

2- and 4-Port ServSwitch DT USB/Dual DVI/Audio KVM Switches

These two- and four-port KVM switches provide the ultimate in multimedia and USB switching.



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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.

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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 la 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 debe 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 per head

Supported Operating Systems — Windows® 98 SE/Me/2000/XP, and Windows Vista™, Mac OS X, Linux®

User Controls — KV9622A: (1) Port Selection button;
KV9624A: (4) Port Selection buttons, (2) FUNC buttons

NOTE: Early models of KV9624A only have (1) FUNC button.

Connectors — (1) Power;
Console end: KV9622A, KV9624A: (2) DVI-I, (4) USB Type A, (2) 3.5-mm jacks for audio (speaker and microphone);
Computer end: KV9622A: (4) DVI-I, (2) USB Type B, (4) 3.5-mm jacks for audio (speaker and microphone);
KV9624A: (8) DVI-I, (4) USB Type B, (8) 3.5-mm jacks for audio (speaker and microphone)

NOTE: The KV9622A physically has DVI-I connections, however, it only supports DVI-D or digital video signals. The KV9624A will support either digital or analog video, but not both at the same time.

Indicators — (2) or (4) Port

Temperature Tolerance — Operating: +32 to +104° F (0 to +40° C);
Storage: -4 to +140° F (-20 to +60° C)

Power — 9-12 VDC, 1.5-A power supply (included)

Size — KV9622A: 2.25"H x 6.31"D x 4.19"D (5.71 x 16.03 x 10.64 cm);
KV9624A: 2.25"H x 8.7"W x 4.19"D (5.71 x 22.09 x 10.64 cm)

Weight — KV9622A: 2.2 lb. (1 kg);
KV9624A: 3.5 lb. (1.6 kg)

2. Overview

2.1 Introduction

The 2- or 4-Port ServSwitch USB/DVI/Audio KVM Switch (KV9622A or KV9624A) enables you to control up to four PCs, G3/G4 Mac®, or Mac Pro computers from one USB keyboard, one USB mouse, and two DVI [Digital Visual Interface] monitors, plus audio. You can also share two peripherals—plus a keyboard and mouse—among the two or four computers. A built-in USB hub ensures smooth switching from one computer to the other. Supported mice include USB, Microsoft® IntelliMouse® and other mice.

Setup is fast and simple, and there's no software to configure. Its small footprint is ideal for on or under your desktop. Use the front-panel buttons on the ServSwitch™ 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 Features

- Supports DVI dual displays running in scan mode with resolutions up to 1920 x 1200 @ 60 Hz. KV9622A supports digital only; KV9624A supports digital and analog.
- Two or four computers share up to four different USB peripherals (keyboard and mouse are included in this count).
- Select computers via front-panel buttons or hotkeys.
- Adjust the video signal strength using the rear-panel FUNC button (4-port model only).
- Select the audio via hotkeys.
- Needs no drivers for keyboard and mouse operation.
- Supports keyboard and mouse plug-and-play.
- Buzzer sound confirms computer switching.
- Press front-panel buttons to activate AutoScan.
- Selectable scan time interval.
- Supports two DVI monitors.
- Self-powered USB operation.

- No software required.
- Hotkey functions allow easy computer access.
- Supports Windows, Mac, and Linux® host systems.

2.3 Components

2.3.1 Front Panel

Figure 2-1 shows the 2-Port ServSwitch DT Series (KV9622A) front view. Figure 2-2 shows the 4-Port ServSwitch DT Series (KV9624A) front view. Table 2-1 describes the components numbered in the illustrations.

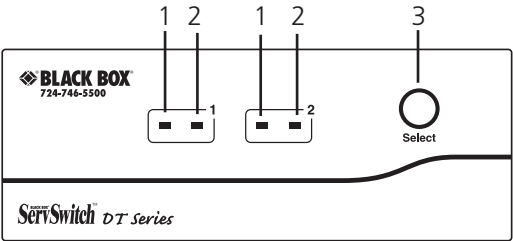


Figure 2-1. The 2-Port ServSwitch (KV9622A) front-panel view.

