ServView17" - Switch Modules

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ServView KVM Switch Modules

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

FC CE

Introduction

Overview

The combination of ServView console and ServView KVM Switch Module offers the latest and the most efficient way of controlling server rooms and multiple computers. Many models of ServView KVM Switch Modules are available to control from 8 to 136 servers by the ServView console or another set of console 100ft (30m) away; it is the ultimate tool for server management.

There are many models of ServView KVM Switches modules with different computer interfaces available:
-   ***Standard models*** with three connectors for PS/2 keyboard, PS/2 mouse and monitor (HDB15), as shown in Figure 1.
-   ***Hybrid "PS/2 + USB" models*** with PS/2 keyboard, PS/2 mouse, USB (keyboard + mouse) and monitor (HDB15), as shown in Figure 2.
-   ***Slim PS/2 models*** with special 3-in-1 connectors for PS/2 keyboard, mouse and monitor (HDB15), as shown in Figure 3.

Figure 3: Slim PS/2 3-in-1 connectors and cables
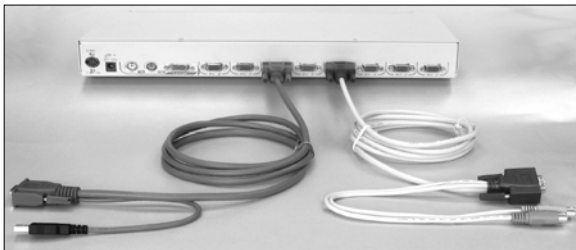
Slim USB+PS/2, 3-in-1 connectors and cables

On-Screen Display (OSD) Menu

With an ServView KVM Switch module, you can name your computers, switch to a computer from a list, configure settings with easy-to-use menus, view the name of the selected computer on-screen with programmable time interval. The OSD menu displays the system status throughout operation.

High Video Quality

ServView's LCD panel supports VGA resolution up to 1024x768 without any degradation. The advanced VGA circuit design guarantees smooth and flicker-free switching from one computer to the other with cable length up to 100ft (30M)* at PC sides with ServView KVM Switch.

*Tested w/ high-quality UL2919-rated, low-loss and shielded cables.

Features for all models

- Auto-scan automatically selects computers sequentially
- Supports Microsoft IntelliMouse (Pro)
- Assign computers with unique and meaningful names
- Identify and select 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
- Gain complete control with easy-to-use OSD interface
- Hotkey functions allow easy computer access
- Keyboard states automatically saved and restored when switching computers
- Operating system independent, transparent to all applications
- Plug and play system configuration
- Keyboard and mouse can be hot plugged at any time
- DDC2B compatible

Features for Slim PS/2 KVM ServView KVM Switch Models

- Special 3-in-1 cables save spaces and offer the most flexibility
- 16-port model is only 1U in height

Features for Slim "USB + PS/2" KVM Switch Models

- Unique loose-free, 3-in-1 cables save spaces, ideal for computers with PS/2 or USB interfaces, such as PS, USB-Sun and USB-Mac.

Configurations

ServView KVM Switch Modules are available for 4, 8, and 16 ports with various interfaces. For the applications of requiring many computers, ServView KVM Switch Modules.

Single ServView KVM Switch Module Configuration

Combined with an ServView 17", the ServView KVM Switch Module can be connected to multiple computers with keyboard, mouse, and monitor cables as shown in Figure 4.
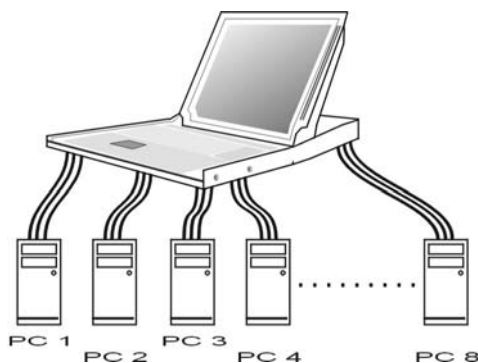

