4-, 8-, and 16-Port ServSwitch EC Series PS/2 KVM Switch

FEDERAL COMMUNICATIONS COMMISSION and INDUSTRY CANADA RADIO FREQUENCY INTERFERENCE STATEMENTS

Class B Digital Device. This equipment has been tested and found to comply with the limits for a Class B computing device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. 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. If this equipment does cause harmful interference to radio or telephone reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient 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.

- Consult an experienced radio/TV technician for help.

CAUTION

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

To meet FCC requirements, shielded cables and power cords are required to connect this device to a personal computer or other Class B certified device.

This digital apparatus does not exceed the Class B limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe B prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

NORMAS OFICIALES MEXICANAS (NOM)
ELECTRICAL SAFETY STATEMENT

INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.

2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.

3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.

4. Todas las instrucciones de operación y uso deben ser seguidas.

5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc..

6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.

7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.

8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.

9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.

10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.

11. El aparato eléctrico deberá ser connectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.

12. Precaución debe ser tomada de tal manera que la tierra fisica y la polarización del equipo no sea eliminada.

13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.

14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.

15. En caso de existir, una antena externa deberá ser localizada lejos de las lineas de energia.

16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.

17. Cuidado debe ser tomado de tal manera que objectos liquidos no sean derramados sobre la cubierta u orificios de ventilación.

18. Servicio por personal calificado deberá ser provisto cuando:

A: El cable de poder o el contacto ha sido dañado; u

B: Objectos han caído o líquido ha sido derramado dentro del aparato; o

C: El aparato ha sido expuesto a la lluvia; o

D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o

E: El aparato ha sido tirado o su cubierta ha sido dañada.

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UL is a registered trademark of Underwriters' Laboratories, Inc.

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1. Specifications

Resolution: 1920 x 1440

Supported Operating Systems: Windows® 98/Me/2000/XP and Windows NT®

Hotkeys: Yes

User Controls: KV9004A: (4) port selection buttons with integral LEDs;
KV9008A, KV9016A: (8) port selection buttons with integral LEDs

Connectors: All: (1) barrel connector for power, (1) 6-pin mini-DIN
  (reserved for future use);
KV9004A: Computer end: (4) HD15 female;
  Console end: Keyboard: (1) 6-pin mini-DIN female,
      Mouse: (1) 6-pin mini-DIN female,
      Monitor: (1) HD15 female;
KV9008A: Computer end: (8) HD15 female;
  Console end: Keyboard: (1) 6-pin mini-DIN female,
      Mouse: (1) 6-pin mini-DIN female,
      Monitor: (1) HD15 female;
KV9016A: Computer end: (16) HD15 female;
  Console end: Keyboard: (1) 6-pin mini-DIN female,
      Mouse: (1) 6-pin mini-DIN female,
      Monitor: (1) HD15 female

Indicators: KV9004A: (8) Port LEDs;
KV9008A: (16) Port LEDs;
KV9016A: (32) Port LEDs

Temperature Tolerance: Operating: 32 to 104°F (0 to 40°C);
Storage: -4 to +140°F (-20 to +60°C)

Relative Humidity: Up to 80%, noncondensing

Power: 9-VDC, 600-mA adapter

Size: KV9004A: 1.75"H (1U) x 8.6"W x 5.1"D (4.6 x 22 x 13 cm);
KV9008A, KV9016A: 1.75"H (1U) x 17.3"W x 7"D (4.6 x 43.8 x 18 cm)

Weight: KV9004A: 2.2 lb. (1 kg);
KV9008A: 4.8 lb. (2.2 kg);
KV9016A: 5.7 lb. (2.6 kg)

2. Overview

2.1 Introduction

The 4-, 8-, or 16-Port ServSwitch™ allows you to control up to 4, 8, or 16 PS/2® server computers from a single PS/2 console (PS/2 keyboard, PS/2 mouse, and monitor). Supported mice include Microsoft® IntelliMouse® and other mice.

The ServSwitch offers an efficient way to manage multiple computers in server rooms where space is at a premium. On Screen Display (OSD) features computer naming, computer selection, status indication, AutoScan, and more. Up to 136 servers can be easily managed by cascading multiple KVM switches. The switch has one HD15 connector for each computer connection.

Use front-panel buttons, the on-screen display (OSD) interface, or hotkeys to switch the KVM control. The front panel also includes port LEDs. Each LED will light with the corresponding active port when manually switching between the computers. Navigate through the OSD menus using function keys (see **Section 4.3** for details). Using a hotkey command sequence (see **Section 4.4**), you can switch the KVM control. The ServSwitch beeps to confirm that it's in hotkey mode.

