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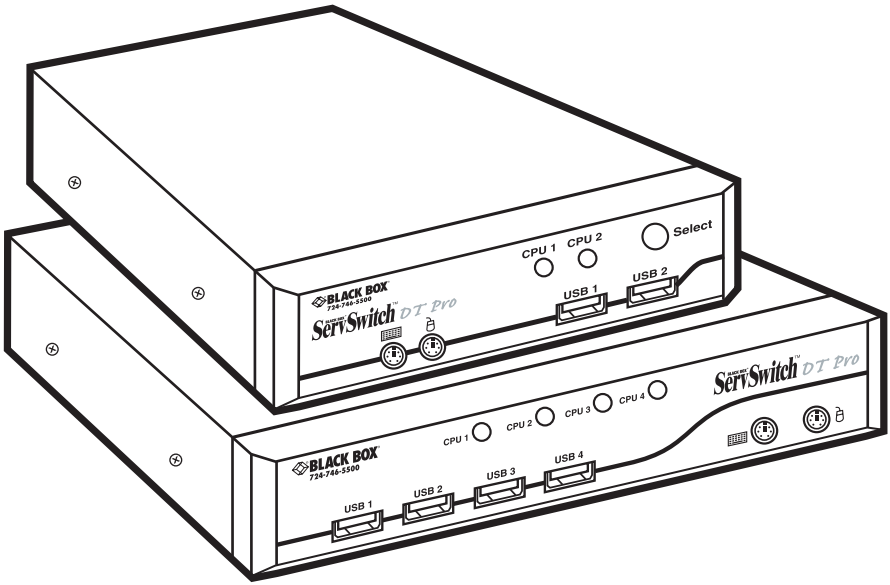
1000 Park Drive • Lawrence, PA 15055-1018 • 724-746-5500 • Fax 724-746-0746

MARCH 2007
KV7012A
KV7013A

2- and 4-Port ServSwitch DT Pro KVM Switch



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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.
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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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Contents

Chapter **Page**

1. Specifications 6

2. Overview. 7
2.1 Introduction 7
2.2 Components 8
2.2.1 Front Panel 8
2.2.2 Rear Panel 9
2.3 What's Included 10
2.4 What You'll Need to Supply 10

3. Installation 11
3.1 ServSwitch Placement 11
3.2 Hardware Installation 11
3.2.1 Connecting the Console. 11
3.2.2 Powering On the ServSwitch 12
3.2.3 Connecting the Computers 13
3.2.4 Connecting the USB Peripherals. 14

4. Operation 16
4.1 Powering Up the System 16
4.2 Selecting Computers Using Front-Panel Buttons 16
4.3 Selecting Computers Using Keyboard Hotkey Commands 16
4.3.1 Selecting USB Devices Connected to the 2- and 4-Port USB 2.0 Hub. 17
4.3.2 Switching USB Devices Only 18
4.3.3 Switching to Another Computer But Allowing USB Devices to Remain on the Current Port 18
4.3.4 Switching Computers and USB Devices 18
4.3.5 AutoScan 19
4.3.6 Flash Upgrade 19

Appendix. Troubleshooting 20
A.1 Calling Black Box 20
A.2 Shipping and Packaging 20

1. Specifications

Resolution: 2048 x 1536 @ 85 Hz

Bandwidth: 400 MHz

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

Hotkeys: Yes

User Controls: KV7012A: (1) port selection button;
KV7013A: (4) port selection buttons

Connectors: KV7012A: Computer end: Keyboard: (2) 6-pin mini-DIN female,
Mouse: (2) 6-pin mini-DIN female,
Monitor: (2) HD15 female,
USB computer: (2) USB 2.0 Type B,
Flash: (1) 8-pin mini-DIN;
Console end: Keyboard: (1) 6-pin mini-DIN female,
Mouse: (1) 6-pin mini-DIN female,
Monitor: (1) HD15 female,
USB peripherals: (2) USB 2.0 Type A;
KV7013A: Computer end: Keyboard: (4) 6-pin mini-DIN female,
Mouse: (4) 6-pin mini-DIN female,
Monitor: (4) HD15 female,
USB computers: (4) USB 2.0 Type B,
Flash: (1) 8-pin mini-DIN;
Console end: Keyboard: (1) 6-pin mini-DIN female,
Mouse: (1) 6-pin mini-DIN female,
Monitor: (1) HD15 female,
USB peripherals: (4) USB 2.0 Type A