Figure 4: A single ServView KVM Switch Module configuration

Installation

Device Connection

Standard Models

Determine the port number of each computer. For computers using PS/2 mouse, connect the computer's mouse and keyboard cables to the ServView's connectors marked with a mouse and keyboard respectively, as shown in Figure 6. Repeat this step for **PC 1** to **PC 8**.
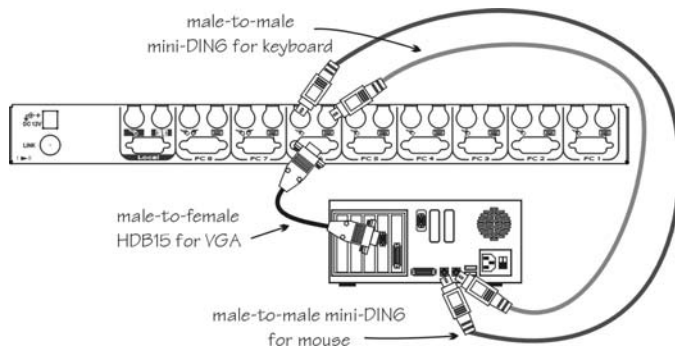

Figure 6: Master computer connection

For computers using serial mouse, connect the *DB-9 to mini-DIN-6 adapter* (included with the switch) to the computer mouse port, then use PS/2 cables to connect the mouse to ServView, see Figure 7. Connect the computer's monitor cable to the HD-DB-15 VGA connector. **Note:** *This function is only available for* **PC 7** *and* **PC 8** *marked with two mice.*

Figure 7: Serial (AT) mouse and PS/2 mouse connection
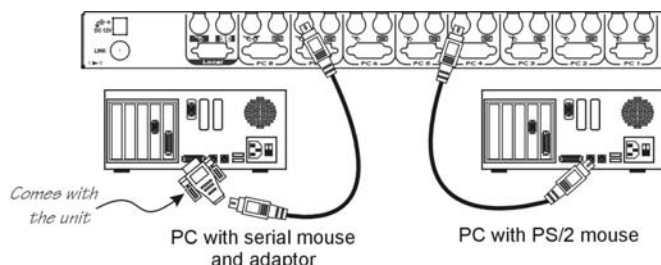
Hybrid "PS/2 + USB" Model

You can only connect to a computer using either PS/2 or USB port.

To a USB computer: Use a USB A-B cable to connect from one of the **PC** ports to the USB port of a computer (A connector, flat connector), as shown in Figure 8. The computer can be a USB-ready PC, Sun, HP server, or a Mac.

To a PS/2 computer: Connect a "*PS/2 Y-adapter*", comes with the unit, to the **PS/2** port at **PC** side, then use two mini-DIN6 male-to-male cables for keyboard and mouse, see Figure 9. There are two mini-DIN6 female connectors on the "*PS/2 Y-adapter*" marked with keyboard and mouse, be sure not to swap the connections.

To a Laptop computer: In most cases, all you need is one PS/2 male-to-male cable connected between the KVM Switch Module and your Laptop; the Y-adapter in not necessary as shown in Figure 10. However, some Laptop computers do not follow industry standard, please check your Laptop user's manual for detail.
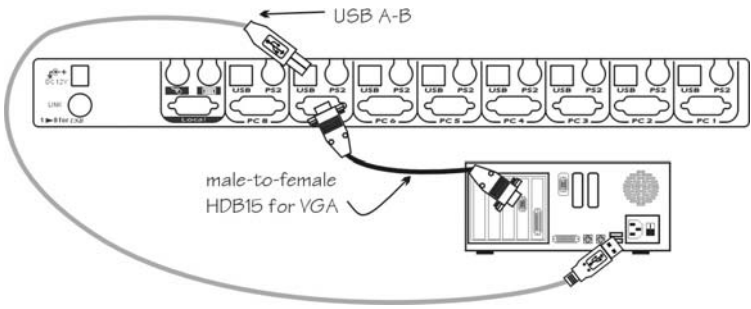
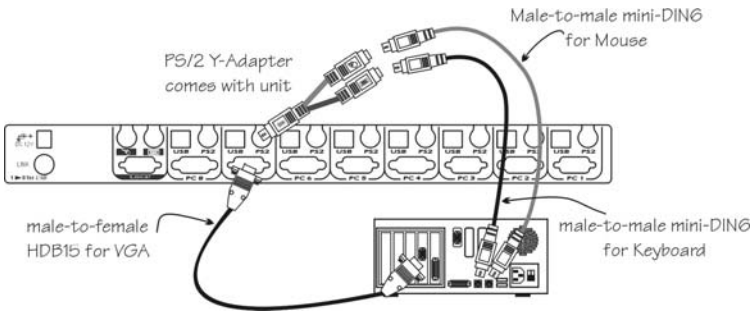*Figure 8: Computer USB Port Connection*
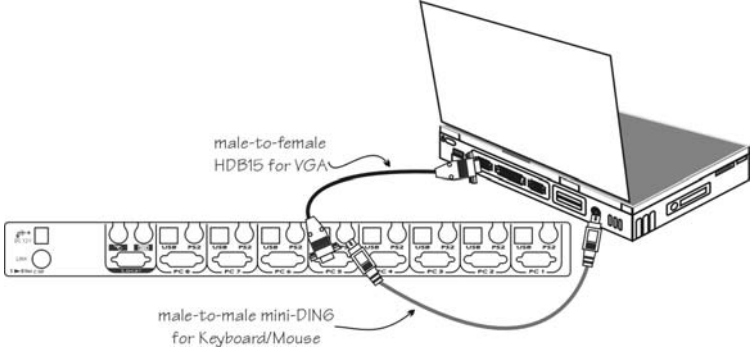

