



8-Port ServSwitch EC Series USB/DVI KVM Switch

Control up to 8 computers from
a single IBM® console (USB keyboard,
USB mouse, and DVI monitor).

Works with Microsoft® Intelli-Mouse® and other mice.



Customer Support Information

Order toll-free in the U.S.: Call 877-877-BBOX (outside U.S. call 724-746-5500)
FREE technical support 24 hours a day, 7 days a week: Call 724-746-5500 or fax
724-746-0746 Mailing address: Black Box Corporation, 1000 Park Drive, Lawrence,
PA 15055-1018 • Web site: www.blackbox.com • E-mail: info@blackbox.com

FEDERAL COMMUNICATIONS COMMISSION AND INDUSTRY CANADA RADIO FREQUENCY INTERFERENCE STATEMENTS

This equipment generates, uses, and can radiate radio-frequency energy, and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

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

This digital apparatus does not exceed the Class A 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 la classe A 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 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 conectado 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 física 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 líneas de energía.
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 objetos líquidos 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: Objetos 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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1. Specifications

Hotkeys: Yes

Resolution: 1920 x 1200 @ 60 Hz

Supported Operating Systems: Windows® 98 SE/Me/2000/XP, Windows 7, Windows Vista™, Linux®, Mac® OSX, Solaris®

User Controls: (8) port buttons (labeled 1–8) also used for Scan time buttons and AutoScan

Connectors: (1) Power;
Console end: (1) DVI-I, (2) USB Type A;
Computer end: (8) DVI-I, (8) USB Type B

Indicators: (16) LEDs: (8) Port Selection, (8) Computer Ready

Temperature Tolerance: Operating: 41 to 104°F (5 to 40°C);
Storage: -4 to +140°F (-20 to +60°C)

Power: 12-VDC, 500-mA power supply (included)

Size: 1.75"H x 17.25"W x 7"D (4.45 x 43.81 x 17.78 cm)

Weight: 5 lb. (2.3 kg)

2. Overview

2.1 Introduction

The 8-Port ServSwitch USB/DVI KVM Switch allows you to control up to eight computers from a single IBM® console (USB keyboard, USB mouse, and DVI [Digital Visual Interface] monitor). Supported mice include Microsoft® IntelliMouse® and other basic mice.

Setup is fast and simple, and there's no software to configure. Use front-panel buttons on the ServSwitch or hotkeys to select ports or start AutoScan. The front-panel LEDs will light with the corresponding active port when switching between the computers. The AutoScan function allows you to automatically scan and monitor all computers, one by one, that are connected to the ServSwitch.

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.

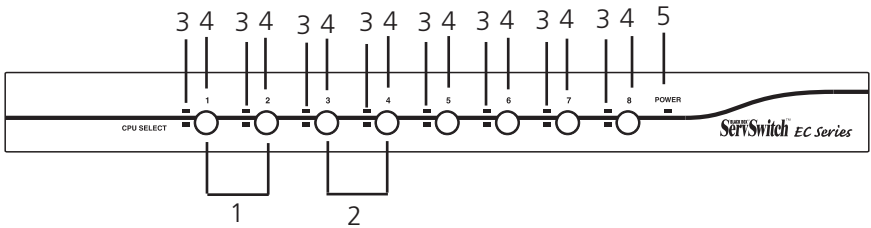


Figure 2-1. The 8-Port ServSwitch front-panel view.

Table 2-1. Front-panel components.

Number	Component	Description
1	Scan time buttons	Press buttons 1 and 2 together to change the Scan time interval. The unit beeps 1, 2, 3, or 4 times for scan time of 3, 8, 15, or 30 seconds, respectively.
2	Autoscan buttons	Press buttons 3 and 4 together to start Autoscan.
3	Port LEDs	LEDs light when the connected computer is selected.

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

Number	Component	Description
4	Port selection buttons	Press buttons 1–8 individually to select a computer.
5	Power LED	Lights when 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.

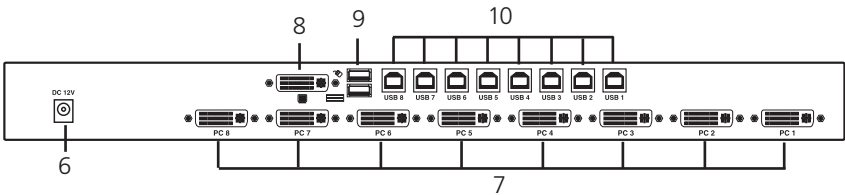


Figure 2-2. The 8-Port ServSwitch back-panel view.

Table 2-2. Rear-panel components.

Number	Component	Description
6	Barrel connector	Connects to a 12-VDC, 2-A power supply.
7	Computer’s DVI ports	Connect to the computers’ monitors.
8	Console DVI port	Plugs into the console’s monitor.
9	(2) console USB Type A ports	Plugs into the console’s keyboard mouse
10	Computer USB Type B ports	Keyboard/mouse connections for computers

Chapter 2: Overview

2.3 What's Included

The package should contain the following items. If anything is missing or damaged, please contact Black Box.

- 8-Port ServSwitch EC Series USB/DVI KVM Switch
- (1) universal power supply, output: 12 VDC, 500 mA
- This user's manual
- Rackmount kit

2.4 Cables That You'll Need to Supply

- 8-Port ServSwitch EC Series USB/DVI KVM Switch Cable (EHN900024U-0006, -0009, -0015): These cables connect to PCs that have USB and DVI connectors. The cables are available in 6-, 9-, and 15-foot (1.8-, 2.8-, and 4.7-m) versions.