Indicators: KV7012A: (2) Port LEDs;
KV7013A: (4) 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: 5-VDC, 2.5-A power supply, specific to your country, ordered separately

Size: KV7012A: 1.8"H x 5.4"W x 5.1"D(4.6 x 13.7 x 13 cm);
KV7013A: 1.8"H x 8.3"W x 5.3"D (4.6 x 21.1 x 13.5 cm)

Weight: KV7012A: 1.8 lb. (0.8 kg);
KV7013A: 2.2 lb. (1 kg)

2. Overview

2.1 Introduction

The 2- or 4-Port ServSwitch™ DT Pro KVM Switch allows you to control up to two or four USB and/or PS/2 computers from a single PS/2® console (PS/2 keyboard, PS/2 mouse, and monitor). Supported mice include Microsoft® IntelliMouse® and other mice.

Compatible with USB Type 1.1 or 2.0 devices, the ServSwitch is both compact and portable. The switch also has a built-in USB Version 2.0 hub. This hub allows you to connect additional shared peripherals on a one-computer-at-a-time basis. Using a hotkey command sequence (see **Section 4.3**), you can asynchronously switch the KVM control and the USB devices. And the ServSwitch works with common operating systems, including Windows 98/Me/2000/XP and Windows NT. Flash-upgradable firmware allows you to obtain the latest firmware upgrades.

Setup is fast and simple, and there's no software to configure. Its small desktop footprint is ideal for on or under your desktop. Use either front-panel buttons on the ServSwitch or hotkeys on your keyboard to select ports or start AutoScan. The front-panel buttons include integral LEDs. The LED will light with the corresponding active port when manually switching between the computers. 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.

Its 400-MHz video bandwidth range allows the ServSwitch to support video resolutions of up to 2048 x 1536 @ 85 Hz.

2.2 Components

2.2.1 Front Panel

Figure 2-1 shows the 2- and 4-Port ServSwitch front views. Table 2-1 describes the components numbered in the illustration.

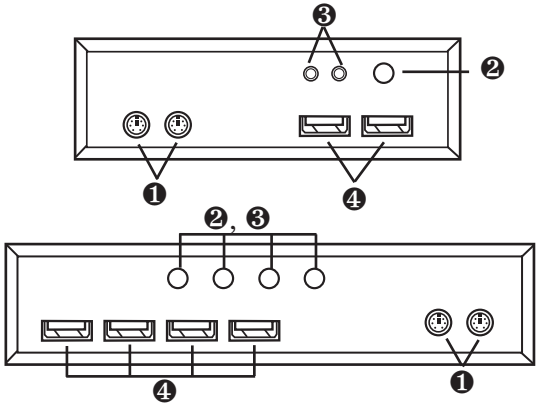

Figure 2-1. The ServSwitch front-panel views.

Table 2-1. Front-panel components.

Component	Description
❶ 6-pin mini-DIN connectors	PS/2 keyboard and mouse ports.
❷ Direct-access port buttons	Press to select a computer.
❸ Port LEDs	Integral LEDs on the port buttons light when the connected computer is selected.
❹ USB 2.0 input ports	Connect to USB peripherals (USB flash drives, printers, etc.).

2.2.2 Rear Panel

Figure 2-2 shows the 2- and 4-Port ServSwitch rear views. Table 2-2 describes the components numbered in the illustration.

