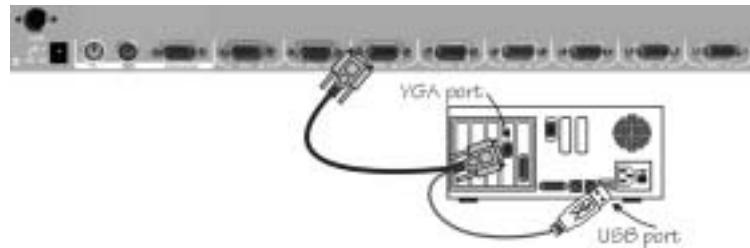


Figure 6: Computer USB Port Connection

Initial Power-Up

You must power up the Master KVM switch that has a PS/2 keyboard, mouse and monitor connected to it before turning on any other devices.

- For single KVM Switch:
 - 1) Apply a power adapter (O/P = 9V DC) to the *Master*.
 - 2) Turn on computers.
- For cascaded KVM Switches:
 - 1) Apply a power adapter (O/P = 9V DC) to the *Master*.
 - 2) Apply power adapters to all *Slaves*.
 - 3) Turn on computers.

Note: You may hot plug additional powered-down computers or a slave Switches without turning any existing KVM switch or computer off after initial power up.

----- Operation -----



Figure 7: Front pushbuttons and LEDs

Pushbuttons

A computer may be selected by pressing the pushbutton directly, by issuing hotkey commands or by activating the OSD window.

Note: For 16-port models: 1 ~ 8 represent the lower 8 ports and A ~ H for the higher 8 ports. To select computer **A**, press and hold pushbutton **1** for 2 seconds; for computer **B**, press and hold pushbutton **2**, etc.

■ K/M RESET

K/M RESET solves most problems developed by keyboard, mouse, device replacement or change of configuration. Press down both the front-panel number **1** and **2** pushbuttons for 2 seconds to re-configure the whole system without turning either the KVM Switch or any computer off.

■ AUTO SCAN

LevelOne KVM Switch provides an easy-to-use feature to start *Auto Scanning*. For 8 and 16-port, you can press down both the front-panel number **7** and **8** pushbuttons for 2 seconds to start Auto Scanning. And for 4-port KVM, you can press down both number **3** and **4** to start Auto Scanning.

LEDs

The lighting red LED indicates the port that is selected. The port is

either Auto Scan or Manual Scan mode if the red LED flashes. Green LED is lighting when the port connects a power-on computer. There are 2 rows of LEDs for 16-port switches, the lower row is for numerical ports ("1" ~ "8") and the upper row is for alphabetical ports ("A" ~ "B").

OSD (On-Screen-Display) Operation

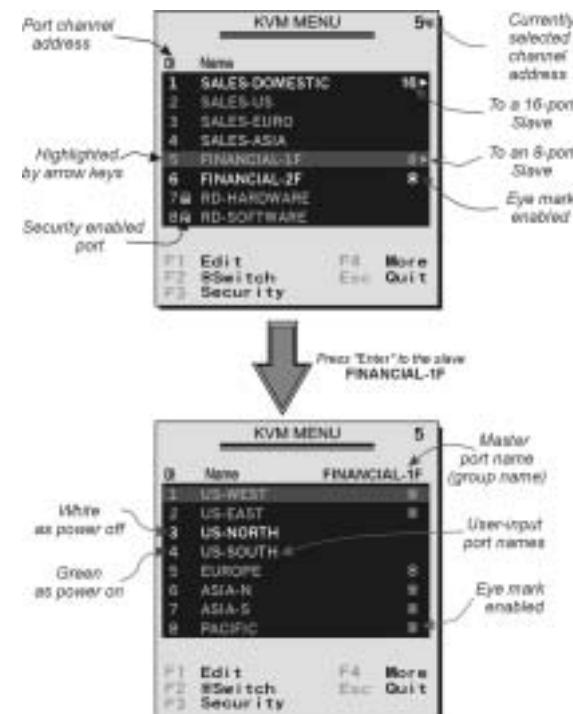


Figure 8: OSD screen illustration
USB-PS/2 Combo models offer **F5**, see Function key <**F5**>

By hitting the left <CTRL> key twice within two seconds, you may see the '**Hotkey Menu**' if it is enabled (an OSD option). Or, by hitting the left <CTRL> key three times within two seconds, you will see a '**KVM MENU**' screen showing a list of the computers with corresponding

port numbers, names and status, see figure 8.