The AutoScan function allows you to automatically scan and monitor all computers, one by one, that are connected to the ServSwitch. And the ServSwitch works with most common Windows® operating systems.

The ServSwitch supports video resolutions of up to 1920 x 1440.

2.2 Components

2.2.1 FRONT PANEL

Figure 2-1 shows the 8-Port ServSwitch front view. Table 2-1 describes the components numbered in the illustration.
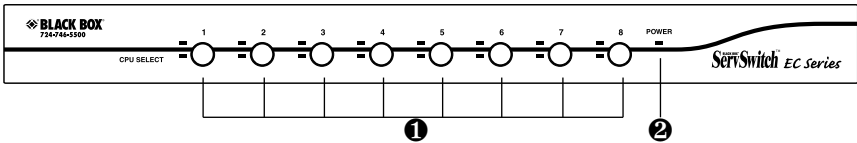

Figure 2-1. The 8-Port ServSwitch front-panel views.

Table 2-1. Front-panel components.

Component	Description
❶ Port Selection buttons and LEDs	Press a button between 1–4 (for 4-port model), 1–8 (for 8-port model), or 1–8 or A–H (for 16-port model) to select a port.
	The ServSwitch has two LEDs per port button. One LED lights red when the corresponding port is selected. It flashes red when the port is running in either AutoScan or manual scan mode. The other LED lights green when the port connects to a computer that's powered on.
KVM Reset buttons	Press buttons 1–2 simultaneously to reset the ServSwitch to its default settings.
AutoScan buttons	Press buttons 7–8 simultaneously to start AutoScan. (On the 4-port ServSwitch, press buttons 3–4.)

Table 2-1 (continued). Front-panel components.

Component	Description
❷ Power LED	This LED lights when ServSwitch power is on.

2.2.2 REAR PANEL

Figure 2-2 shows the 8-Port ServSwitch rear view. Table 2-2 describes the components numbered in the illustration.
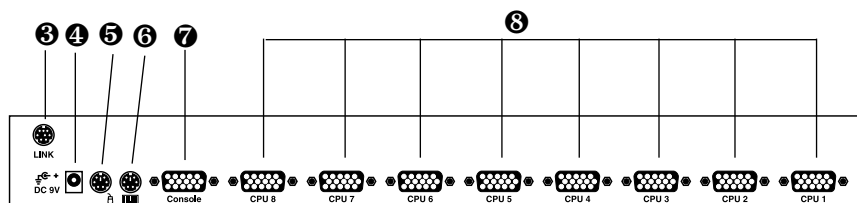
Figure 2-2. The ServSwitch back-panel views.

Table 2-2. Rear-panel components.

Component	Description
❸ 6-pin mini-DIN connector	Reserved for future use.
❹ Barrel connector	9-VDC, 600-mA power connector.
❺ 6-pin mini DIN connector	Links to console's mouse.
❻ 6-pin mini-DIN connector	Links to console's keyboard.
❼ HD15 connector	Links to console's monitor.
❽ PC1–PC8 HD15 ports	Links to server's keyboard, mouse, and monitor HD15 ports.

Another application cascades multiple 8-Port ServSwitch units. Depending on how many ServSwitch units and what models you use, you can manage up to 136 computers from a single PS/2 keyboard, mouse, and monitor. See Figure 2-4.
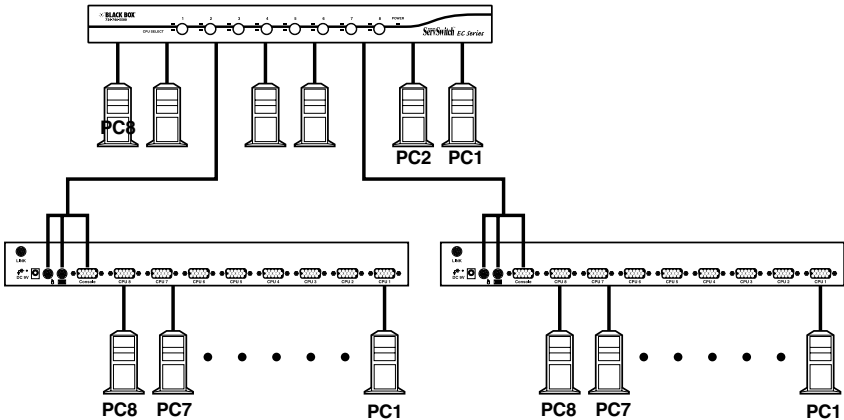
Figure 2-4. Cascaded ServSwitch configuration.

