BLACK BOX®
NETWORK SERVICES

BLACK BOX® ServSwitch™ Simplicity

JUNE 2000

SW613A
SW613A-K

Customer Support Information:
FREE tech support 24 hours a day, 7 days a week: Call **724-746-5500** or fax **724-746-0746**.
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BLACK BOX®
NETWORK SERVICES

Welcome to the ServSwitch™ Family!

Thank you for purchasing a BLACK BOX® ServSwitch™ Brand KVM switch! We appreciate your business, and we think you'll appreciate the many ways that your new ServSwitch keyboard/video/mouse switch will save you money, time, and effort.

That's because our ServSwitch family is all about breaking away from the traditional, expensive model of computer management. You know, the one-size-fits-all-even-if-it-doesn't model that says, "One computer gets one user station, no more, no less." Why not a single user station (monitor, keyboard, and mouse) for multiple computers—even computers of different platforms? Why not a pair of user stations, each of which can control multiple computers? Why not multiple user stations for the same computer?

With our ServSwitch products, there's no reason why not. We carry a broad line of robust solutions for all these applications. Do you have just two PCs, and need an economical alternative to keeping two monitors, keyboards, and mice on your desk? Or do you need to share dozens of computers, including a mix of IBM® PC, RS/6000®, Apple® Macintosh®, Sun Microsystems®, and SGI® compatibles among multiple users with different access levels? Does your switch have to sit solidly on a worktable and use regular everyday cables? Or does it have to be mounted in an equipment rack and use convenient many-to-one cables? No matter how large or small your setup is, no matter how simple or how complex, we're confident we have a ServSwitch system that's just right for you.

The ServSwitch™ family from Black Box—the one-stop answer for all your KVM-switching needs!

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This manual will tell you all about your new ServSwitch™ Simplicity, including how to install, operate, and troubleshoot it. For an introduction to the ServSwitch Simplicity, see **Chapter 2**. The ServSwitch Simplicity product codes covered in this manual are:

SW613A
SW613A-K

FEDERAL COMMUNICATIONS COMMISSION (FCC) AND INDUSTRY CANADA (IC) 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 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 classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

VOLUNTARY CONTROL COUNCIL ON INTERFERENCE (VCCI) RADIO-FREQUENCY INTERFERENCE STATEMENT

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

EUROPEAN UNION DECLARATION OF CONFORMITY

This equipment has been tested and found to comply with the requirements of the European EMC directive 89/336/EEC.

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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1. Specifications

Compliance —	CE; FCC Part 15 Subpart J Class B, IC Class/classe B; VCCI Class A
Standards —	VGA, SVGA, or XGA video
Interfaces —	Video: VGA; Keyboard and mouse: IBM PS/2 compatible
Resolution —	Up to 1024 x 768 noninterlaced at up to 85 Hz
Scan Interval —	In autoscan mode, pauses at each computer for 5 seconds
Maximum Distance —	10 ft. (3 m) from the Switch to any attached device
User Controls —	Keyboard commands; (1) Front-mounted SELECT pushbutton for switching between computers
Indicators —	(2) Top-mounted “selected computer” LEDs

Connectors — All side-mounted:
For user equipment:
(1) HD15 female for monitor attachment;
(2) 6-pin mini-DIN female for keyboard and mouse attachment;
For each computer:
(1) HD15 male for video attachment;
(2) 6-pin mini-DIN female for keyboard and mouse attachment

Maximum Altitude — 10,000 ft. (3048 m)

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

Humidity Tolerance — 5 to 80% noncondensing

Enclosure — Steel

Power — 5 VDC from attached CPUs' keyboard interfaces

Size — 1.2"H x 3.6"W x 4.2"D (3 x 9.1 x 10.7 cm)

Weight — 12 oz. (341 g)

2. Introduction

2.1 Overview

The ServSwitch™ Simplicity is a high-performance keyboard-, monitor-, and mouse-sharing device that supports a wide range of IBM® PC compatible hardware and software platforms. Use it to access two desktop computers from a single keyboard, monitor, and mouse.