The port number of the currently selected computer is displayed in red, same as the front indicator, at the upper-right corner of the OSD menu.

The color of a device name is green if it has power and is ready for operation, or white as it has no power. OSD menu updates the color when it is activated. For 16-port models, pressing the <PageUp> and <PageDown> keys to view 8 other computers.

Use the “ \uparrow ”, “ \downarrow ”, “1” ~ “8” or “A” ~ “H” to highlight a computer and the <ENTER> key to select it. Or, you may press <ESCAPE> to exit OSD and remove the OSD menu from the display; the status window returns to the display and indicates the currently selected computer or operating status.

A triangle mark (►) to the right of a name indicates the port is cascaded to a *Slave*; the number at the left of the triangle mark shows the number of ports the *Slave* has, i.e. 8► for an 8-port Switch. <ENTER> key brings you one level down and another screen pops up listing the names of the computers on that *Slave*. The name of the *Slave* will be shown at the upper right corner of the OSD menu. It is useful to group computers and still be able to see the group name.

An eye mark (👁) on the right of a name indicates that computer is selected and monitored in Scan mode. In OSD, this mark can be switched on or off by function key <F2>.

Press <ESCAPE> key to exit OSD and to return to the selected computer; the computer name is also shown on the screen.

● Function key <F1>: To edit name entry of a computer or a *Slave* with up to 14 characters for 8- or 16-port models, and 8 characters for 4-port models. First, highlight a port then press <F1> followed by name entry. Valid characters are ‘A’~‘Z’, ‘0’~‘9’ and the dash character. Lowercase letters are converted to uppercase ones. Press <BACKSPACE> to delete a letter one at a time. Non-volatile memory stores all name entries until you change, even if the unit is powered down.

● Function key <F2>: To switch the eye mark (👁) of a computer on or off. First, use the <UP> and <DOWN> arrow keys to highlight it, then press <F2> to switch its eye mark on or off. If Scan Type is ‘Ready PC +👁’, only the power-on and eye mark selected computers will be displayed sequentially in Scan mode.

● Function key <F3>: To lock a computer from unauthorized access. To lock a device, highlight it then press <F3>. Now, enter up to 4 characters ('A'~'Z', '0'~'9', '-') followed by <ENTER> as new password. A Security-enabled device is marked with a lock (🔒) following its port number. To *permanently* disable the security function from a locked device, highlight it, press <F3> then enter the password. For 4-port models, only one port can be password secured.

If you want to access the locked device *temporarily*, simply highlight it and press <ENTER>, the OSD will ask you for the password. After entering the correct password, you are allowed to use the device. This device is automatically re-locked once you switch to another port. During Scan mode, OSD skips the password-protected devices.

**If you forget the password, the only way to permanently erase all the passwords is to: (for 8- and 16-port switches)
Press and hold the front panel buttons “1” and “2”, then hold “7” and “8”. Release “7” and “8”, then release “1” and “2”.**

For 4-port KVM switches: If you forget the password, the only way to permanently disable the security function is to remove all possible power sources from the master KVM switch. You need to turn off all computers and unplug the power adapter, then restart everything.

● Function key <F4>: More functions are available by hitting <F4>. A new screen pops up displaying more functions as described below. Most of them are marked with a triangle (►) indicating there are options to choose from. Using the <UP> and <DOWN> arrow keys, select the functions and press

<ENTER>. Available options will be shown in the middle of the screen. Again, using the <UP> and <DOWN> arrow keys to view options then press <ENTER> to select it. You can press <ESCAPE> to exit at any time.

