



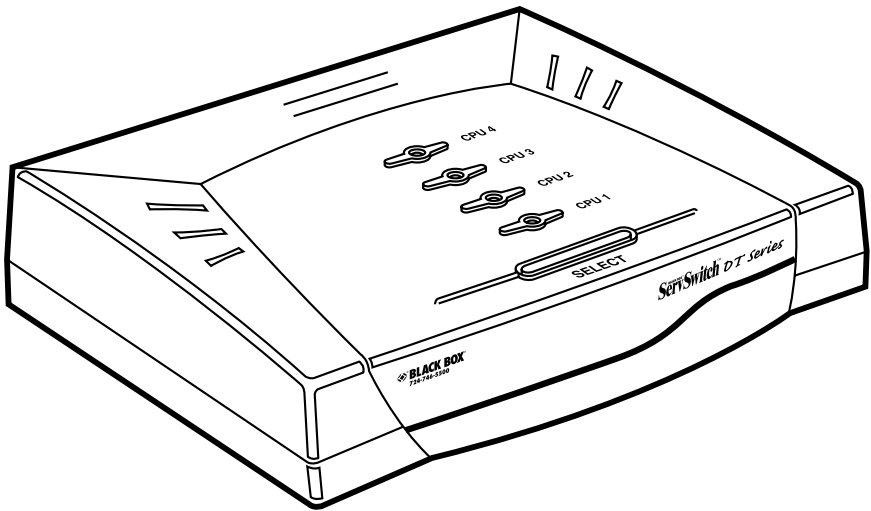
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1000 Park Drive • Lawrence, PA 15055-1018 • 724-746-5500 • Fax 724-746-0746



## 2- and 4-Port ServSwitch— DT Basic with Audio



**CUSTOMER  
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INFORMATION**

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**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 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.

## 2- AND 4-PORT SERVSUITCH—DT BASIC WITH AUDIO

### TRADEMARKS USED IN THIS MANUAL

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

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

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# 1. Specifications

**Resolution:** 2048 x 1536

**Supported Operating Systems:** Windows® 95/98/Me/2000/XP and Windows NT®

**Hotkeys:** Yes

**User Controls:** (1) port selection button

**Connectors:** Both: (1) barrel connector for power;

Console end: Monitor, keyboard, and mouse: (1) HD15 female;

Audio/microphone: (2) 3.5-mm jacks;

KV7004A: Computer end: Monitor, keyboard, and mouse: (2) HD15 female;

Audio/microphone: (4) 3.5-mm jacks;

KV7005A: Computer end: Monitor, keyboard, and mouse: (4) HD15 female;

Audio/microphone: (8) 3.5-mm jacks

**Indicators:** KV7004A: (2) Port LEDs;

KV7005A: (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:** From the interface

**Size:** KV7004A: 0.3"H x 3.4"W x 1.4"D (0.8 x 8.6 x 3.6 cm);

KV7005A: 0.2"H x 4.7"W x 1.8"D (0.5 x 11.9 x 4.6 cm)

**Weight:** KV7004A: 1 lb. (0.5 kg);

KV7005A: 1.6 lb. (0.7 kg)

## 2. Overview

### 2.1 Introduction

The 2- or 4-Port ServSwitch™—DT Basic with Audio allows you to control up to two or four computers from a single HD15 console (keyboard, mouse, and monitor). Supported mice include Microsoft® IntelliMouse® and other mice.

The compact and portable ServSwitch works with common operating systems, including Windows 95/98/Me/2000/XP and Windows NT.

Setup is fast and simple, and there's no software to configure. It fits neatly on your desktop. And the ServSwitch works with a specially designed cable. (A 3-in-1 connector on the EHN70045 cable incorporates one HD15 and two 6-pin mini-DIN circuitry into a single HD15 connector. This connector attaches to an HD15 connector on the ServSwitch.)

Use either top-panel buttons on the ServSwitch or hotkeys on your keyboard to select ports or start AutoScan. The top-panel buttons include integral LEDs. The LED will light with the corresponding active port when manually 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.

The ServSwitch supports video resolutions of up to 2048 x 1536.

## 2.2 Components

### 2.2.1 TOP PANEL

Figure 2-1 shows the 4-Port ServSwitch top view. Table 2-1 describes the components numbered in the illustration.