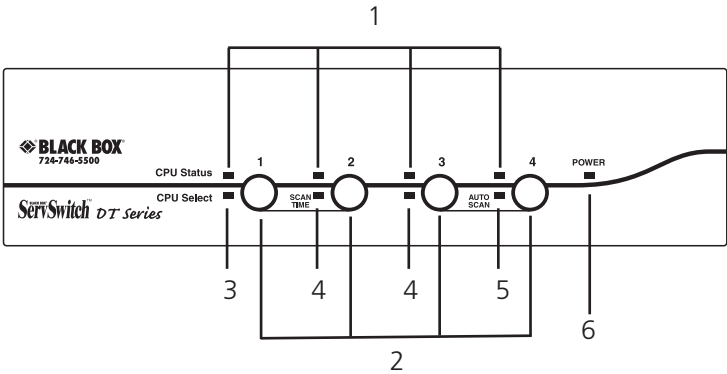


Figure 2-2. The 4-Port ServSwitch (KV9624A) front-panel view.

Table 2-1. Front-panel components (KV9622A and KV9624A).

Number	Component	Description
1	CPU Status LEDs	LEDs light when the connected computer is powered on.
2	Port selection buttons	Press buttons 1–4 individually to select a computer.
2	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 times of 3, 8, 15, or 30 seconds, respectively.
2	AutoScan buttons	Press buttons 3 and 4 together to start AutoScan.
3	CPU Select LED	LEDs light when the connected computer is selected.
4	Scan time LEDs	LED lights when you select Scan time interval.
5	AutoScan LED	LED lights during AutoScan.
6	Power LED	Lights when power is on.

2.3.2 Rear Panel

Figure 2-3 shows the 2-Port ServSwitch unit’s (KV9622A) rear view. Figure 2-4 shows the 4-Port ServSwitch unit’s (KV9624A) rear view. Table 2-2 describes the components numbered in the illustrations.

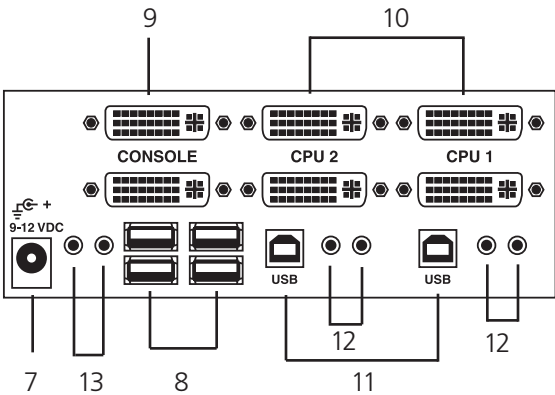


Figure 2-3. The 2-Port ServSwitch (KV9622A) back-panel view.

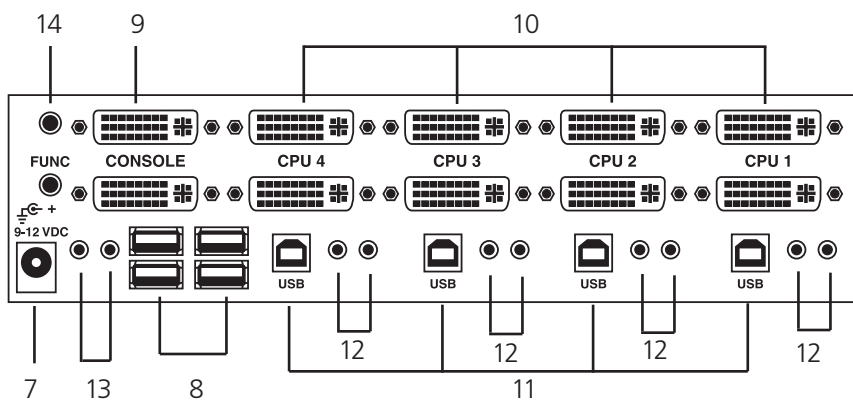


Figure 2-4. The 4-Port ServSwitch back-panel view.

Table 2-2. Rear-panel components (KV9622A and KV9624A).

Number	Component	Description
7	Power connector	Connects to a 9–12-VDC, 1.5-A power supply
8	Console USB Type A ports	Keyboard and mouse ports for console.
9	Console DVI ports	Attaches to the user monitor.
10	Computer DVI ports	Connect to a computer’s video cards.
11	Computer USB Type B ports	Keyboard/mouse ports for computers.
12	Computer audio ports	Connect to speakers and microphones.
13	Console audio ports	Connect to speaker and microphone.
14	(2) Func buttons	Select video strength via these buttons (4-port model only).