■ Auto Scan

In this mode, the KVM switch automatically switches from one power-on computer to the next sequentially in a fixed interval. During *Auto Scan* mode, the OSD displays the name of the selected computer. When *Auto Scan* detects any keyboard or mouse activity, it suspends the scanning till activity stops; it then resumes with the next computer in sequence. To abort the *Auto Scan* mode, press the left <CTRL> twice, or, press any front button. *Scan Type* and *Scan Rate* set the scan pattern. *Scan Type* (<F4>:More\Scan Type) determines if scanned computers must also be eye mark selected. *Scan Rate* (<F4>:More\Scan Rate) sets the display interval when a computer is selected before selecting the next one.

■ Manual Scan

Scan through power-on computers one by one by keyboard control. You can type (<F4>:More\Scan Type) to determine if scanned computers must also be eye mark selected. Press the up arrow key (↑) to select the previous computer and the down arrow key (↓) to select the next computer. Press any other key to abort the Manual Scan mode

■ Audio Stick

An optional multimedia module can be **LINKed** to the back of each KVM Switch for selecting microphone and stereo speaker signals. There are two options for *Audio Stick*: **ON** and **Off**. When set to 'On', audio selection follows computer selection. When set to 'Off', audio selection stops following computer selection. It is useful if you want to listen to a particular computer's audio signal while operating other computers. The non-volatile memory stores the *Audio Stick* setting.

■ Scan Type

Ready PC +: In Scan mode, scan through power-on and eye mark selected computers.

Ready PC: In Scan mode, scan through power-on computers.

Only: In Scan mode, scan through any selected computer regardless of computer power status. This option is not available for 4-port models.

The non-volatile memory stores the *Scan Type* setting.

■ Scan Rate

Sets the duration of a computer displayed in *Auto Scan* mode. The options are **3 seconds**, **8 seconds**, **15 seconds** and **30 seconds**. The non-volatile memory stores the *Scan Rate* setting.

■ Keyboard Speed

LevelOne KVM switch offers keyboard typematic setting that overrides the similar settings in BIOS and in Windows. Available speed options are **Low**, **Middle**, **Fast** and **Faster** as 10, 15, 20 and 30 characters/sec respectively. The non-volatile memory stores the *Keyboard Speed* setting.

■ Hotkey Menu

When you hit the left <CTRL> key twice within two seconds, the "Hotkey Menu" appears displaying a list of hotkey commands if the option is **On**. The 'Hotkey Menu' can be turned **Off** if you prefer not to see it when the left <CTRL> key is hit twice. The non-volatile memory stores the *Hotkey Menu* setting.

■ CH Display

Auto Off: After you select a computer, the port number and name of the computer will appear on the screen for 3 seconds then disappear automatically. **Always On:** The port number and name of a selected computer and/or OSD status displayed on the screen all the time. The

non-volatile memory stores the CH Display setting.

■ Position

The position of the selected computer and/or OSD status displays on screen during operation. The actual display position shifts due to different VGA resolution, the higher the resolution the higher the displayed position. The non-volatile memory stores the Position setting.

Upper Left, Upper Right,

Lower Left, Lower Right.

Middle.

- **Function key <F5>: <For KVM-0420, KVM-0820, KVM-1620 only>** To switch the Sun mark of a port on or off indicating the computer is a Sun server as shown in figure 9. Sun servers have more keys on the keyboard than a PC. When a Sun-marked port is selected, the KVM Switch starts to translate the keys from a PS/2 keyboard to a Sun keyboard. See *Sun Keyboard Mapping* for detail.