Figure 9: Computer PS/2 Port Connection

Figure 10: Laptop PS/2 Port Connection

Slim Models

Use only the special cables as shown in Figure 11a and 11b.

Figure 11a: For PS/2 computers

Figure 11b: For USB computers

Co   *Figure 11a: For PS/2 computers*   mod   *Figure 11b: For USB computers*   a USB computer is shown in Figure 12.
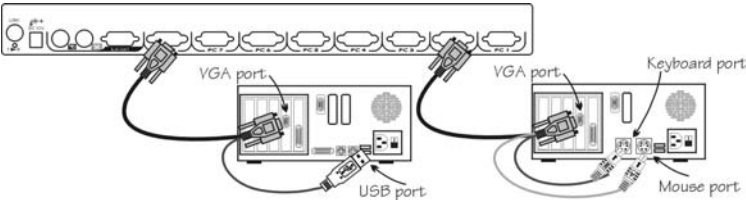
Figure 12: Connections for the special cables

Initial Power-Up

Make sure all computers and ServView KVM Switch Modules are powered down during the installation. You must power up the ServView Switch Module before turning on any other devices.

- ◼   *For ServView KVM Switch Module:*
    1) Apply a power adapter (O/P = 12V DC) to the *Switch Module*.
    2) Turn on computers.

Note: *You may hot plug additional powered-down computer without turning any existing computer off after initial power up.*

Operation

Push-Buttons

A computer may be selected by pressing the push button directly, by issuing hotkey commands or by activating the OSD window. The indicator changes to reflect the computer port selected (red). The indicator flashes red when it is in either *Auto Scan* or *Manual Scan* mode.

Note: *For 16-port modules: **1 ~ 8** represent the lower 8 ports and **A ~ H** for the higher 8 ports. Push the same button twice for higher 8 ports, for example, push button 1 twice for port **A**, and so forth. OSD menu and hotkeys are available for computer selection.*

■ **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` push-buttons for 2 seconds to re-configure the whole system without turning either the ServView Switch Module or any computer off.

■ **AUTO SCAN**

ServView KVM Switch Module provides an easy to use feature to start *Auto Scan*ning. You can press down both the front-panel number `7` and `8` buttons for 2 seconds to start Auto Scanning. For 4-port models, press number `3` and `4` instead.