NOTES

1. Throughout this manual, the master is the KVM switch that connects directly to a PS/2 keyboard, mouse, and monitor. The slave is a KVM switch that has its console port connected to the master's PC x port (where x refers to a computer numbered 1–8). A slave exists only in a cascaded configuration.

2. For detailed descriptions and restrictions for a cascaded configuration, see Chapter 5.

3. Installation

3.1 ServSwitch Placement

The 4-, 8-, and 16-Port ServSwitch units are 1U high and are designed to fit in on a desktop or in a standard equipment rack. Consider the following when deciding where to place the KVM switch:

- How long are the cables attached to your keyboard, mouse, and monitor?

- How far are the computers from the console?

- How long are the cables you use to connect your computers to the ServSwitch?

CAUTION

Do not place cables near machines that create electrical noise such as fluorescent lighting, air conditioning equipment, etc.

3.2 Hardware Installation

This section provides instructions for the basic hardware setup of a single ServSwitch.

CAUTION

Before you begin, make sure that power to all the devices that you will be connecting is turned off.

To prevent damage caused by ground potential differences, make sure that all devices are properly grounded. If you don't follow these instructions, your computers and/or the ServSwitch could be damaged.

3.2.1 CONNECTING THE CONSOLE, KEYBOARD, AND MOUSE

1. Power off all computers.

2. Connect your PS/2 keyboard and PS/2 mouse directly to the PS/2 console keyboard and mouse ports (labeled with keyboard and mouse symbols) on the back of the ServSwitch. See Figure 3-1.
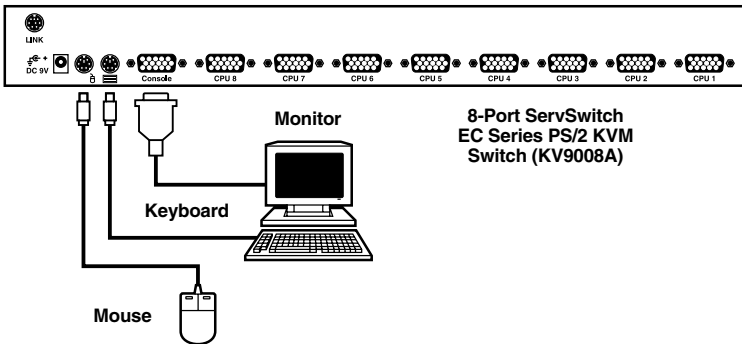
Figure 3-1. Console keyboard, mouse, and monitor connections.

3. Connect the HD15 VGA male connector from your monitor to the console VGA port on the back of the ServSwitch. See Figure 3-1.

3.2.2 POWERING ON THE SERVSWITCH

Connect the 9-VDC, 600-mA power adapter's barrel connector to the power jack on the rear of the switch. Then plug the power adapter cable into an available power outlet.

3.2.3 CONNECTING THE COMPUTERS

1. Connect the ServSwitch 3-in-1 cable (EHN70001-0006, EHN70001-0010, EHN9000P-0015, or EHN9000P-0030) to the computer's 6-pin mini-DIN keyboard and mouse ports, and the computer's HD15 port.

2. Connect the other end of the 3-in-1 cable to the ServSwitch unit's HD15 connector.
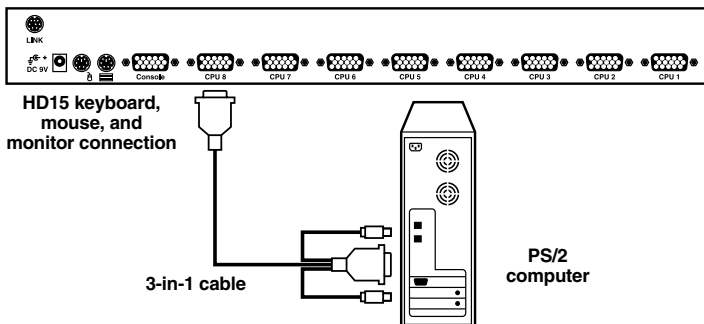
Figure 3-2. PS/2 computer connections.

3. Repeat steps 1 and 2 for all computers that you want to connect to the ServSwitch.

NOTE

To connect the computers in a cascaded configuration, see Chapter 5.

4. Power on all computers that are attached to the ServSwitch.

4. Operation

4.1 Powering Up the System

Once all cables have been connected and all computers have been powered on, the ServSwitch emulates mouse and keyboard signals on each port, allowing your computer to boot normally. The ServSwitch is now ready for use. You can configure the ServSwitch in three ways: by pressing the front-panel button directly, by activating the On-Screen Display (OSD) window, or by typing hotkey commands.