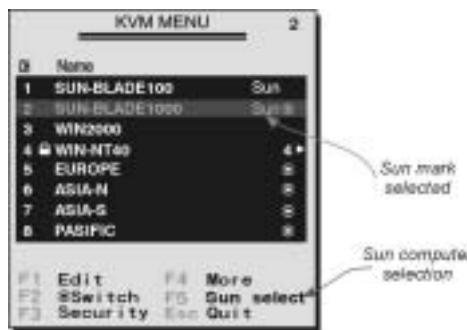


Figure 9: OSD screen for Hybrid model and the Sun mark

- **ESC:** To exit the OSD, press the <ESCAPE> key.

Hotkey commands

Hotkey command is a short keyboard sequence to select a computer, to activate computer scan, etc. The KVM switch interprets keystrokes for hotkeys all the time. A hotkey sequence starts with two left <CTRL> keystrokes followed by one or two more keystrokes. A built-in buzzer generates a high-pitch beep for correct hotkey command; otherwise, one low-pitch beep for error and the bad key sequence will not be forwarded to the selected computer.

The short form hotkey menu can be turned on as an OSD function (<F4>: more\Hotkey Menu) every time the left <CTRL> key is pressed twice.

L-CTRL: is the <CTRL> key located at the left side of the keyboard.

1~8/A~H: are the number keys '1' ~ '8' at the upper row of the keyboard and character keys 'A' ~ 'H' case insensitive. *Do not use the keypad at the right of the keyboard.*

- To select a computer by hotkey command, you must know its port number, which is determined by the KVM Switch connection. For a computer connected to a *Master*, the label of **1~8** or **A~H** represent its port. For a computer connected to a *Slave*, two characters represent its port. The first character is the port number of the *Master* unit (**1~8**) and the second one is the port number of the *Slave* (**1~8** or **A~H**). Please note that only *Master's 'PC 1' ~'PC 8'* ports can be connected to a *Slave*

Left Ctrl + left Ctrl + 7

Selects a computer connected to port 7 of the *Master*.

Left Ctrl + left Ctrl + 6 + C

Selects a computer connected to port C of a *Slave* connected to port 6 of the *Master*.

- To start *Auto Scan*, automatically scan power-on computers one by one at a fixed interval:

Left Ctrl + left Ctrl + F 1

When *Auto Scan* detects any keyboard or mouse activity, it suspends the scanning till activity stops; it then resumes with the

next computer in sequence. The length of the *Auto Scan* interval (*Scan Rate*) is adjustable. To abort the *Auto Scan* mode, press the left **Ctrl** key twice.

Note: *Scan Type* determines whether an eye-marked computer is to be displayed during *Auto Scan*.

- *Manual Scan* enables you to manually switch back and forth between power-on computers.

Left **Ctrl** + left **Ctrl** + **F2**

Press ↑ or ↓ to select the previous or the next computer in sequence. And, press any other key to abort the *Manual Scan*.

Note: *Scan Type* determines whether an eye-marked computer is to be displayed during *Auto Scan*.

- To adjust *Scan Rate* which sets the duration before switching to the next computer in *Auto Scan*:

Left **Ctrl** + left **Ctrl** + **F3**

The KVM switch beeps one to four times indicating the scan interval of **3**, **8**, **15** and **30** seconds respectively..

- To adjust keyboard typematic rate (characters/sec), this setting over-rides that of BIOS and any operating system:

Left **Ctrl** + left **Ctrl** + **F4**

The KVM switch beeps 1 to 4 times corresponding to **10**, **15**, **20** and **30** characters/sec respectively.

- *Audio Stick*

An optional multimedia module can be LINKed to the back of each KVM switch for selecting microphone and stereo speaker signals. There are two options for *Audio Stick*: **ON** and **Off**. When set to '**On**', audio selection follows computer selection. When set to '**Off**', audio selection stops following computer selection. It is useful if you want to listen to a particular computer's audio signal while operating other computers.

Left **Ctrl** + left **Ctrl** + **F5**

The KVM switch beeps once or twice corresponding to **On** and **Off** respectively.