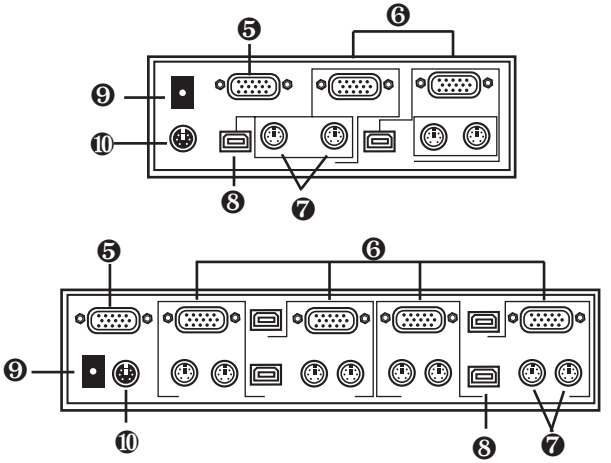

Figure 2-2. The ServSwitch back-panel views.

Table 2-2. Rear-panel components.

Component		Description
❺	Console VGA port	Attaches to the user monitor.
❻	Computer VGA ports	Connect to a computer's video cards.
❼	Computer PS/2 keyboard/mouse ports	Link to a computer's keyboard and mouse ports.
❽	Computer USB	Attaches to the USB port on a computer.
❾	Power connector	Connects to a 5-VDC, 2.5-A power supply (optional).
❿	Flash upgrade port 8-pin mini-DIN	Attach a flash upgrade cable to this port.

2.3 What's Included

The KV7012A or KV7013A package should contain the following items. If anything is missing or damaged, please contact Black Box.

- (1) 2- or 4-Port ServSwitch DT Pro KVM Switch
- (1) Flash cable
- This user's manual

2.4 What You'll Need to Supply

- ServSwitch DT Pro Cable (EHN7001213UV-0006, -0009, -0015): These cables connect to PCs that have USB and VGA connectors. The cables are available in 6-, 9-, and 15-foot (1.8-, 2.7-, and 4.5-m) versions.
- ServSwitch DT Pro Cable (EHN7001213UVP-0006, -0009, -0015): These cables connect to computers that have a PS/2 VGA and two 6-pin mini-DIN connectors. The cables are available in 6-, 9-, and 15-foot (1.8-, 2.7-, or 4.5-m) versions.
- Power supply that's specific to your country: United States (PS71013-US), Japan (PS71013-JP), Europe (PS71013-EU), United Kingdom (PS71013-UK), or Australia (PS71013-AU).

3. Installation

3.1 ServSwitch Placement

The 2- or 4-Port ServSwitch DT Pro KVM Switch is small, portable, and designed to fit 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

1. Power off all computers.
2. Connect your PS/2 keyboard and PS/2 mouse directly to the PS/2 keyboard and mouse ports (labeled with keyboard and mouse symbols) on the front of the ServSwitch. See Figure 3-1.

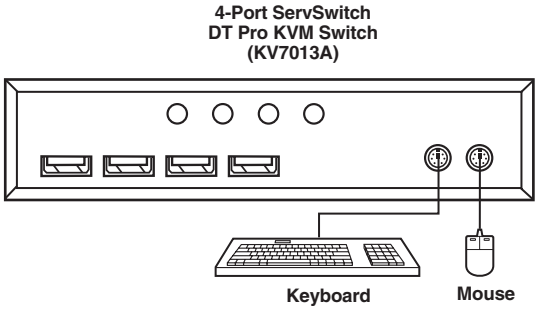

Figure 3-1. Keyboard and mouse connections.

3. Connect the HD15 VGA male connector from your monitor to the console VGA port on the back of the ServSwitch. See Figure 3-2.

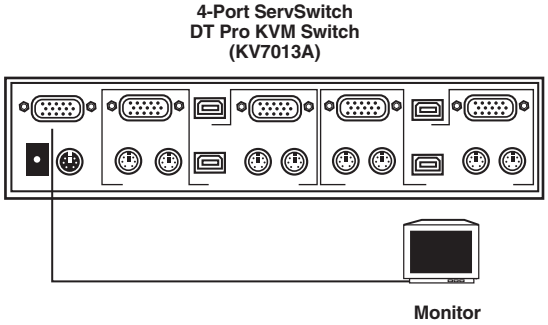

Figure 3-2. Console connections.