4.2 Selecting Computers Using Front-Panel Buttons

4.2.1 PORT SELECTOR BUTTONS

You can instantly select any computer by pressing the port selector buttons on the front panel. The corresponding integral LED will light when the port is selected.

NOTE

For the 16-port model, 1–8 represent the lower eight ports and A–H represent the higher eight ports. Port 1 and A share the same button, as do Port 2 and B, etc. If Port 1 is already selected, press its button to select port A. If Port 1 is not selected, press and hold button 1 for two seconds to select Port A.

4.2.2 K/M RESET BUTTONS

K/M Reset solves most problems caused by replacing a keyboard, mouse, or device, or by changing configurations. Press both buttons 1 and 2 on the front panel for two seconds to reconfigure the whole system without powering off either the ServSwitch or any computer.

4.2.3 AUTOSCAN BUTTONS

The ServSwitch can scan ports automatically. To start AutoScan for the 8- and 16-port ServSwitch models, press both buttons 7 and 8 on the front panel for two seconds. To start AutoScan for the 4-port ServSwitch, press both buttons 3 and 4 instead.

4.2.4 LEDs

The ServSwitch has LEDs next to the front-panel buttons. The LEDs light red when the corresponding port is selected. The LED flashes red when the port is running in either AutoScan or manual scan mode. The LEDs light green when the port connects to a computer that's powered on.

4.3 Selecting Computers Using On-Screen Display (OSD)

The ServSwitch can operate via an on-screen display (OSD). To use this option, press the **Ctrl** key twice within two seconds to see the hotkey menu (an OSD option) if it is enabled. Press the **Left-Ctrl** key three times within two seconds, and a ServSwitch menu screen appears showing a list of the computers with corresponding port numbers, names, and statuses. See Figure 4-1.
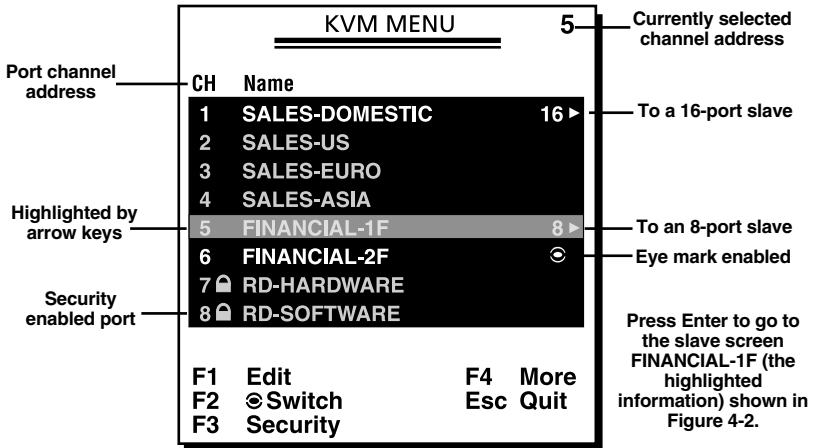

Figure 4-1. OSD screen.

Note also that the short form Hotkey menu can be turned on as an OSD function. Just press the F4 key, then select More, then Hotkey menu. See Table 4-1 for Hotkey commands.
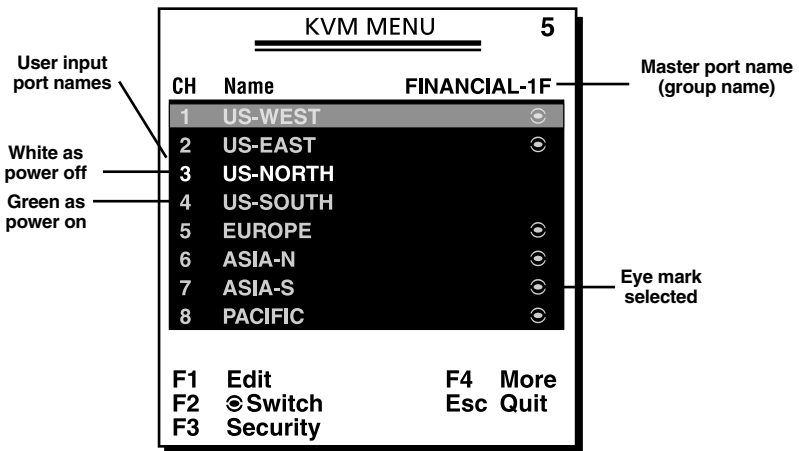
```
                      KVM MENU          5

      CH    Name              FINANCIAL-1F
       1    US-WEST                      ◉
       2    US-EAST                      ◉
       3    US-NORTH
       4    US-SOUTH
       5    EUROPE                       ◉
       6    ASIA-N                       ◉
       7    ASIA-S                       ◉
       8    PACIFIC                      ◉


      F1    Edit              F4   More
      F2   ◉Switch            Esc  Quit
      F3    Security
```

User input port names

White as power off

Green as power on

Master port name (group name)

Eye mark selected

Figure 4-2. OSD slave screen.