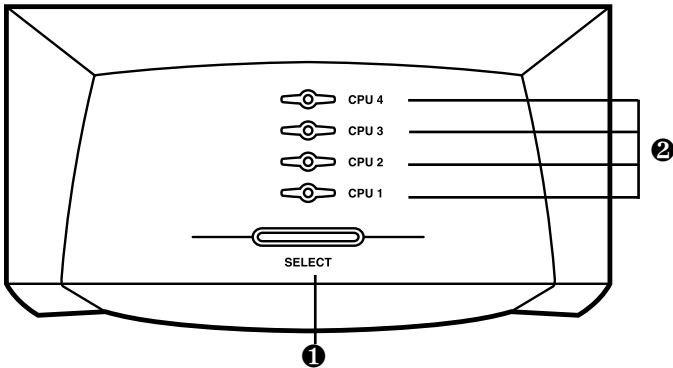


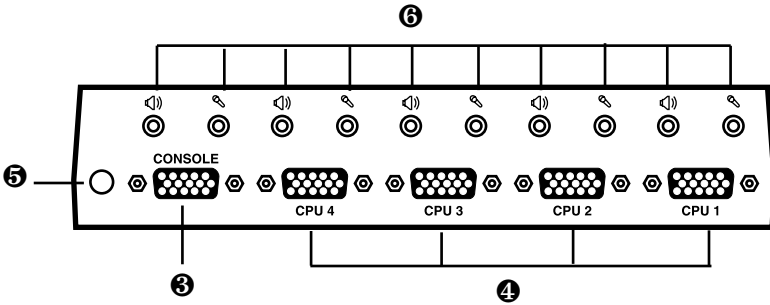
Figure 2-1. The 4-Port ServSwitch top-panel view.

Table 2-1. Top-panel components.

Component	Description
① Select button	Press to select a computer.
② Port LEDs	Integral LEDs on the port buttons light when the connected computer is selected.

**2.2.2 REAR PANEL**

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



**Figure 2-2. The 4-Port ServSwitch back-panel view.**

**Table 2-2. Rear-panel components.**

<b>Component</b>	<b>Description</b>
<b>3</b> Console VGA port	Attaches to the user monitor.
<b>4</b> Computer VGA ports	Connect to a computer's video cards.
<b>5</b> Power connector	Connects to a 9-VDC, 600-mA power supply (optional).
<b>6</b> 3.5-mm connectors	Connects to audio (speaker and microphone).

**2.3 What's Included**

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

- (1) 2- or 4-Port ServSwitch—DT Basic with Audio
- This user's manual

### 2.4 Cables That You'll Need to Supply

- ServSwitch—DT Basic Cables (EHN70045-0006, -0009, -0015): These cables connect to computers that have an HD15 and two 6-pin mini-DIN connectors.

#### **NOTE**

**A 2-foot (0.6-m) cable (EHN70045-0002) is required for user (not CPU) connections. You must purchase this cable (EHN70045-0002) for console side connection. Without this cable, you can NOT connect to your keyboard/monitor/mouse.**

# 3. Installation

## 3.1 ServSwitch Placement

The 2- or 4-Port ServSwitch—DT Basic with Audio is small, portable, and designed to fit on or under 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.**

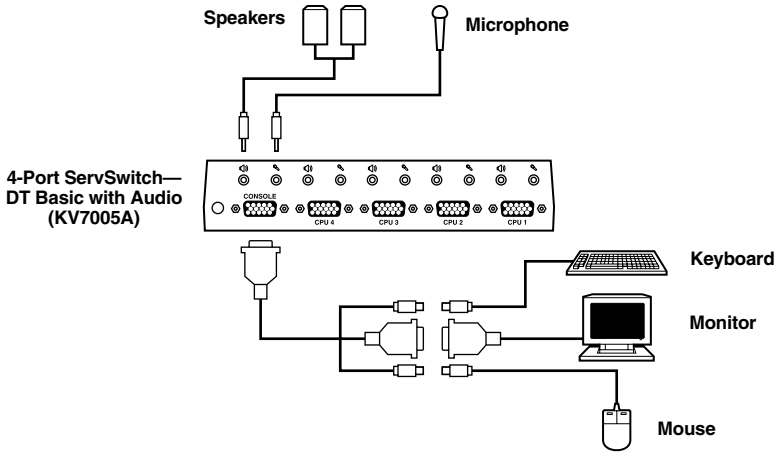
**To prevent damage caused by ground potential differences, make sure that all devices are properly grounded. If you don't follow these instructions, your computers and/or the ServSwitch could be damaged.**

### 3.2.1 CONNECTING THE CONSOLE, KEYBOARD, AND MOUSE

1. Power off all computers.
2. Connect your 6-pin mini-DIN keyboard and mouse to the HD15 to HD15, (2) 6-pin mini-DIN cable (EHN70045-0002).
3. Connect the HD15 VGA male connector from your monitor to the HD15 connector on the cable. Connect the HD15 connector at the other end of the cable to the console VGA port on the back of the ServSwitch. See Figure 3-1.