Cascade Configuration

Connection

Before connecting a device (a computer or a Slave KVM Switch) to a KVM Switch under power, you must turn off the device.

Note: The Master must have equal or more 'PC x' ports than that of the Slave, i.e., if an 8-port switch is the master, a 4-port or an 8-port switch can be a Slave, but not a 16-port one. PS/2-only models can be cascaded with USB-PS/2 combo models.

The ports labeled "PC 1"~"PC 8" can be connected to either a computer or a Slave's **CONSOLE** port, as shown in figure 10. The ports "PC A"~"PC H" can only be connected to computers.

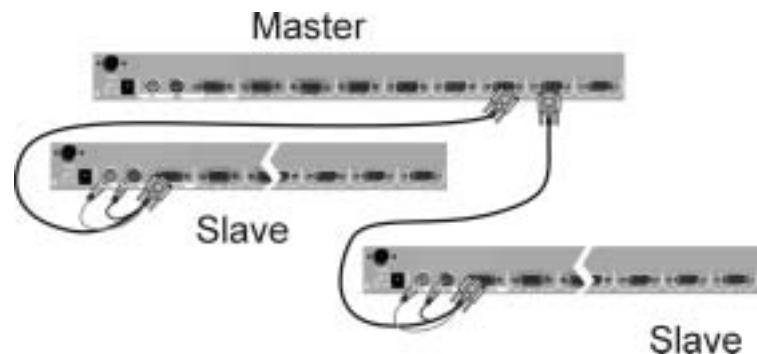


Figure 10: Slave console connection

Note: Use only 1-to-3 (PS/2) cables for connection between the Master's **PC** ports and a Slave's **CONSOLE** port in cascade application.

The maximum number of computers controlled by a master/slave configuration with all 4-port units is 16 -- with 4 Slaves and each Slave connects to 4 computers, see figure 11.

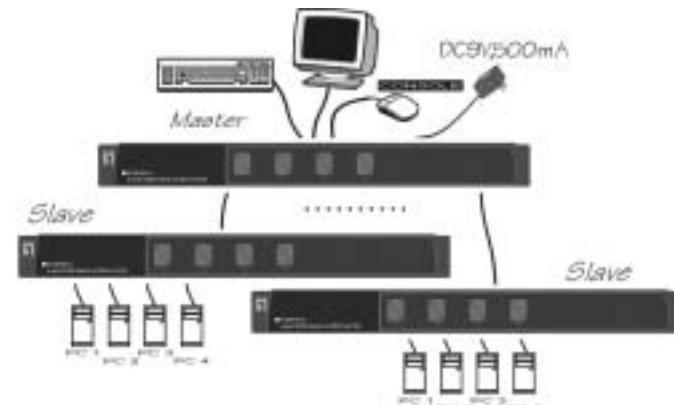


Figure 11: All 4-port KVM Switches in cascade

The maximum number of computers controlled by a master/slave configuration with all 8-port units is 64 -- with 8 Slaves and each Slave connects to 8 computers, see figure 12.

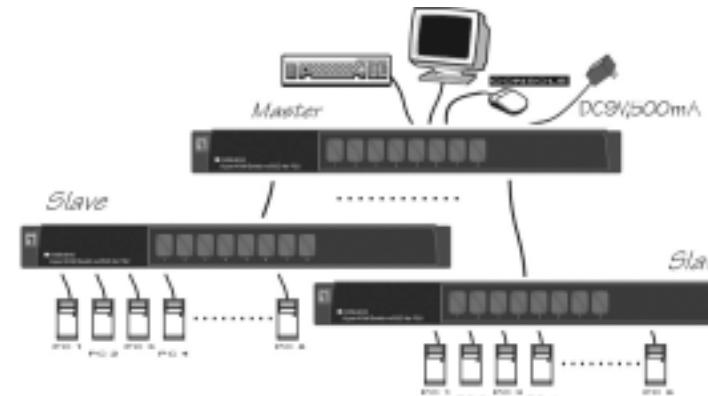


Figure 12: All 8-port KVM Switches in cascade

The maximum number of computers controlled by a master/slave configuration with all 16-port units is 136 -- with 8 units of 16-port Slaves (to "PC 1"~"PC 8") and each Slave connects to 16 computers;

plus 8 more computers directly connect to the Master (to "PC A"~"PC H"), see figure 13.