In Figure 4-1, the color of a device name is green if it has power and is ready for operation, or the color is white if it has no power. The OSD menu updates the color when the device's power is activated. For 16-port models, press the **PageUp** and **PageDown** keys to view eight other computers.

Press the **up-arrow**, **down-arrow**, **1–8**, or **A–H** keys (depending on the ServSwitch model) to highlight a computer, then press the **Enter** key to select it. Or, press **Esc** to exit OSD and remove the OSD menu from the display. The status window then returns to the display and indicates the currently selected computer or operating status.

A triangle mark to the right of a name (see Figure 4-1) 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. Pressing the **Enter** key brings you one level down and another screen (Figure 4-2) 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.

An eye mark to the right of a name (see Figure 4-2) indicates that computer is selected and monitored in Scan mode. In the OSD, this mark can be switched on or off by pressing function key **F2**.

Press the **Esc** key to exit OSD and to return to the port/PC screen that you were previously connected to.

The Function and Escape keys work as follows:

Function key **F1** allows you to edit a computer or slave's name entry with up to 14 characters. First highlight a port, then press **F1** and type the name. Valid characters are A–Z, 0–9, and the dash character. If you type lowercase letters, they will be converted to uppercase ones. Press the **Backspace** key to delete a letter one at a time. Non-volatile memory stores all name entries until you change them, even if the unit is powered down.

Function key **F2** allows you to switch a computer's eye mark on or off. First, use the **up-arrow** and **down-arrow** keys to highlight a computer, then press **F2** to switch its eye mark on or off. If Scan Type (described on the next page) is Ready PC, only the power-on and eye-mark selected computers will be displayed sequentially in Scan mode.

Function key **F3** enables you to lock a computer to prevent unauthorized access. To lock a computer, highlight it and then press **F3**. Now, for the new password, type in up to four characters (A–Z, 0–9) and press the **Enter** key. A security-enabled computer is marked with a lock symbol following its port number. To permanently disable the security function from a locked computer, highlight it, press **F3** and then type in the password.

If you want to access the locked computer temporarily, simply highlight it and press the **Enter** key, then the OSD will ask you for the password. After typing in the correct password, you are allowed to use the computer. This computer is automatically re-locked once you switch to another port. During Scan mode, the OSD skips the password-protected computers.

NOTE

If you forget the password, the only way to permanently erase all the passwords for the KV9008A or KV9016A is to press and hold the front panel buttons 1 and 2, then press and hold 7 and 8. Release 7 and 8, then release 1 and 2. For the KV9004A, press 3 and 4 instead of 7 and 8.

Function key **F4** enables more functions, including AutoScan, Manual Scan, Scan Type, Scan Rate, Keyboard Speed, Hotkey Menu, CH Display, and Position. A new screen pops up displaying these functions as described on the next two pages. Most of them are marked with a triangle, indicating there are options to choose from. Use the **up-arrow** or **down-arrow** key to select the functions, and then press the **Enter** key. Available options will be shown in the middle of the screen. Again, use the **up-arrow** or **down-arrow** keys to view each option, and then press the **Enter** key to select it.

Press the **Esc** key to exit the OSD at any time and return to the port/PC screen that you were previously connected to.

AutoScan

In this mode, the ServSwitch automatically switches from one powered-on computer to the next one, 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 until activity stops; it then resumes with the next computer in sequence. To abort the Auto Scan mode, press the left **Ctrl** key twice, or press any front-panel button. Scan Type and Scan Rate set the scan pattern. Scan Type (press F4, then select More\Scan Type) determines if scanned computers must also be eye mark selected. Scan Rate (press F4, then select More\Scan Rate) sets the duration a computer is displayed before selecting the next one.

Manual Scan

Scan through powered-on computers one by one using the keyboard control. You can press F4, then select 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.

Scan Type

Ready PC (the powered PC) + eye mark: In Scan mode, scan through powered-on and eye-mark selected computers. Only powered PC and eye-mark selected computers will be scanned.

Ready PC (the powered PC): In Scan mode, scan through powered-on computers. Only powered-on computers will be scanned.

Eye mark only: In Scan mode, scan through any eye-mark selected computer regardless of computer power status. The non-volatile memory stores the Scan Type setting.