Setup is fast and easy: Plug in the cables from the user equipment into the Simplicity, then run extension cables from the Simplicity to the computer CPUs, and then turn ON the CPUs and the monitor. There's no software to worry about, nothing to configure, and no need for a power supply!

You can switch between the computers either by pressing the Select button on the front of the Simplicity or by sending a hotkey command from the attached keyboard. You can also have the Simplicity scan back and forth between the computers, displaying the video from each one in turn.

2.2 Features and Benefits

- Control two desktop PCs from a single keyboard, monitor, and mouse.
- Draws its power from the attached computers—no AC outlet or power supply needed.
- Both connected computers can boot up automatically at the same time.
- You can switch between the two computers either by typing a keyboard-hotkey sequence or by pressing the front-panel pushbutton.
- You can use hotkey commands to start and stop automatic back-and-forth scanning between the two computers.
- Automatically saves and restores Caps Lock, Num Lock, and Scroll Lock keyboard states when you switch between computers.
- Supports resolutions up to 1024 x 768 pixels at resolutions up to 85 Hz.

- Supports Microsoft® IntelliMouse® and other common “wheel” mice.
- LEDs show which computer is selected.
- Easy installation.
- Tough metal case.

2.3 The Complete Package

You should have received these items if you ordered just the regular ServSwitch Simplicity (our product code SW613A):

- The ServSwitch Simplicity.
- Two hook-and-loop mounting strips (see **Section 3.2** for information about using these).
- Four adhesive rubber feet (see **Section 3.2** for information about using these).
- This manual.

If you ordered the ServSwitch Simplicity Kit (SW613A-K), you will also receive two KVM-extension cables for connecting your CPUs to the Switch. If you ordered just the Switch, we recommend that you buy these cables (available separately as our product code EHN403-0008 for standard cable or EHN235 for coaxial cable).

If you didn't receive everything, or if anything arrived damaged, contact Black Box right away.

2.4 The ServSwitch Simplicity Illustrated

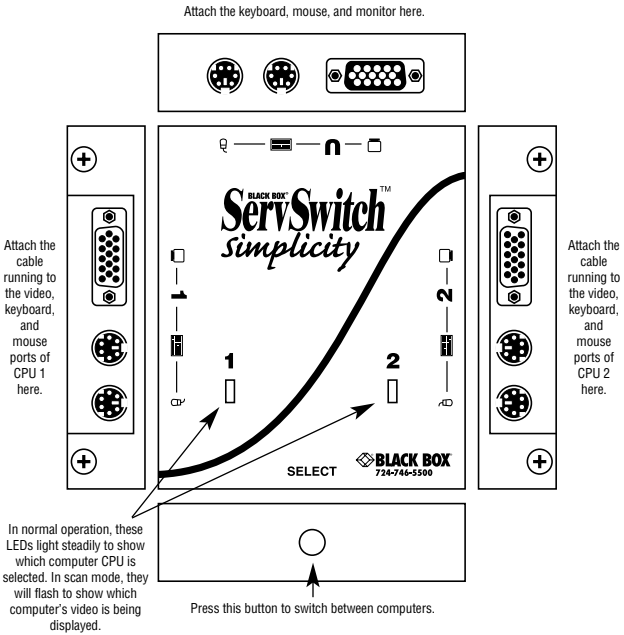

Fig. 2-1. Exploded view of the ServSwitch Simplicity.

3. Installation

3.1 What You Will Need

You'll need these things to be in place before you can install your ServSwitch Simplicity:

- Your monitor should be a VGA, SVGA, or multisync type capable of displaying the highest level of resolution that your PCs can output.
- Your keyboard and mouse must be PS/2 type (the attached cables will have 6-pin mini-DIN male connectors). The Simplicity supports Microsoft IntelliMouse and Logitech® and Kensington® wheel mice, but it does *not* support serial mice.
- Your PC CPUs—which should be desktop machines, *not* laptops—should have:
  - *Video card:* VGA, SVGA, or XGA.
  - *Keyboard port:* PS/2 type (6-pin mini-DIN female).
  - *Mouse port (if you're using a mouse):* PS/2 type (6-pin mini-DIN female).
  - *Mouse driver (if you're using a mouse):* The standard driver for your mouse, or the standard generic Microsoft mouse driver.