OSD (On-Screen-Display) Operation
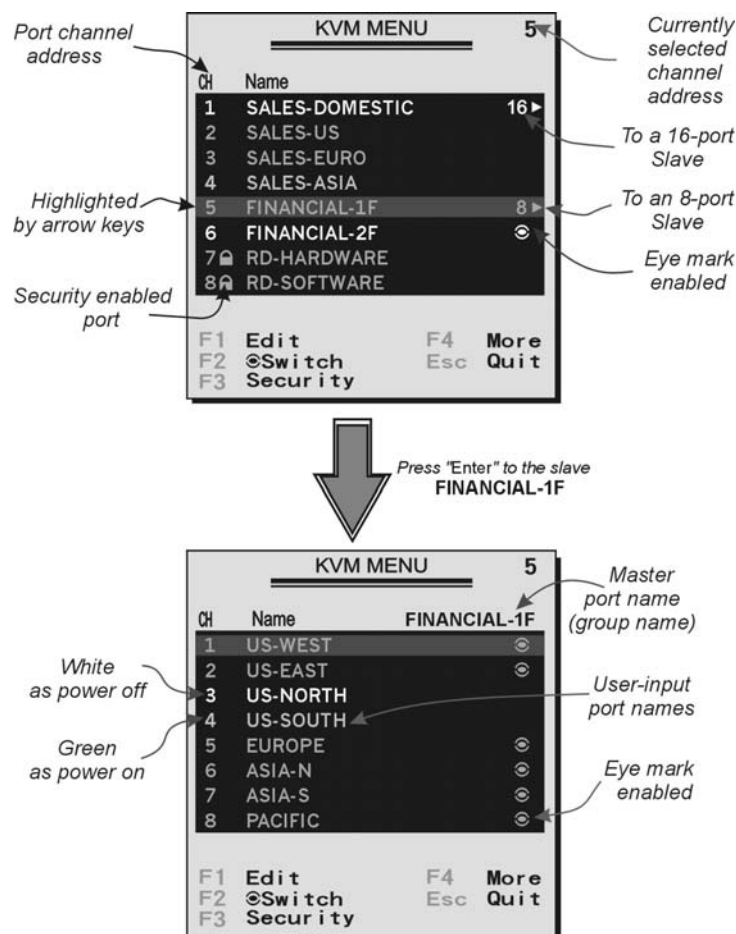
Figure 14: OSD screen illustration
Only Hybrid model offers **F5***, see Function key* `F5`

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 14.

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

The color of a device name is green if it has power and is ready for operation, or the color is white as it has no power. OSD menu updates the color when it is activated. Pressing the **PageUp** and **PageDown** keys to view 8 other computers.

Use the " ↑ ", " ↓ ", " **1** " ~ " **8** " or " **A** " ~ " **H** " to highlight a computer and the **ENTER** key to select it. Or, you may press **ESC** 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 (�">) to the right of a name indicating the computer is selected to be monitored in Scan mode. In OSD, this mark can be switched on or off by function key **F2** .

Press **ESC** 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. 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 ↑ and ↓ arrow keys to highlight it, and 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.

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.

● 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 " ↑ " and " ↓ " arrow keys, select the functions and press **ENTER** . Available options will be shown in the middle of the screen. Again, using the " ↑ " and " ↓ " arrow keys to view options then press **ENTER** to select it. You can press **ESC** to exit at any time.

■ *Auto Scan*

In this mode, the ServView 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. Type (`F4` :More\Scan Type) determines 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*

Not applicable.

■ *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.
    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*

ServView 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 name and/or OSD status is displayed on screen during the operation. The actual display position shifts due to the different VGA resolution, the higher the resolution the higher the display position. The non-volatile memory stores the Position setting.
Upper Left, **Upper Right**,
Lower Left, **Lower Right**.
Middle.

■ *Country Code for Sun*

Sun keyboards of different languages have different layouts. The ServView KVM Switch Module is able to emulate a Sun keyboard for a specific language type (or country: Arabic, Belgian … US, Yugoslavia). Select the proper country code that matches ***ALL*** of your Sun computers.

■ *Max. Resolution*

You can adjust the monitor resolution under this sub-menu. There are the following selections:1024*768, 1280*1024,1600*1200,1920*1440, and "DDC2B Disable".

● Function key **F5** :

To switch the **Sun** mark of a port on or off indicating the computer is a Sun server as shown in Figure 15. 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.
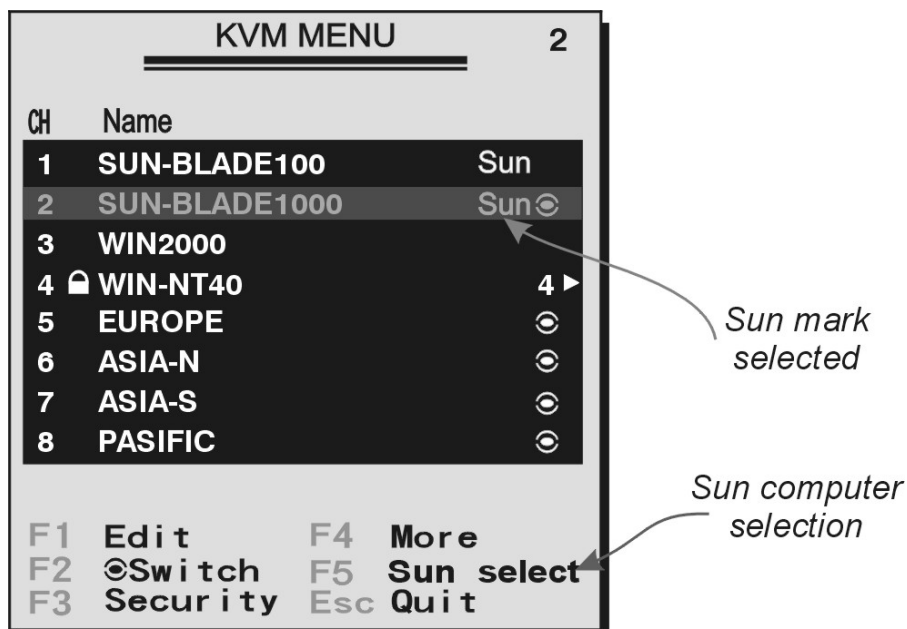