3.2.2 Powering On the ServSwitch

Connect the 5-V, 2.5-A 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. See Figure 3-3.

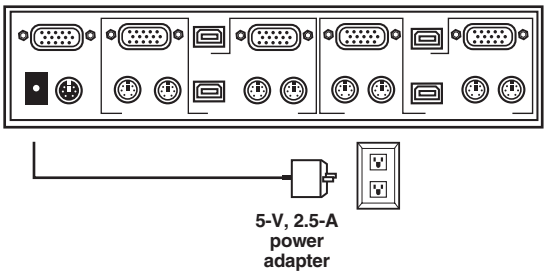

Figure 3-3. Power connections.

3.2.3 Connecting the Computers

USB Installation

1. Connect the ServSwitch DT Pro's USB cable (EHN7001213UV-0006) USB connector to the PC1 USB port on the back of the ServSwitch. Connect the cable's VGA connector to the ServSwitch unit's PC1 VGA connector. See Figure 3-4.

2. Connect the cable's male VGA and USB connectors to the corresponding connectors on the back of the computer.

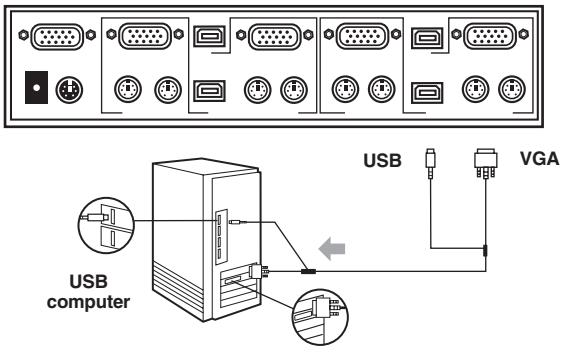

Figure 3-4. USB computer connections.

3. Repeat steps 1 and 2 for all computers.

4. Power on your computers. Your computers' operating systems should recognize the ServSwitch and will automatically install the USB driver if it was not already installed on your computers.

NOTE

On some computers, you must enable USB support on your system BIOS. Please refer to your computer manufacturer's manual or the motherboard manual to verify that USB support is enabled.

PS/2 Installation

1. Connect the ServSwitch DT Pro's PS/2 CPU cable (EHN7001213UVP-0006) to the computer's PS/2 keyboard, PS/2 mouse, and HD15 ports.

2. Connect the other end of the cable to the ServSwitch unit's HD15 connector. See Figure 3-5.

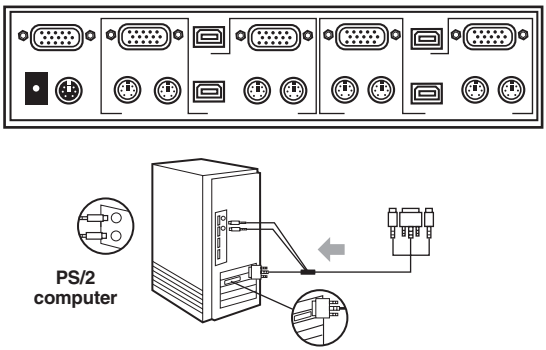

Figure 3-5. PS/2 computer connections.

NOTE

PS/2 computers without USB ports are not able to use the built-in USB 2.0 peripheral hub.

3.2.4 Connecting the USB Peripherals

Attach up to two or four USB peripherals to the USB Type A connectors on the ServSwitch. See Figure 3-6.

NOTE

You can attach a USB keyboard and mouse, but hotkey switching will not be enabled for these connections.

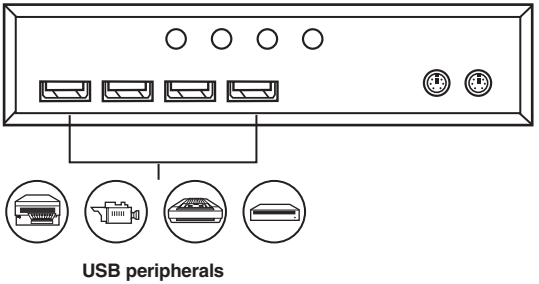

Figure 3-6. USB peripheral connections.