- If you ordered the Simplicity Kit (SW613A-K), you received a pair of KVM-extension cables that you can use to attach your CPUs to the Simplicity. If you only ordered the Simplicity itself (SW613A), however, you'll need to order such cables separately. We offer either an 8-ft. (2.4-m) standard extension cable (EHN403-0008) or a 10-ft. (3-m) coaxial extension cable (EHN235).

3.2 Placement

You'll want to put the ServSwitch Simplicity in a convenient, safe place close to the computer equipment it will be serving. It's designed to be either (a) set freely on a desktop or other flat surface or (b) permanently stuck to a wall, computer chassis, or other surface.

To place the Simplicity on a flat surface, use the four adhesive rubber feet that came with the unit. Peel the backing away from them and press them firmly onto the bottom of the Simplicity, one at each corner. When the feet are solidly in place, the Simplicity can be put wherever you want it to go.

To mount the Simplicity on a wall or other surface, use the two hook-and-loop strips that came with the unit. Peel the backing away from one side of each of the two strips and press the strips firmly onto the bottom of the unit. Then peel the backing away from the other side of the strips and press the bottom of the Simplicity firmly against the surface you want to mount the Simplicity on.

3.3 Connecting Your Devices

Making sure that all of your devices are powered OFF, take these steps to connect them to your ServSwitch Simplicity:

1. Plug the monitor, keyboard, and mouse into the matching user-port connectors (marked "U") on the back of the Simplicity, as shown in Figure 3-1.

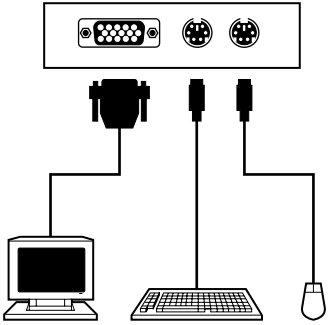

Fig. 3-1. Connecting user equipment.

2. Two KVM-extension cables are included with the SW613A-K Kit; if you only ordered the Simplicity itself, these cables are available separately. Run these cables from the video, keyboard, and mouse ports of your computer CPUs to the CPU-port connectors (marked “1” and “2”) on the sides of the Simplicity, as shown in Figure 3-2.

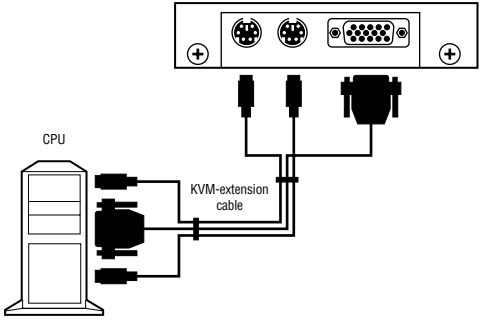

Fig. 3-2. Connecting a CPU.

3. Turn on your monitor and your CPUs. The Simplicity will begin operating immediately using the power from the CPUs' keyboard ports. (You don't have to use a mouse if you don't need to, but you *must* make the connections to the CPUs' keyboard ports in order to power the Simplicity.) The Simplicity will automatically switch to whichever computer you power up first; the matching numbered LED on its top panel will light up.

Your ServSwitch Simplicity system should now be ready for continuous operation.

4. Operation

The ServSwitch Simplicity is very simple to use. While you're working with either of the computer CPUs, it transparently passes through your keyboard and mouse input to the CPU, and passes through the CPU's video output back to your monitor. When you want to switch between the CPUs or scan back and forth between the CPUs, you can do so with one easy step.