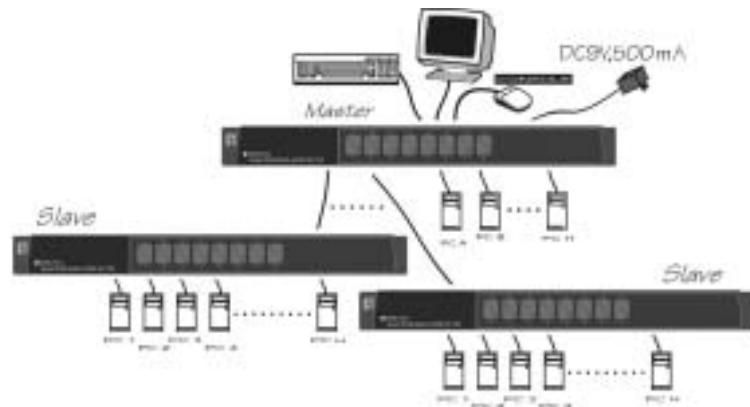


Figure 13: All 16-port KVM Switches in cascade

For OSD menu:

After connection completes, you should re-activate the OSD menu to check if the *Master* recognizes the *Slaves*. A triangle mark (►) is placed to the right of the channel name indicating the port is connected to a *Slave* not a computer. A number to the left of the triangle mark indicates the *Slave* model, i.e. 8► for an 8-port Switch.

Change Configuration while Running

A device (a computer or a KVM Switch) at any 'PC x' port can be changed at any time after initial power-up. If you change any one of the "PC 1" to "PC 8" ports connection from a computer to a *Slave* KVM switch or vice versa, or replace the devices of a port; the OSD

will update this change the next time it is activated.

Note: Any new device must be turned off before it is connected to the Master.

----- Sun/Mac Keyboard Mapping

For USB-PS/2 Combo models

The USB-PS/2 Combo models emulate a Sun's keyboard and mouse when a computer is marked with a **Sun** in OSD menu by Function key <F5>. A Sun keyboard has more keys than a standard PS/2 one. These extra keys simulate by tapping the lower-right **Ctrl** followed by one of the function keys on the PS/2 keyboard (i.e. combo key). For instance, tap the lower-right **Ctrl** key, and then tap the function key **F7** to activate **Open** for a Sun computer.

From PS/2 keyboard	Map to Sun keyboard	Map to Mac keyboard
right - Ctrl 1	○	
right - Ctrl 2	○ -	
right - Ctrl 3	○ +	
right - Ctrl 4	○	△ power
right - Ctrl F1	Stop	
right - Ctrl F2	Again	
right - Ctrl F3	Props	
right - Ctrl F4	Undo	
right - Ctrl F5	Front	
right - Ctrl F6	Copy	
right - Ctrl F7	Open	
right - Ctrl F8	Paste	
right - Ctrl F9	Find	
right - Ctrl F10	Cut	
Print Screen		F13
Scroll Lock		F14
Pause Break		F15
right - Ctrl H	Help	
right - Window	right - ♦	right - ■
left - Window	left - ♦	left - ■
Context key	Compose	
right - Alt	Alt Graph	right - Option
left - Alt	Alt	left - Option

----- Appendices -----

Specifications:

PS/2-only models

Specifications	PS/2 only models		
	KVM-0410	KVM-0810	KVM-1610
Computer port number	4	8	16
Cascade control PC number	Up to 16*	Up to 64*	Up to 136*
Cable Model Name	1-to-3 for PS/2 computer only ACC-2001 1.8M cable, ACC-2002 3M cable		
On-screen display (OSD)	Yes		
Pushbutton control	4	8	
Computer ready LED, green	4	8	16
Computer selected LED, red	4	8	16
Hot plug-and-play	Yes		
Hotkey control	Yes		
Rack-mounted	19" industry-standard		
Automatic scan interval	3, 8, 15, 30 seconds		
Programmable scan pattern	3 options available		
Security control	14-character password per computer		
Cable length (Max)	30M (100ft) at CONSOLE 30M (100ft) at PC ports		
VGA bandwidth	1920 x 1440, DDC2B		
Computer connector	HDB15 male x 4	HDB15 male x 8	HDB15 male x 16
Console connector	PS/2 Keyboard female x 1 PS/2 mouse female x 1 HDB-15 monitor female x 1		
H x W x D (mm) (in.)	40 x 404 x 114 1.6 x 15.9 x 4.5		
Rear-mount brackets	1U-height, included		
size	1U		
Power supply (min)	External power adapter w/9V DC, 500mA		

* Maximum control when cascaded with models of the same type.

USB-PS/2 Combo models

Specifications	USB-PS/2 Combo		
	KVM-0420	KVM-0820	KVM-1620
Computer port number	4	8	16
Cascade control PC number	Up to 16*	Up to 64*	Up to 136*
Cable Model Name	1-to-2, for USB computer only ACC-2003 1.8M cable, ACC-2004 3M cable 1-to-3, for PS/2 computer only ACC-2001 1.8M cable, ACC-2002 3M cable		
Applicable to computer	PS/2 PC, USB-Sun, USB-Mac		
On-screen display (OSD)	Yes		
Pushbutton control	4	8	
Computer ready LED, green	4	8	16
Computer selected LED, red	4	8	16
Hot plug-and-play	Yes		
Hotkey control	Yes		
Rack-mounted	19" industry-standard		
Automatic scan interval	3, 8, 15, 30 seconds		
Programmable scan pattern	3 options available		
Security control	14-character password per computer		
Cable length (Max)	30M (100ft) at CONSOLE 30M (100ft) at PC ports for PS/2 computer 5M at PC ports for USB computer		
VGA bandwidth	1920 x 1440, DDC2B		
Computer connector	HDB15 male x 4	HDB15 male x 8	HDB15 male x 16
Console connector	PS/2 Keyboard, female x 1 PS/2 mouse, female x 1 HDB-15 monitor, female x 1		
H x W x D (mm) (in.)	40x404x114 1.6x15.9x4.5		
Rear-mount brackets	1U-height, included		
size	1U		
Power supply (min)	External power adapter w/9V DC, 500mA		

* Maximum control when cascaded with models of the same type.

Troubleshooting:

Ensure that all cables are well seated. Check that keyboard/mouse cables are not swapped. Label and bundle the cables for each computer to avoid confusion when connected to the KVM switch.

Symptom Possible causes Recommended solutions

Mouse does not work	Too many mouse driver installed in the computer Improper mouse driver	Make sure there is only one mouse driver installed in each computer. Use M/S mouse driver.
VGA monitor works fine but keyboard and mouse do not work.	Check the keyboard and mouse connection, be sure the cables are not swapped. Incorrect cables	Connect the cables according to the keyboard and mouse marks on the connectors Only USB-PS/2 models support USB computer connection
VGA image is not clear	Poor quality VGA cables	Use UL-2919 rated, double-shielded VGA cables
No screen image, or no OSD menu	A power-on computer is not selected	Turn on a computer and select it by the front pushbuttons
Unable to operate USB-Sun server	Incorrect KVM switch model Sun mark is not selected in OSD menu	Use only the USB-PS/2 KVM switch model and 1-to-2 cables. Invoke the OSD menu, move the light bar to the port, press <F5> to set the Sun mark on.
Keyboard error on boot	Loose keyboard connection	Make sure keyboard cables are Well seated
Alphabets on the TFT LCD display are blur or have shadows.	Improper resolution settings	Under Control Panel, set the VGA output of computers to match the highest resolution of the LCD monitor with "Large Font" for the best performance.
Auto Scan does not switch PC and the KVM switch beeps from time to time while a red indicator flashes	All PCs are off or only one PC is turned on. Scan mode works for power-on computers only Scan type is eye mark selected but no power-up PC is eye mark selected in OSD.	Turn on computers Set proper Scan Type in OSD and determine which PCs are eye mark selected, do it in OSD. Press left CTRL key twice to abort Auto Scan mode. Press any front button to select a PC, and Auto Scan stops

