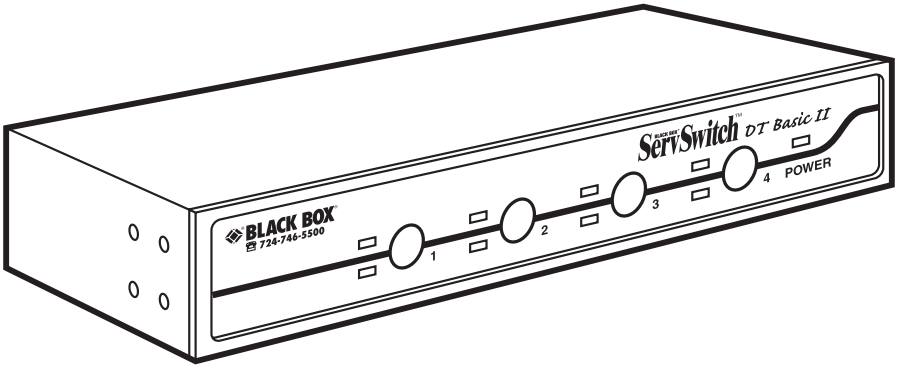
© Copyright 2008. Black Box Corporation. All rights reserved.

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

BLACK BOX
NETWORK SERVICES

NOVEMBER 2008
KV7022A
KV7024A

ServSwitch DT Basic II



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**

TRADEMARKS USED IN THIS MANUAL

Black Box and the Double Diamond logo are registered trademarks of BB Technologies, Inc. ServSwitch is a trademark of BB Technologies, Inc.

PS/2, IBM, and AT are registered trademarks of IBM Corporation.

Microsoft and IntelliMouse are registered trademarks of Microsoft Corporation.

Any other trademarks mentioned in this manual are acknowledged to be the property of the trademark owners.

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 classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

Contents

Chapter Page

1. Specifications 2

2. Overview 2

3. Features 3

4. Installation 4

5. Initial Powerup 6

6. Operations 6

7. Troubleshooting 8

1. Specifications

Automatic Scan Interval: 3, 8, 15, 30 seconds
Cable Length (Maximum): 20 ft. (30.4 m) at console,
20 ft. (30.4 m) at PC
Cascade Control PC Number: KV7022A: Up to 4;
KV7024A: Up to 16
Front-Panel Button Control: KV7022A: 1;
KV7024A: 4
Hot-Key Control: Yes
Hot Plug-and-Play: Console
Number of Ports: KV7022A: 2;
KV7024A: 4
Resolution (Maximum): 1920 x 1440, DDC2B
Connectors: Keyboard: 6-pin mini DIN F;
Mouse: 6-pin mini DIN F;
Monitor: HD15 F
Power: 5 VDC from the keyboard interface
Size: KV7022A: 1.6"H x 4.9"W x 2.7"D (4 x 12.4 x 7 cm);
KV7024A: 1.7"H x 7"W x 1"D (4.4 X 22 x 13 cm)
Weight: 0.8 lb. (0.4 kg)

2. Overview

The ServSwitch™ DT Basic II enables you to access two IBM® compatible computers from one keyboard, monitor, and mouse. To switch between computers, simply press the push button or enter hotkey commands from your keyboard. There is no interface card or software to install. The ServSwitch is independent of the computer operating system, allowing the attached computers to run different applications.

The space-saving design enables you to connect all the cables to the back of the ServSwitch, saving space on your desk.

The ServSwitch DT Basic II also features automatic mouse conversion, so you can connect computers with either PS/2 or serial mouse ports and control both computers from one PS/2 mouse. The ServSwitch automatically identifies the mouse and switches to the proper mouse protocol.

3. Features

- Supports computers using both PS/2 and serial mice.
- Cascadable to expand system capability.
- Autoscan automatically selects computers sequentially.
- Supports Microsoft® IntelliMouse® Pro and IntelliTrackball.
- Hot-key functions for easy computer access.
- Built-in buzzer for hotkey command confirmation.
- Keyboard settings are automatically saved and restored when switching computers.
- Operating system independent; transparent to all applications.
- True plug-and-play system configuration.
- Keyboard and mouse are hot-swappable.
- VGA video with resolutions up to 1920 x 1440.
- DDC2B compatible.
- No power supply needed.