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.

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

To directly switch the KVM control to any computer via the simple keyboard command sequence, press the <Left-Ctrl> key twice and the <up-arrow> or <down-arrow> keys.

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> H *X*	Switch to USB hub device only.
<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> A *X*	Switch both the PC and USB hub device.
<Left-Ctrl><Left-Ctrl> C *X*	Switch the KVM control only.
<Left-Ctrl><Left-Ctrl> 0	Begin AutoScan.
Any key	Stop AutoScan.
<Left-Ctrl><Left-Ctrl> S	Enable/disable “beep” sound.

X = 1, 2, 3, 4

H = USB hub device

A = Combined PC and hub

NOTE

After switching ports, there is a delay of up to 2 seconds before the video displays. This is normal and is due to the video signal’s refresh rate.

4.3.1 Selecting USB Devices Connected to the 2- and 4-Port USB 2.0 Hub

The ServSwitch unit’s built-in 2- and 4-port USB 2.0 hub allows you to connect additional shared peripherals on a one-computer-at-a-time basis. When you connect a USB device to the ServSwitch, the device can be accessed through any computer that is connected to the installation via a simple hotkey command sequence (<Left-Ctrl><Left-Ctrl> H *X*).

4.3.2 Switching USB Devices Only

Using the hotkey command sequence below, you can share any device attached to the ServSwitch unit's built-in USB 2.0 hub from your currently selected computer.

1. To invoke the hotkey mode, press the <Left-Ctrl> key twice within two seconds.

2. Press the H key followed by the corresponding port number (1–4).

For example, pressing <Left-Ctrl><Left-Ctrl> H 1 switches USB hub access to the computer on port 1.

4.3.3 Switching to Another Computer But Allowing USB Devices to Remain on the Current Port

Using the hotkey command sequence below, you can asynchronously switch the KVM control and the USB devices. For example, you can print from one computer and switch the KVM control to another computer simultaneously.

1. To invoke the hotkey mode, press the <Left-Ctrl> key twice within two seconds.

2. Press the C key followed by the corresponding port number (1–4).

For example, pressing <Left-Ctrl><Left-Ctrl> C 1 switches the KVM control to the computer on port 1, but the USB device access remains on the port it was.

NOTE

Some USB storage devices are not suitable for dynamic port switching applications.

4.3.4 Switching Computers and USB Devices

Using the hotkey command sequence below, you can asynchronously switch the KVM control and the USB device access to any computer.

1. To invoke the hotkey mode, press the <Left-Ctrl> key twice within two seconds.

2. Press the A key followed by the corresponding port number (1–4).

For example, pressing <Left-Ctrl><Left-Ctrl> A 4 switches the KVM control and the USB hub access to the computer on port 4.

4.3.5 AUTOSCAN

The AutoScan feature allows you to monitor the activity of the connected computers at regular ten-second intervals so that you can monitor the computer activity without having to press the front-panel buttons. This time interval cannot be changed.

To invoke AutoScan, press <Left-Ctrl><Left-Ctrl> 0.

NOTES

The interval between these two keys should be no more than a half second. Once the scanning begins, it continues until you press any key to exit AutoScan.

A flashing port LED indicates that the connected computer is running AutoScan.

4.3.6 FLASH UPGRADE

With Internet flash-upgrade capability, you can update your ServSwitch with the latest firmware upgrades. Call Tech Support for details.

Appendix. Troubleshooting

A.1 Calling Black Box

If you determine that your 2- or 4-Port ServSwitch DT Pro 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 2- or 4-Port ServSwitch DT Pro KVM Switch:

- Package it carefully. We recommend that you use the original container.
- If you are shipping the 2- or 4-Port ServSwitch DT Pro 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.