2.4 What’s Included

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

- 2- or 4-Port ServSwitch DT Series USB/DVI/Audio KVM Switch
- (1) universal power supply, output: 9-12 VDC, 1.5 A
- This user’s manual

2.5 What You'll Need to Supply

- (2) DVI monitors
- USB keyboard
- USB mouse
- 2- and 4-Port ServSwitch DT 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-, 2.7-, and 4.5-m) versions.
- Audio cable (EJ110-0002, -0005, -0010, -0015): These cables connect to audio and are available in 2-, 5-, 10-, and 15-foot (0.6-, 1.5-, 3-, and 4.5-m) versions.

3. Installation

PC BIOS NOTE:

The following BIOS setup changes are required for PC users and not required for Mac users.

- 1. In STANDARD CMOS, set HALT ON ERROR to ALL BUT KEYBOARD.*
- 2. In PNP and PCI SETUP, set PNP OS INSTALLED to YES and set USB IRQ to ENABLED.*

NOTE: The KV9622A or KV9624A is set to switch USB keyboard and mouse signals from one computer to another. If you plan to share other peripherals such as a CCD camera, printer, or scanner, you must shut down the computer's driver before switching to another computer. Because port switching is equivalent to unplugging the USB cable from one computer and plugging it into another computer, some USB drivers check the attached USB peripherals all the time and are not plug-n-play.

3.1 ServSwitch Placement

The 2- or 4-Port ServSwitch DT Series USB/DVI/Audio 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 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 and Figure 3-2. Attach your DVI cables from your monitors directly to the DVI ports. Then connect the speakers and microphone to the console's audio ports.

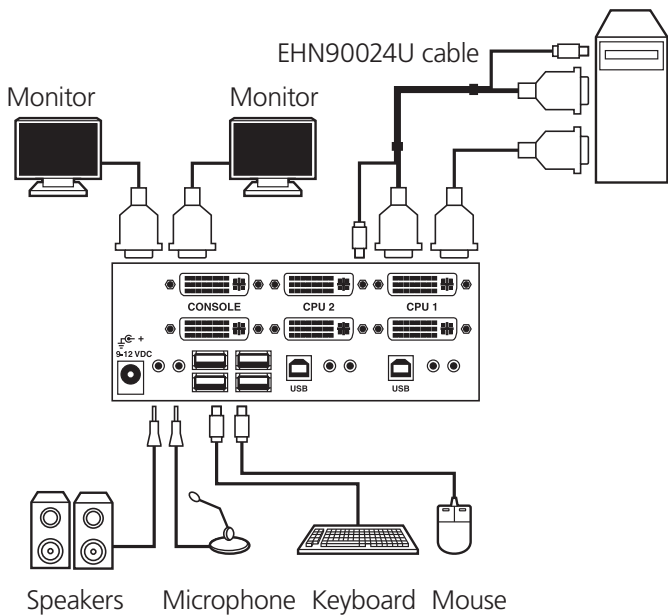


Figure 3-1. KV9622A Console keyboard, mouse, monitor, and audio connections.