Scan Rate

Sets the duration a computer is 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

The ServSwitch offers a keyboard typematic setting that overrides the similar settings in BIOS and in Windows. Available speed options are Low, Middle, Fast, and Faster at 10, 15, 20, and 30 characters/sec respectively. The non-volatile memory stores the keyboard speed setting.

Hotkey Menu

When you press 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 you press the **Left-Ctrl** key 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 continually. The non-volatile memory stores the CH Display setting.

Position

The actual display position of the selected computer and/or OSD shifts because of different video resolution; the higher the resolution, the higher the display position. Use the F4 function key (More/Position) to select the position of the OSD menu on the screen. Choose from five options: upper-left (UL), upper-right (UR), lower-left (LL), lower-right (LR), or middle (M). The non-volatile memory stores the position setting.

4.4 Selecting Computers Using Keyboard Hotkey Commands

Each computer is assigned a numeric ID. To directly switch the KVM control to any computer via a simple keyboard command sequence, do the following:

1. To invoke the hotkey mode, press the **Left-Ctrl** key twice within two seconds. The switch will beep to indicate that it's in hotkey mode.

2. Enter your desired switch port number (1–4). For example, if you press **Left-Ctrl Left-Ctrl** 2, you'll select the computer on port 2.

Or, do the following:

1. To invoke the hotkey mode, press the <Left-Ctrl> key twice within two seconds. The switch will beep to indicate that it's in hotkey mode.

2. Press the <up-arrow> or <down-arrow> keys to switch to the previous or next port, respectively.

Table 4-1 lists the hotkey commands.

Table 4-1. Hotkey commands.

Command	Description
<Left-Ctrl><Left-Ctrl> *X*	Switch to PC "X" master port.
<Left-Ctrl><Left-Ctrl> *X C*	Switch PC "X" slave port.
<Left-Ctrl><Left-Ctrl> *F1*	Begin AutoScan. The AutoScan feature allows you to monitor the activity of the connected computers so that you can monitor the computer activity without having to press the front-panel buttons.
<Left-Ctrl><Left-Ctrl>	Stop AutoScan.
<Left-Ctrl><Left-Ctrl> *F2*	Begin Manual Scan.
<Left-Ctrl><Left-Ctrl> <up arrow>	Switch to previous active PC.
<Left-Ctrl><Left-Ctrl> <down arrow>	Switch to next active PC.

X = 1–8 or A–H
C = Slave port number
F1–F4 = Function keys

Table 4-1 (continued). Hotkey commands.

Command	Description
<Left-Ctrl><Left-Ctrl> *F3*	Adjust scan rate. The ServSwitch beeps one to three times to indicate scan intervals of 3, 8, 15, and 30 seconds.
<Left-Ctrl><Left-Ctrl> *F4*	Adjust keyboard typematic rate (characters per second). The ServSwitch beeps 1 to 4 times to indicate 10, 15, 20, and 30 characters per second. This setting overrides any BIOS or Windows setting.

X = 1–8 or A–H

C = Slave port number

F1–F4 = Function keys

5. Cascade Configuration

5.1 Connection

Before connecting a device (a computer or a slave ServSwitch) to a powered-on ServSwitch, you must turn off the device.

NOTE

The master must have the same number or more ports than the slave. For example, if an 8-port switch is the master, an 8-port or a 4-port switch can be a slave, but not a 16-port one. These PS/2 only ServSwitch models (KV9004A, KV9008A, and KV9016A) can also be cascaded with USB+PS/2 universal server and PS/2 console models (KV9104A, KV9108A, and KV9116A) <u>and</u> USB+PS/2 server and USB+PS/2 console models (KV9204A, KV9208A, and KV9216A).

The ports labeled 1–8 can be connected to either a computer or a slave's console port, as shown in Figure 5-1. The ports labeled A–H can only be connected to computers.
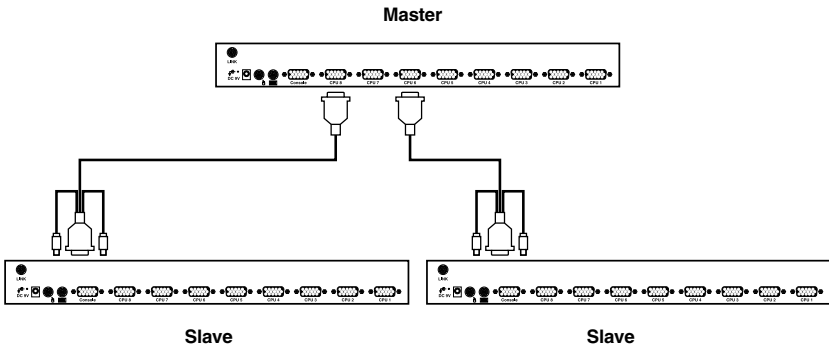

Figure 5-1. Slave console connection.