Figure 15: OSD screen for USB+PS/2 model and the Sun mark

● **ESC** : To exit the OSD, press the **ESC** key.

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Hotkey commands

Hotkey command is a short keyboard sequence to select a computer, to activate computer scan, etc. ServView 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 ServView KVM Switch Module connection. For a computer connected to a *Master*, its port is represented by the PC port label (**1~8** or **A~H**). 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 <u>power-on</u> computers one by one at a fixed interval:

> *Left* **Ctrl**   *left* **Ctrl**   **F1**

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, see below. 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 <u>power-on</u> 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,* setting the duration before switching to the next computer in *Auto Scan*:

> *Left* **Ctrl**   *left* **Ctrl**   **F3**

The ServView sends one to four beeps indicating 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 ServView generates 1 to 4 beeps corresponding to *10*, *15*, *20,* and *30* characters/sec respectively.

Sun/Mac Keyboard Mapping

A Sun keyboard has more keys than a standard PS/2 one. These extra keys are simulated by tapping the lower-right **Ctrl** followed by one of the function keys on a PS/2 keyboard (i.e. combo key). For instance, tap the lower-right **Ctrl** key, 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**	☾ ☾ ᶦⁿᵒᵗᵉ	◁ 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 - ⊞	*right -* ♦	*right -* 🍎
left - ⊞	*left -* ♦	*left -* 🍎
📝	**Compose**	
right - **Alt**	**Alt Graph**	*right -* **Option**
left - **Alt**	**Alt**	*left -* **Option**

Note: For Sun: The switch Module does not support **LowPower** option under **Power Off Select** after the command right – **Ctrl** **4** *.*

* For Japanese keyboard: The leading key for the Combo Key is replaced by. 半角 / 全角

Appendices

Specifications:

Specifications		Slim PS/2			Slim USB-PS/2		
		4-Port	8-Port	16-Port	4-Port	8-Port	16-Port
User port number		1	1	1	1	1	1
Computer port number		4	8	16	4	8	16
Cable type		Special 3-in-1, HDB15 for PS/2			Special 3-in-1, HDB15 for PS/2 or for USB		
Applicable to computer		PS/2 PC			PS/2 PC, Sun†, Mac		
On-screen display (OSD)		Yes					
Push button control		8, available when connected to a KVM drawer					
Hot plug-and-play		Yes					
Hotkey control		Yes					
Rack-mounted		Yes, 19″ industry-standard					
Automatic scan interval		3, 8, 15, 30 seconds					
Programmable scan pattern		Yes					
Cable length (Max)		30M (100ft) at CONSOLE 15M (50ft) at PC ports for PS/2 5M at PC ports for USB					
VGA bandwidth		1920 x 1440, DDC2B					
TFT LCD KVM drawer connector		C-36					
Computer connector	Keyboard + mouse + monitor	HDB-15 female x 4 (blue-gray)	HDB-15 female x 8 (blue-gray)	HDB-15 female x 16 (blue-gray)	HDB-15 female x 4 (gray)	HDB-15 female x 8 (gray)	HDB-15 female x 16 (gray)
Console connector	Keyboard mouse monitor	PS/2 PS/2 HDB-15 female					
H x W x D (mm) (in.)		40 x 404 x 114 1.6 x 15.9 x 4.5					
Rear-mount brackets size		1U-height, included 1U					
Power supply (min)		12V DC, 3A (when connected to a TFT LCD drawer) 9 ~ 12V DC, 500mA (NOT connected to a TFT LCD drawer)					

* Maximum control when cascaded with models of the same type.
† For USB-ready Sun computers.