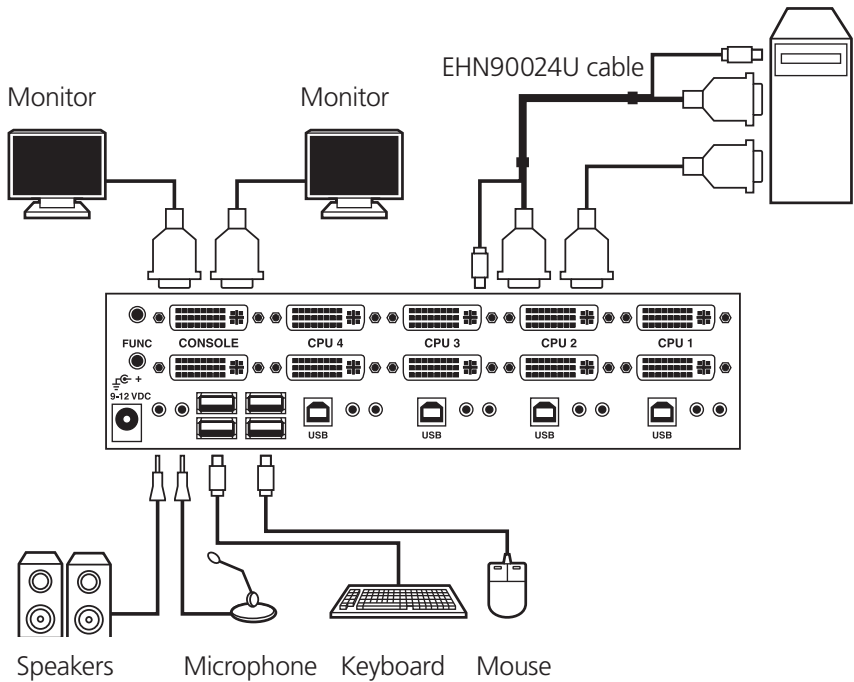


Figure 3-2. KV9624A Console keyboard, mouse, monitor, and audio connection.

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 3-3 and Figure 3-4. 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.

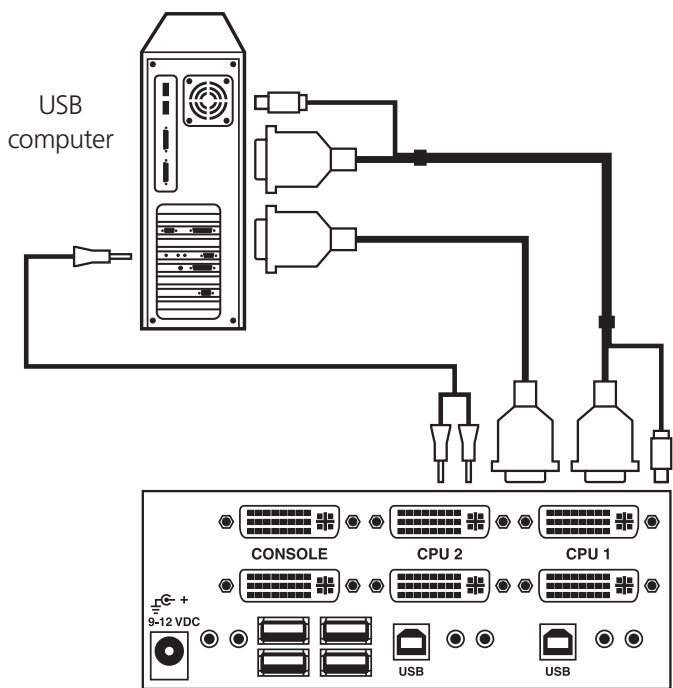


Figure 3-3. Computer connection to the KV9622A.

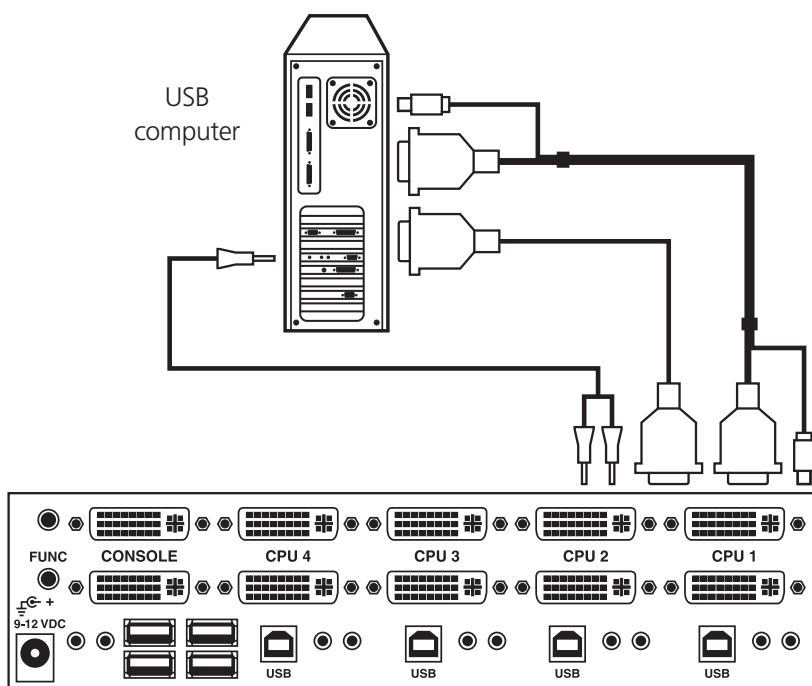


Figure 3-4. Computer connection to the KV9624A.