3. Installation

3.1 ServSwitch Placement

The 8-Port ServSwitch EC Series USB/DVI KVM Switch can be rackmounted or placed on a desktop. 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 away 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, Mouse, and Monitor

1. Power off all computers.
2. Connect your USB keyboard and USB mouse directly to the USB keyboard and mouse ports (labeled with keyboard and mouse symbols) on the back of the ServSwitch as shown in Figure 3-1. Attach your DVI cable from your monitor directly to the DVI port.

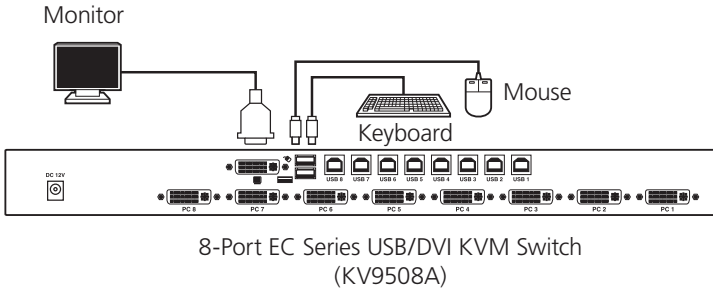


Figure 3-1. Console keyboard, mouse, and monitor connection.

NOTES

The monitor connected to the DVI-I port must be capable of synchronizing with the computer's video signal. If you are uncertain about the monitor type, consult the monitor user's manual.

3.2.2 Connecting the Computers

Using the all-in-one DVI cable (EHN900024U-0006 or -0010), connect a computer to the ServSwitch. Connect the cable's USB connectors to the computer's USB port. Connect the cable's DVI-I connector to your computer's DVI-I monitor port as shown in Figure 3-2. Connect the USB and DVI-I connectors on the other end of the cable to the ServSwitch. Follow the same procedure to connect the other computers.

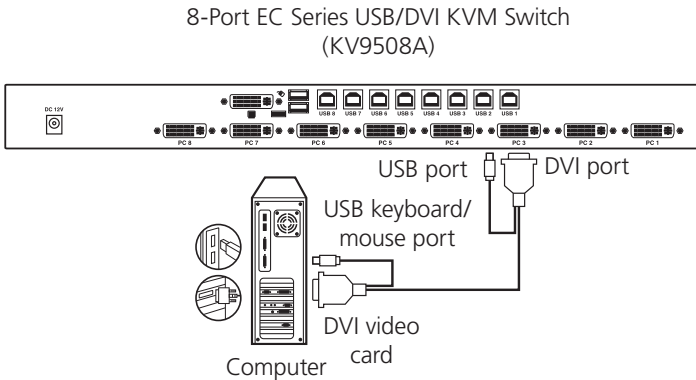


Figure 3-2. Computer connection.

4. Operation

4.1 Powering On 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.

4.2 Selecting Computers Using Front-Panel Buttons

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

4.3 Selecting Computers Using Keyboard Hotkey Commands

A hotkey command is a short keyboard sequence used to select a computer, to activate a computer scan, etc. The KVM interprets keystrokes as hotkeys. A hotkey sequence starts with two Left-Ctrl keystrokes followed by one or two more keystrokes.

A built-in buzzer generates a high-pitched beep for a correct hotkey sequence. A buzzer generates a low-pitched beep to indicate an error; the bad key sequence will not be forwarded to the selected computer.

L-Ctrl is the Ctrl key located at the left side of the keyboard.

1–8 are the number keys 1–8 at the upper row of the keyboard.

NOTE: Do not use the keypad at the right of the keyboard for hotkeys.

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 1–8 or label represents 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 character is the port number of the slave (1–8).

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 (1–8). 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.

Chapter 4: Operation

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.

Hotkey Sequence	Function
<Left-Ctrl><Left-Ctrl> X	Switch to PC "X" master port (X=1–8).
<Left-Ctrl><Left-Ctrl> F1	Begin AutoScan. The AutoScan feature allows you to monitor the activity of the connected computers 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.
<Left-Ctrl><Left-Ctrl> F3	Adjust scan rate. The module beeps one to four times to indicate scan intervals of 3, 8, 15, and 30 seconds.
<Left-Ctrl><Left-Ctrl> V + 4 digit code	Set the maximum video resolution. To prevent the video resolution setting from exceeding the capacity of the connected display, use a 4-digit code for the maximum video resolution you wish to set. You may need to reboot the host computers for the new settings to take effect. Press <Esc> to abort resolution setting.

X = 1–8

F1–F3 = Function keys

Table 4-2. 4-digit codes and corresponding resolutions.

4-Digit Code	Resolution	4-Digit Code	Resolution
1007	1024 x 768	1609	1600 x 900
1208	1280 x 800	1612	1600 x 1200
1210	1280 x 1024	1610	1680 x 1050
1307	1360 x 768	1910	1920 x 1080
1409	1440 x 900	1912	1920 x 1200
1410	1440 x 1050	2011	2048 x 1152

Appendix. Troubleshooting

A.1 Calling Black Box

If you determine that your 8-Port ServSwitch EC Series USB/DVI 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.

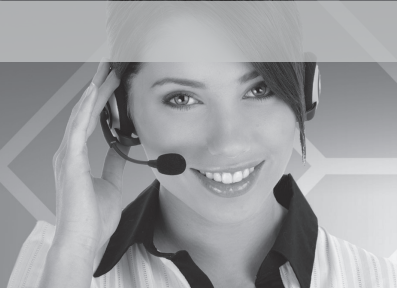
A.2 Shipping and Packaging

If you need to transport or ship your 8-Port ServSwitch EC Series USB/DVI KVM Switch:

- Package it carefully. We recommend that you use the original container.
- If you are shipping the 8-Port ServSwitch EC Series USB/DVI 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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