NOTE

Use only 1-to-3 cables (EHN70001-0006, EHN70001-0010, EHN9000P-0015, or EHN9000P-0030) for connection between the master's PC ports and a slave's console port in a cascaded application.

The maximum number of computers controlled by a master/slave configuration with all 8-port units is 64 with 8 ServSwitch slaves. Each ServSwitch slave connects to 8 computers, as shown in Figure 5-2.
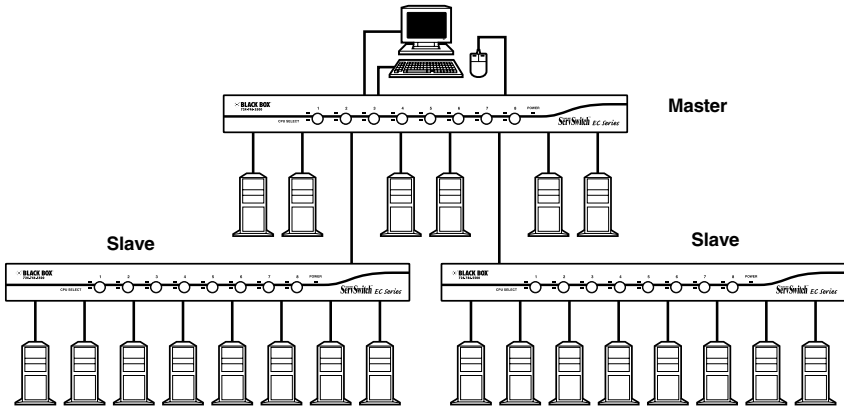
Figure 5-2. 8-port ServSwitch units in cascade.

The maximum number of computers controlled by a master/slave configuration with all 16-port units is 136—with 8 units of 16-port ServSwitch slaves (connected to 1–8). Each slave connects to 16 computers, plus 8 more computers directly connect to the master (to A–H). See Figure 5-3.
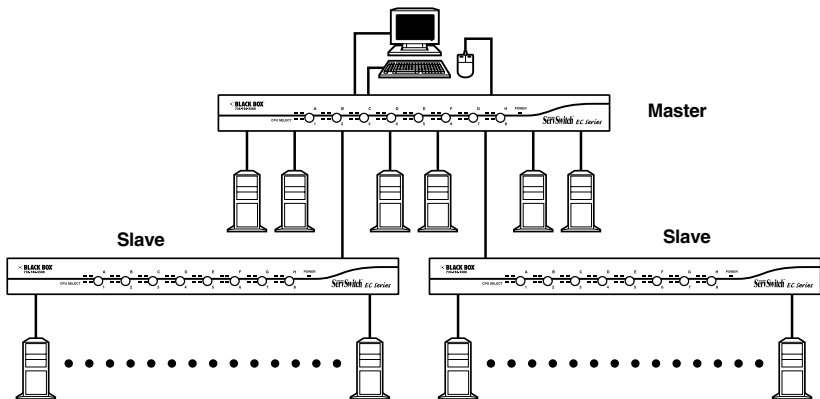
Figure 5-3. 16-port ServSwitch units in cascade.

NOTE

For OSD menus, after the connection is completed, 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 number of ports the slave model has, for example, 8 plus the triangle mark for an 8-port switch.

5.2 Change Configuration while Running

A device (a computer or a ServSwitch) at any PC x port can be changed at any time after initial power-up. If you change any one of the 1 to 8 port connections from a computer to a slave KVM switch or vice versa, or replace port devices, the OSD will update this change the next time it is activated.

CAUTION

Power off any new device before connecting it to the master ServSwitch.

Appendix. Troubleshooting

A.1 Problems/Possible Causes/Solutions

Problem: The mouse does not work.

Possible Cause #1: Too many mouse drivers are installed in the computer.

Solution #1: Make sure there is only one mouse driver installed in each computer.

Possible Cause #2: The wrong mouse driver is installed.

Solution #2: Use a Microsoft mouse driver.

Problem: The monitor works fine, but the keyboard and mouse do not work.

Possible Cause #1: Cables might be swapped.

Solution #1: Connect the cables according to the PC99 standard keyboard and mouse icons on the connectors.

Possible Cause #2: Incorrect cables are used.

Solution #2: Use only PS/2 compatible cables.

Problem: The video image is not clear.