3.2.3 Initial Power On

After connecting the ServSwitch, power on the 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 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 Hotkey Commands

A hotkey command is a short keyboard sequence used to select a computer, activate a computer scan, etc. A hotkey sequence starts with two left Ctrl key-strokes followed by one or two more keystrokes. A built-in buzzer generates a high-pitched beep for a correct hotkey command. The buzzer sounds one low-pitched beep to indicate an error (in this case, the bad key sequence will not be forwarded to the selected computer). Table 4-1 lists hotkey commands and their functions.

To enable/disable the hotkey commands, press and hold Left-Shift key, then press Num Lock key twice, then release Shift, and then press Left-Ctrl once.

NOTE: Do not use the keypad to the right of the keyboard.

Table 4-1. Hotkey commands.

Key Sequence	Function
Left-Ctrl + Left-Ctrl + 1	Selects the computer connected to Port 1.
Left-Ctrl + Left-Ctrl + 2	Selects the computer connected to Port 2.
Left-Ctrl + Left-Ctrl + F1	AutoScan powered on computers one by one at a fixed interval.
Left-Ctrl + Left-Ctrl	Aborts AutoScan.
Left-Ctrl + Left-Ctrl + F2	Enables ManualScan, which enables you to switch back and forth between powered-on computers. Press the <up-arrow> or <down-arrow> key to select the previous or the next computer in sequence. Press any other key to abort ManualScan.

Table 4-1 (continued). Hotkey commands.

Key Sequence	Function
Left-Ctrl + Left-Ctrl + F3	To adjust Scan Rate, this command sets the duration between switching to the next computer in AutoScan. The 4-Port ServSwitch DT Series switch generates 1 to 4 beeps, indicating a scan interval if 3, 8, 15, and 30 seconds, respectively.
Left-Ctrl + Left-Ctrl + F5	Audio Stick: You can link an optional multimedia module to the back of each KVM switch to select microphone and stereo speaker signals. There are two options for Audio Stick: ON and OFF. When set to ON, audio selection follows computer selection. When set to OFF, audio selection stops following computer selection. The ServSwitch beeps once for ON and twice for OFF. You'd use this to listen to a particular computer's audio signal while operating other computers.
Left Ctrl + Left-Ctrl + A	Press this key sequence to select audio for the chosen computer. Use when Audio Stick is set to OFF.
Left-Ctrl + Left-Ctrl + F7	Press this hotkey to turn ON/OFF the USB port rule (USB 1).
Left-Ctrl + Left-Ctrl + F8	Press this hotkey to turn ON/OFF the USB port rule (USB 2). NOTE: There are two options for USB Port Rule: ON and OFF. When set to ON, USB port selection follows computer selection. When set to OFF, USB port selection stops following USB port selection.
Left-Ctrl + Left-Ctrl + U	Press this key sequence to select USB for the chosen computer.

NOTE: Link the USB device before switching to the next computer.

4.4 Alternate Hotkey Commands

In addition to the Left-Ctrl + Left-Ctrl hotkeys, there are two other hotkey sequences programmed into the ServSwitch.

Hotkey sequence #1: Left-Ctrl + Left-Ctrl + _

Hotkey sequence #2: Scroll-Lock + Scroll-Lock + _

Hotkey sequence #3: Left-Shift + Num Lock + Num Lock + _

For keyboards that don't have or won't support Scroll Lock, press and HOLD the Left-Shift key, and then press the Num-Lock key twice. For example, to select a computer:

Hold Left-Shift + Num-Lock + Num-Lock then release Shift and type 1. This selects the computer at port 1.

Chapter 4: Operation

Hold Left-Shift + Num-Lock + Num-Lock then release Shift and type 2. This selects the computer at port 2.

4.5 Function Button

NOTE: The Function (FUNC) button is only for the 4-port model (KV9624A).

Use the Function button on the rear of the unit (#5 in Figure 2-2) to adjust the video signal strength according to the length or quality of DVI cable. It also selects the audio signal from any of the connected computers' four ports.