4. Installation

Console ports connection

Turn off your computers. Connect a PS/2 mouse and a PS/2 keyboard to the 6-pin mini DIN ports of the ServSwitch DT Basic II marked with mouse and keyboard icons. Then connect your VGA monitor cable directly to the Console HD15 port. See Figure 4-1 below.

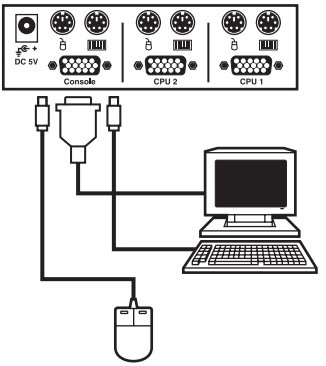


Figure 4-1. Keyboard, monitor, and mouse (console) connection.

The monitor connected to the ServSwitch DT Basic II must be capable of synchronizing with the computer's video signal. If you are uncertain about the monitor type, please consult the monitor's user manual.

The ServSwitch uses very little power and is designed to run reliably without an external power adapter.

Computer connections

Now connect the two or more computers you wish to control to the ServSwitch DT Basic II as shown in Figure 4-2 below. Use a ServSwitch DT Basic II (3-in-1) Cable (EHN70023-xxxx) to connect the first PC's keyboard port to the corresponding keyboard port. Connect your computer's VGA port to the HD15 port on the ServSwitch. Follow the same procedures for the second computer using the second set of keyboard, monitor, and mouse ports.

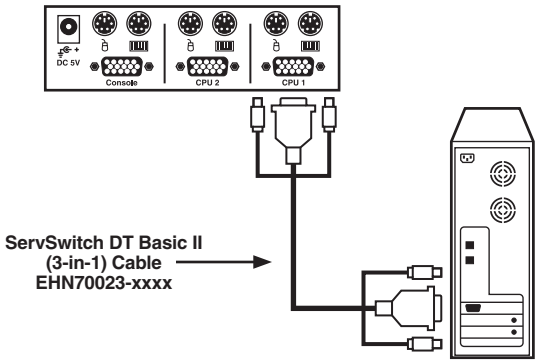


Figure 4-2. Computer connection.

If your computer uses a serial mouse, you need to connect a mouse adapter to the computer's mouse port as shown in Figure 4-3 below.

NOTE:
Use only the mouse adapter provided.

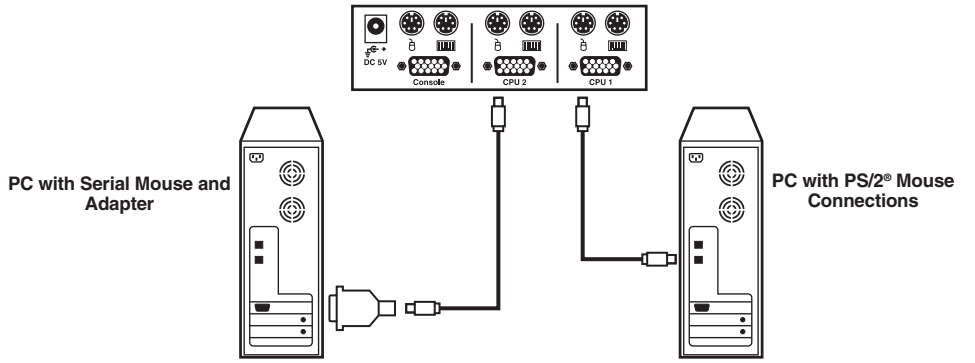


Figure 4-3. Adapter and serial mouse connection.

NOTES

1. You can't connect a serial mouse to the Console side of the ServSwitch DT Basic II. It only works with a PS/2 mouse. The automatic mouse conversion system on the Console side of the ServSwitch enables you to connect computers using a serial mouse and control the computers from one PS/2 mouse.

2. Be aware that the mouse adapter can only be used on the Computer side. It will not work on the Console side.

3. If your PC uses an AT® style keyboard, you will need an AT to PS/2 keyboard adapter on the PC side to connect the cable to the KV7022A or the KV7024A.

5. Initial Power-up

Make sure all computers and the ServSwitch DT Basic II are powered down during installation. After connection, simply power up the computers. This procedure ensures the ServSwitch receives computer settings correctly when the computer boots.