Possible Cause: You're using poor quality video cables.

Solution: Use UL® 2919 rated, double-shielded video cables.

Problem: No screen image appears or no OSD menu appears.

Possible Cause: The selected computer is not powered on.

Solution: Power on a computer and select it using the front-panel buttons.

Problem: A keyboard error appears when you power on the ServSwitch.

Possible Cause: The keyboard cable connection is loose.

Solution: Make sure that the keyboard cable connections are secure.

Problem: Alphabet symbols on the computer's monitor are blue or have shadows.

Possible Cause: Resolution settings are incorrect.

Solution: Under Windows Control Panel, set the computer's video output to match the highest resolution for the monitor with a large font for best performance.

Problem: AutoScan does not switch PCs, and the ServSwitch beeps from time to time while a red indicator flashes.

Possible Cause #1: All PCs are powered off or only one PC is powered on. Scan mode works only for powered-on computers.

Solution #1: Power on all computers. To abort AutoScan, press the Left-Ctrl key twice. Or, press any front-panel button to select a PC (this also stops AutoScan).

Possible Cause #2: Scan type is eye-mark selected, but no PC is eye-mark selected in OSD.

Solution #2: Set proper scan type in OSD and determine which PCs are eye-mark selected. To abort AutoScan, press the Left-Ctrl key twice. Or, press any front-panel button to select a PC (this also stops AutoScan).

Problem: The master/slave does not work.

Possible Cause: The ServSwitch is improperly installed or the wrong cables are used between the master and a slave switch.

Solution: Make sure each slave's console is connected to a master's 1–8 port. Use only 3-in-1 PS/2 cables for cascade connections. Press and hold the 1 and 2 buttons to initiate K/M reset. Remove any possible power supply to the slave (unplug all cables) before connecting it to the master.

Problem: The up-arrow and down-arrow keys do not work in Manual Scan mode.

Possible Cause #1: All PCs are powered off or only one PC is powered on. Scan mode works for powered-on computers only.

Solution #1: Power on all computers.

Possible Cause #2: Scan type is eye-mark selected, but no PC is eye-mark selected in OSD.

Solution #2: Set the proper scan type in OSD and determine which PCs are eye-mark selected.

Problem: Double OSD images appear at cascade configuration.

Possible Cause: The slaves are improperly connected.

Solution: Press buttons 1 and 2 for two seconds to activate K/M reset. Remove any possible power supply to the slave (unplug all cables) before connecting it to the master.

Problem: The OSD menu is not at the proper position.

Possible Cause: The OSD menu has a fixed resolution and its size varies as computer video resolution changes.

Solution: Use the F4 function key (More/Position) to select the position of the OSD menu on the screen. Choose from five options: upper-left (UL), upper-right (UR), lower-left (LL), lower-right (LR), or middle (M).

Problem: You can't select a computer that's connected to a slave.

Possible Cause #1: The master unit is improperly connected.

Solution #1: Only master ports 1–8 can be connected to slaves.

Possible Cause #2: The slave unit is improperly connected.

Solution #2: Connect the slave console port to a 1–8 master port using 3-in-1 cables.

Possible Cause #3: There are too many levels of slaves.

Solution #3: Only one level of slave units is allowed. Make sure you only have one level of slaves, then open OSD again to check to see if the master recognizes the slave connection.

Problem: Keyboard strokes are shifted.

Possible Cause: The computer was in the shifted state when last switched.

Solution: Press both **Shift** keys on the keyboard.

Problem: Keyboard with mouse (combination type) will not work properly.

Possible Cause: The keyboard with mouse connection is incorrect.

Solution: Insert the keyboard connector in the right connector on the ServSwitch's rear panel.

A.2 Calling Black Box

If you determine that your 4-, 8-, or 16-Port ServSwitch EC Series PS/2 KVM Switch is malfunctioning, do not attempt to alter or repair the unit. It contains no user-serviceable parts. Contact Black Box at 724-746-5500.

Before you do, make a record of the history of the problem. We will be able to provide more efficient and accurate assistance if you have a complete description, including:

- the nature and duration of the problem.

- when the problem occurs.

- the components involved in the problem.

- any particular application that, when used, appears to create the problem or make it worse.

A.3 Shipping and Packaging

If you need to transport or ship your 4-, 8-, or 16-Port ServSwitch EC Series PS/2 KVM Switch:

- Package it carefully. We recommend that you use the original container.

- If you are shipping the 4-, 8-, or 16-Port ServSwitch EC Series PS/2 KVM Switch for repair, make sure you include everything that came in the original package. Before you ship, contact Black Box to get a Return Authorization (RA) number.

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