To adjust the video signal strength, follow these steps:

1. Press the Function button three times.
2. Press push button #1 one or two times to adjust the selected port's input video strength. One beep = normal or two beeps = enhance.

or

Press push button #3 one or two times to adjust the selected port's output current. One beep = normal or two beeps = enhance.

or

Press push button #4 one, two, three, or four times to adjust the selected port's output emphasis. One beep = no pre-emphasis, two beeps = low pre-emphasis, three beeps = medium pre-emphasis, or four beeps = high pre-emphasis.

3. Once the setting is finished, press the Function button one time to exit the setting.

To select the audio signal from any of the connected computers' four ports, press the Function button in combination with the other push buttons as described below.

1. Press and hold the Function button. Either all the four green LEDs light to indicate the audio port and the selected computer port are the same (this is called tracking mode) or just one green LED lights to indicate that the audio port is different from the selected computer port (called non-tracking mode).
2. While holding down the Function button, press push button #1, #2, #3, or #4 to select audio port 1, 2, 3, or 4, respectively.

or

Hold down the Function button and press push buttons #1 and #2 together to enter tracking mode.

3. Release the Function button to exit the setting.

Appendix: Troubleshooting

Appendix. Troubleshooting

A.1 Problems/Causes/Solutions

Problem: The keyboard or mouse does not work.

Cause #1: In AutoScan, the keyboard and mouse do not function.

Solution #1: Press any front-panel button to select a computer, then use the keyboard and mouse.

Cause #2: Too many keyboard or mouse drivers are installed.

Solution #2: Remove all unnecessary keyboards and mouse drivers.

Problem: A newly installed USB device does not work.

Cause #1: Improper device driver.

Solution #1: Re-install the device driver.

Cause #2: The device consumes too much power.

Solution #2: The device should be self-powered or add a power adapter to the device.

Cause #3: Improper device initialization.

Solution #3: Make sure that the USB cable is well-seated to ensure proper communication.

Cause #4: When the ServSwitch works under self-power (residual power from computer USB ports), it supports a maximum of 100 mA as specified by USB.

Solution #4: To remove all power sources to the ServSwitch, unplug all USB A-B cables and the power adapter, then start all over again.

Select the computer by push button, then restart the computer and try again.

Problem: The computer hangs up while switching.

Cause: Initializing a device takes too much time.

Solution #1: Wait at least 5 seconds before switching the computer for proper USB communication.

Solution #2: Turn off the device driver (not keyboard or mouse) before switching the computer.

Problem: AutoScan does not switch a PC automatically and the ServSwitch beeps.

Cause: All PCs are off or only one PC is powered on. The scan mode works for powered-on computers only.

Solution: Power on the computers.

Problem: The resolution is not good or the video is not working.

Cause: Improper ServSwitch video settings.

Solution: Press the FUNC button on the rear of the unit to adjust the optimal video signal strength according to the length or quality of DVI cable (4-port model only).

Problem: When users plug and unplug the DVI connector or switch from port to port, there is no video signal.

Cause #1: Some DVI video cards don't respond to simultaneous switch signals.

Solution #1: Wait a few seconds, then use the Function button to adjust the video signal strength.

Cause #2: You are using analog video through a DVI-I cable with the KV9622A.

Solution #2: The KV9622A does not support analog video. You will need to use digital video signals only with the 2-port model.

A.2 Contacting Black Box

If you determine that your 2- or 4-Port ServSwitch DT Series USB/DVI/Audio KVM Switch is malfunctioning, do not attempt to alter or repair the unit. It contains no user-serviceable parts. Contact Black Box Technical Support at 724-746-5500 or info@blackbox.com.

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.

Appendix: Troubleshooting

- 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.

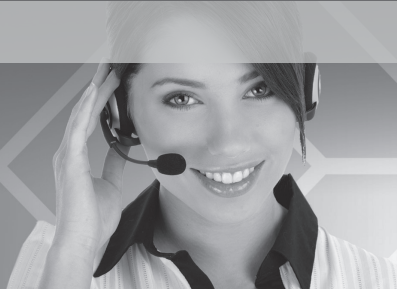
A.3 Shipping and Packaging

If you need to transport or ship your 2- or 4-Port ServSwitch DT USB/Dual DVI/Audio KVM Switch:

- Package it carefully. We recommend that you use the original container.
- If you are shipping the 2- or 4-Port ServSwitch DT USB/Dual DVI/Audio 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.

Black Box Tech Support: FREE! Live. 24/7.

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