As a result, the ServSwitch will generate correct responses and allow both computers to boot successfully without user intervention. Should you decide to expand the system in the future or to replace failed devices, you may hot plug any additional computer and ServSwitch (as long as they are powered off) to the system.

6. Operations

Front-panel operation

You may switch to a different computer by pressing the front-panel push button manually or by issuing hotkey commands. The front-panel red indicator light changes to reflect the computer port selected. The indicator flashes while in either Auto Scan or Manual Scan mode.

Hotkey commands

The ServSwitch interprets keystrokes for hotkeys. A hotkey command is a short keyboard sequence to select a computer, to activate computer scan, etc. A 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 command; otherwise, one low-pitched beep sounds for an error, and the bad key sequence will not be forwarded to the selected computer.

• Left **Ctrl** + left **Ctrl** + **1** selects the computer at Port 1; left **Ctrl** + left **Ctrl** + **2** selects the computer at Port 2. Use the numbers above the letters on the keyboard, not the keypad at the right of the keyboard.

• To start *Auto Scan*, which automatically scans powered-on computers one by one at a fixed interval, press left **Ctrl** + left **Ctrl** + **F1**. To abort the *Auto Scan* mode, press the left **Ctrl** key twice.

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. The length of the *Auto Scan* interval (*Scan Rate*) is adjustable (see below).

• *Manual Scan* enables you to manually switch back and forth between powered-on computers. Press left **Ctrl** + left **Ctrl** + **F2** to start *Manual Scan*. Press the up or down arrows to select the previous or the next computer in sequence. Press any other key to abort the *Manual Scan*.

•To adjust *Scan Rate*, which sets the duration before switching to the next computer in auto scan, press left **Ctrl** + left **Ctrl** + **F3.**

The ServSwitch generates 1 to 4 beeps indicating a scan interval of 3, 8, 15, or 30 seconds respectively.

•To adjust keyboard typing rate (characters/sec), press left **Ctrl** + left **Ctrl** + **F4,** which overrides that of BIOS and any operating system.

The ServSwitch generates 1 to 4 beeps corresponding with 10, 15, 20, and 30 characters/second respectively.

6. Troubleshooting

If your ServSwitch DT Basic II doesn't appear to be working properly, ensure that all cables are well-seated. Check that keyboard/mouse cables are not swapped. Label and bundle the cables for each computer to avoid confusion when connected to the ServSwitch. If those suggestions don't work, see Table 6-1 below.

Table 6-1. Problems/Solutions.

Symptom	Causes	Solutions
Keyboard or mouse doesn't work	Improper power-up sequence. Keyboard or mouse not properly initialized.	Press and hold down the push button for 3 seconds to re-initialize the keyboard and mouse. If problem persists, unplug the keyboard or mouse, wait for a few seconds, and then plug it back in.
Keyboard error on boot	Loose keyboard connection.	Make sure keyboard cables are well-seated.
Keyboard strokes shifted.	The computer was in shifted state when last switched.	Press both SHIFT keys.
Auto Scan does not switch PC automatically and ServSwitch beeps.	All PCs are off or only one PC is turned on. Auto Scan mode works for powered-on computers only.	Turn computers on. Press left **Ctrl** key twice to abort Auto Scan mode.
The up and down arrow keys do not work in Manual Scan.	All PCs are off or only one PC is turned on. Manual Scan mode works for powered-on computers only.	Turn computers on. Press any other key to abort Manual Scan mode.

Table 6-1 (continued). Problems/solutions.

The ServSwitch fails to function occasionally.	Computers do not supply enough power.	Add a power adapter with minimum of DC 9V 600-mA output rating to the spare power jack.
Computer cannot use serial mouse.	Loose mouse adapter. Incorrect mouse adapter.	Secure the mouse adapter to computer's COM port. Use only the mouse adapter supplied.
Not functional in cascade configuration.	In master/slave configuration, the master unit must have equal or more PC ports than that of slaves.	KV7022A can be a slave of KV7022A or KV7024A. If KV7022A is a master, then KV7024A cannot be its slave.

Calling Black Box

If you determine that your 2- or 4-Port ServSwitch DT Series 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.

Shipping and Packaging

If you need to transport or ship your 2- or 4-Port ServSwitch DT Series Switch:

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

• If you are shipping the 2- or 4-Port ServSwitch DT Series 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.

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.