Master/slave does not work	Improper installation procedures Improper cables between the Mater and a Slave KVM switch	Make sure slave's CONSOLE is connected to Master's PC 1~ PC 8 port. Use only 1-to-3 PS/2 cables for cascade connection Press and hold the 1 and 2 push buttons to initiate K/M reset Remove any possible power supply to the slave (unplug all cables), before connecting it to the Master
Keyboard strokes shifted	The computer was in shifted state when last switched	Press both SHIFT keys
The ↑ and ↓ keys do not work in Manual Scan	All PCs are off or only one PC is turned on. Scan mode works for power-on computers only Scan type is eye mark selected but no PC is eye mark selected in OSD.	Turn computers on. Press any other key to abort Manual Scan mode. Set proper Scan type in OSD and determine which PCs are eye mark selected, do it in OSD.
Double OSD images at cascade configuration	Improper slave connection procedures.	Press pushbuttons 1 and 2 down for 2 seconds to activate K/M RESET Remove any possible power supply to the Slave (unplug all cables), before connecting it to the Master
OSD menu is not at the proper position	OSD menu has fixed resolution and its size varies as computer VGA resolution changes.	Use <F4>:More\Position to select UL or UR. OSD menu may appear near the middle of the screen when LL or LR is selected.
Can not select a computer connected to a slave	Improper Master unit connection Improper slave unit connection Too many levels of slaves	Only Master ports PC1~PC8 can be connected to slaves. Connect slave CONSOLE port to PC1~PC8 ports of the Master by 1-to-3 PS/2 cables Only one level of slave units is allowed. Pop up OSD again to check if Master recognizes the slave connection. Look for triangle mark and the number before it.

From PS/2 keyboard	Map to Sun keyboard
<i>right - Ctrl 1</i>	⌚
<i>right - Ctrl 2</i>	⌚-
<i>right - Ctrl 3</i>	⌚+
<i>right - Ctrl 4</i>	⌚
<i>right - Ctrl F1</i>	Stop
<i>right - Ctrl F2</i>	Again
<i>right - Ctrl F3</i>	Props
<i>right - Ctrl F4</i>	Undo
<i>right - Ctrl F5</i>	Front
<i>right - Ctrl F6</i>	Copy
<i>right - Ctrl F7</i>	Open
<i>right - Ctrl F8</i>	Paste
<i>right - Ctrl F9</i>	Find
<i>right - Ctrl F10</i>	Cut
<i>right - Ctrl H</i>	Help
<i>right - Window</i>	<i>right - ♦</i>
<i>left - Window</i>	<i>left - ♦</i>
Context key	Compose
<i>right - Alt</i>	Alt Graph
<i>left - Alt</i>	Alt

From PS/2 keyboard	Map to Mac keyboard
<i>right - Ctrl 4</i>	◀ power
Print Screen	F13
Scroll Lock	F14
Pause Break	F15
<i>right - Window</i>	<i>right - ⌘</i>
<i>left - Window</i>	<i>left - ⌘</i>
<i>right - Alt</i>	<i>right - Option</i>
<i>left - Alt</i>	<i>left - Option</i>

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