## 2- AND 4-PORT SERVSCHITCH—DT BASIC WITH AUDIO

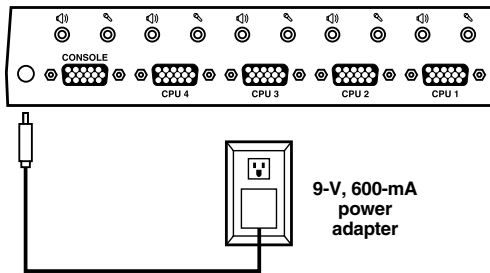
- Using your speakers' attached audio cable, connect the 3.5-mm male plug to the console Audio port (noted by the Audio symbol) on the ServSwitch unit's back panel. Then connect your microphone's attached audio cable to the console's Microphone port (noted by the Microphone symbol) on the ServSwitch unit's back panel. See Figure 3-1.



**Figure 3-1. Console monitor, keyboard, mouse, and audio connections.**

### 3.2.2 POWERING ON THE SERVSCHITCH (OPTIONAL)

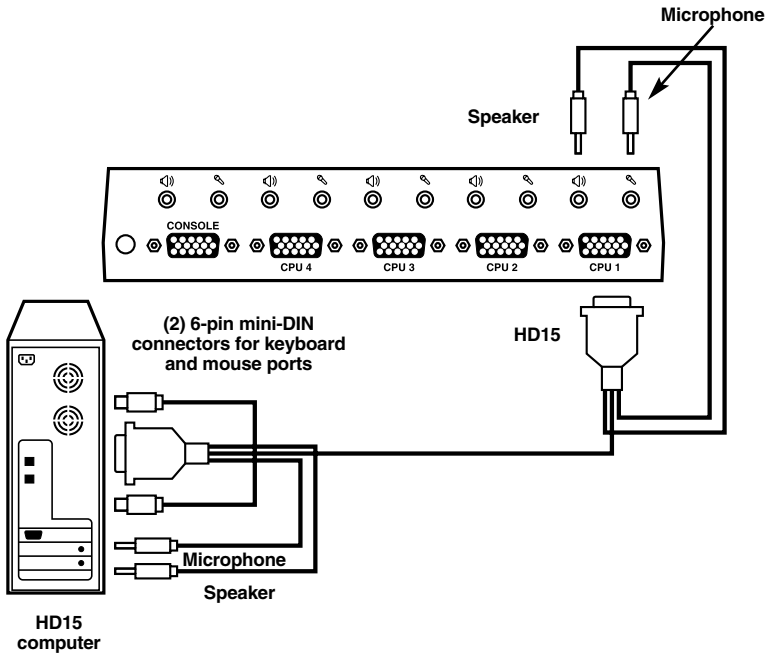
Connect the 9-V, 600-mA power adapter's barrel connector to the power jack on the rear of the switch. Then plug the power adapter cable into an available power outlet. See Figure 3-2.



**Figure 3-2. Power connections.**

### 3.2.3 CONNECTING THE COMPUTERS

- Using the ServSwitch unit's HD15 cable (EHN70045), connect the HD15 KVM connector to the PC1 HD15 port on the back of the ServSwitch. See Figure 3-3. Connect the two audio connectors (follow the PC99 color codes) to the corresponding ports on the back of the ServSwitch.



**Figure 3-3. Connecting the computer, speakers, and microphone.**

- Connect the male VGA connector to the corresponding female VGA port on the back of the computer. Connect the two 6-pin mini-DIN connectors to the keyboard and mouse connectors on the back of the PC. Connect the audio (speakers) connector and the microphone connector (follow the PC99 color codes) to the back of the PC. (Refer to Figure 3-3.)
- Repeat steps 1 and 2 for all computers.
- Power on your computers. Your computers' operating systems should recognize the ServSwitch and will automatically install the HD15 driver if it was not already installed on your computers.



## 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 Top-Panel Buttons

You can instantly select any computer by pressing the port selector buttons on the top 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 type the switch port number. Each computer is assigned a numeric ID.

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, you can switch the KVM control to any computer via the simple keyboard command sequence using the <Left-Ctrl> key and the <up-arrow> and <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> x	Switch to PC "X".
<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> 0	Begin AutoScan.
Space bar	Stop AutoScan.

x = 1, 2, 3, 4

## 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.**

### AUTO SCAN

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 top-panel pushbuttons. This time interval cannot be changed.

To invoke AutoScan, press <Left-Ctrl><Left-Ctrl> 0. To stop AutoScan, press the **Space bar**.

## NOTES

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

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

# Appendix. Troubleshooting

## **A.1 Calling Black Box**

If you determine that your 2- or 4-Port ServSwitch—DT Basic with Audio 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 Basic with Audio:

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