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 ServView.

Symptom	*Possible causes*	*Recommended solutions*
Nothing works.	Bad connection at the C-36 connectors.	Push the assembled drawer and the KVM module box firmly together leaving only 8mm (5/16 inch) space in between. Be sure they are secured by two screws.
VGA monitor works fine but keyboard and touch pad does not work.	Another keyboard or mouse is connected to the rear side of the KVM module box (marked with **Local**) when the C-36 connector is connected to the KVM drawer.	If the C-36 connector on the KVM module box connects to a KVM drawer, its **Local** console should not connect to any keyboard or mouse.
	Connection inside the KVM drawer becomes loose due to vibration.	Verify if the KVM drawer is bad by disconnecting it from the KVM module box (the C-36 connector is not connected). Connect a keyboard, mouse, and monitor to the **Local** port on the KVM module box and another computer to any of the **PC** ports and use the KVM module box as a stand-alone KVM Switch.
No screen image, or no OSD menu	A power-on computer is not selected.	Turn on a computer and select it by the front push-buttons.
	External power supply is not connected, No power to ServView.	Apply power to the system via the external power supply. Press the front push buttons to select a computer. A red rectangle, part of the OSD function, should pop up displaying the port number as the system is properly powered.
		Connect a VGA monitor to the LOCAL port at the rear and check if the VGA signal presents.
Unable to operate USB-ready Sun server.	Incorrect KVM module.	Use only the hybrid PS/2 + USB KVM module.
		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.	Set the VGA resolution of the computers to 1024 x 768 with "Large Font" for the best performance.
I forget the password.	Bad memory.	Consult the dealer. Memorize the password.
Master/slave does not work.	Improper installation procedures.	Make sure slave's CONSOLE is connected to *Master's* PC 1~ PC 8 port. Only PS/2 ports can be used 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.	Turn computers on. Press any other key to abort *Manual Scan* mode.
	Scan type is eye mark selected but no PC is eye mark selected in OSD.	Set proper *Scan type* in OSD and determine which PCs are eye mark selected, do it in OSD.

Auto Scan does not switch PC and ServView beeps from time to time and red indicator flashes.	All PCs are off or only one PC is turned on. Scan mode works for power-on computers only.	Turn on computers.
	Scan type is eye mark selected but no power-up PC is eye mark selected in OSD.	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.
Double OSD images at cascade configuration.	Improper slave connection procedure.	Press push-buttons **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.
Computer can not use serial mouse.	Loose mouse adapter.	Secure the mouse adapter to computer's COM port.
	Incorrect mouse adapter.	Use only the mouse adapter comes with the unit.
	Incorrect **PC** port connection.	The mouse conversion is only effective at **PC** ports 7 and 8.
The ServView fails to function occasionally.	The system is not getting enough power	Make sure the external power supply is properly connected.

Limited Warranty

From PS/2 keyboard			Map to Sun keyboard
right - **Ctrl**	**1**		⬭
right - **Ctrl**	**2**		◑−
right - **Ctrl**	**3**		◑+
right - **Ctrl**	**4**		⏻ ☾ note
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**
right - **Ctrl**	**H**		**Help**
right - 🪟			*right -* ♦
left - 🪟			*left -* ♦
📝			**Compose**
right - **Alt**			**Alt Graph**
left - **Alt**			**Alt**

From PS/2 keyboard		Map to Mac keyboard
right - **Ctrl** **4**		◁ power
Print Screen		**F13**
Scroll Lock		**F14**
Pause Break		**F15**
right - 🪟		*right -* 🍎
left - 🪟		*left -* 🍎
right - **Alt**		*right -* **Option**
left - **Alt**		*left -* **Option**

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Black Box International Tech Support Addresses

Country	Web Site/E-Mail	Phone	Fax
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Belgium	www.blackbox.be support.nederlands@blackbox.be support.french@blackbox.be support.english@blackbox.be	+32 2 725 85 50	+32 2 725 92 12
Denmark	www.blackbox.dk blackbox@blackbox.dk	+32 2 725 85 50	+32 2 725 92 12
Finland	www.blackbox.fi tuki@blackbox.fi	+35 201 888 800	+35 201 888 808
France	www.blackbox.fr tech@blackbox.fr	+33 1 45 606 717	+33 1 45 606 747
Germany	www.black-box.de techsupp@black-box.de	+49 811 5541 110	+49 811 5541 499
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