You can switch between the CPUs in either of two ways: By pressing the SELECT button on the front of the Simplicity, or by sending the "hotkey" switching command from the keyboard. The hotkey switching command is [Ctrl] [Ctrl]: Either press and release left [Ctrl] twice or press and release right [Ctrl] twice. (Pressing left [Ctrl] followed by right [Ctrl] or vice versa does nothing.) The LEDs on the top panel of the Simplicity will show you which CPU is selected at any given time. The Simplicity will remember and restore the Caps Lock, Num Lock, and Scroll Lock settings of your keyboard for each CPU.

If at any time you want to watch what each CPU is doing, you can put the Simplicity in "scan mode." Do this by pressing and releasing first the left [Shift] key

and then the right [Shift] key on your keyboard, or pressing right [Shift] and then left [Shift]. (Pressing left or right [Shift] twice does nothing.) The Simplicity will begin to automatically switch back and forth between the video output of the two CPUs once every five seconds.

While scan mode is active, the top-panel LED corresponding to the CPU whose video is being displayed will flash approximately twice a second. To exit scan mode, press the spacebar; until you do so, the Simplicity won't accept any input from the keyboard. The CPU whose video is being displayed when you press the spacebar becomes the selected CPU.

5. Troubleshooting

If you ever have any problems with your ServSwitch Simplicity, first make sure that the computer CPUs and your monitor are plugged in and turned ON. Also make sure that all of the cables running from your equipment to the Simplicity are properly and securely attached.

If they are, see if the problem is listed in **Section 5.1** and, if so, try the suggested remedies. If nothing helps, call Black Box Technical Support as directed in **Section 5.2**. If you need to ship your Switch, see **Section 5.3**.

5.1 Common Problems

Problem:
Your keyboard isn't responding.

Possible Solutions:

1. Check the video on the monitor, and the LEDs on the Simplicity—is the Simplicity in scan mode (see **Chapter 4**)? If so, you'll have to press the spacebar to exit scan mode in order to get the keyboard to function normally.

2. The keyboard might need to be reset. Unplug it

from the Simplicity, then plug it back in.

3. The Simplicity might need to be reset. Unplug the extension cables that run to your computer CPUs, wait for five seconds, then plug them back in. (Unfortunately, this might crash your computer; if it does, reboot the computer.)

Problem:
Your mouse isn't responding.

Possible Solutions:

1. The mouse might need to be reset. Unplug it from the Simplicity, then plug it back in.

2. The Simplicity might need to be reset. Unplug the extension cables that run to your computer CPUs, wait for five seconds, then plug them back in. (Unfortunately, this might crash your computer; if it does, reboot the computer.)

3. The mouse might be in an unsupported mode: Some mice can be switched between PS/2 and serial modes. Make sure your mouse isn't set to serial mode, which the Simplicity doesn't support.

4. You might be trying to use an unsupported mouse or mouse driver. Most mice with special buttons or wheels, and most special mouse drivers and the mice that require them, aren't supported by the Simplicity. Try using a regular mouse with a generic mouse driver instead.

Problem:
You're having video problems.

Possible Solutions:

1. You might be trying to run video with too high a resolution, too high a refresh rate (frequency), or both. The maximum resolution and refresh rate that we recommend for the Simplicity are 1024 x 768 pixels at 85 Hz.

2. The KVM-extension cables that came with your Kit, or that we recommend be used with the standalone Simplicity, are *designed* to handle its video. If you're using other extension cabling, we suggest that it might be causing the problem, and that you should reconsider using the Simplicity's native cabling.

5.2 Calling Black Box

If your ServSwitch Simplicity seems to be malfunctioning, *don't try to fix it yourself.* It isn't user-serviceable. Contact Black Box Technical Support at 724-746-5500.

Before you do, make a record of the history of the problem. We'll 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—that is, what types of computers, what type of keyboard, brand of mouse, make and model of monitor, etc.;
- any particular software or procedure that seems to create the problem or make it worse; and
- the results of any testing you've already done.

5.3 Shipping and Packaging

If you need to transport or ship your ServSwitch Simplicity:

- Package it carefully. We recommend that you use the original container.
- Before you ship the unit back to Black Box for repair or return, contact us to get a Return Authorization (RA) number.

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