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BLACK BOX KV9612A ServSwitch DT Series USB or DVI or Audio KVM Switches User Manual

KV9612A KV9614A
ServSwitch DT Series USB/DVI/Audio KVM Switches

Control up to two or four PCs, or G3/G4 Mac or Mac Pro computers from a single console (USB keyboard, USB mouse, and DVI [Digital Visual Interface] monitor, plus audio). Share two peripherals between two or four computers.
Include a built-in hub.

Contents

Customer Support Information

FREE technical support 24 hours a day, 7 days a week: Call 877-877-2269 or visit blackbox.com Mailing address: Black Box Corporation, 1000 Park Drive, Lawrence, PA 15055-1018 Web site: **www.blackbox.com** · E-mail: **info@blackbox.com**

FCC and NOM Statement

FEDERAL COMMUNICATIONS COMMISSION AND INDUSTRY CANADA RADIO FREQUENCY INTERFERENCE STATEMENT

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 B 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

2- and 4-Port ServSwitch DT Series USB/DVI/Audio KVM Switch

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Specifications

Hotkeys: Yes
Resolution: 1920 x 1200 @ 60 Hz
Supported Operating Systems: Windows

User Controls:
KV9612A: (1) port button;
KV9614A: (4) port buttons (labeled 1–4) also used for Scan time buttons and AutoScan, (1) function button
Connectors: KV9612A: Both models: (1) Power
Console end: (1) DVI-I, (4) USB Type-A, (2) 3.5-mm jacks for audio (speaker and microphone)
Computer end: (2) DVI-I, (2) USB Type B, (4) 3.5-mm jacks for audio (speaker and microphone)

KV9614A:
Console end: (1) DVI-I, (4) USB Type-A, (2) 3.5-mm jacks for audio (speaker and microphone);
Computer end: (4) DVI-I, (4) USB Type B, (8) 3.5-mm jacks for audio (speaker and microphone

Indicators:
KV9612A:(2) Port, (2) Power;
KV9614A :(4) Port, (4) Power for CPUs, (1) Power for switch
Temperature Tolerance:
Operating: +32 to +104° F (0 to +40° C);
Storage: -4 to +140° F (-20 to +60° C

Power: From the interface or via a 9-12-VDC, 1.5-A power supply (included

Size:
KV9612A: 1.5″H x 3.9″W x 6.3″D (3.8 x 9.8 x 15.9 cm);
KV9614A: 1.7″H x 8.7″W x 5.1″D (4.3 x 22 x 12.8 cm

Weight:
KV9612A: 1.5 lb. (0.7 kg)
KV9614A: 2.2 lb. (1 kg

Overview

2.1 Introduction

The 2- or 4-Port ServSwitch'" USB/DVI/Audio KVM Switch enables you to control up to two or four PCs. or G3/G4 Mac or Mac Pro computers from a single console (USB keyboard, USB mouse, and DVI [Digital Visual Interface] monitor, plus audio). You can use it to share two peripherals—plus a keyboard and mouse—among up to four computers. It supports Microsoft¯ IntelliMouse"c and other mice.
Setup is fast and simple, and no configuration software is needed. Its small desktop footprint makes it ideal for on or under your desktop. Use the front-panel buttons on the ServSwitchM 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 single link with resolutions up to 1920 x 1200 @ 60 Hz.
- 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 front-panel FUNC button (4-port only).
- Select the audio via hotkeys.
- Needs no drivers for keyboard and mouse operation.
- Supports keyboard and mouse plug-and-play.

- A buzzer sound confirms computer switching.
- Press front-panel buttons to activate AutoScan (4-port only).
- Selectable scan time interval.
- Supports one DVI monitor
- Self-powered USB operation.
- No software is required.
- Hotkey functions allow easy computer access.
- Supports Windows, Mac, and Linux⁻ host systems.

2.3 Components

2.3.1 KV9612A Front Panel

Figure 2-1 shows the 2-Port ServSwitch DT Series front view. Table 2-1 describes the components numbered in the illustration.
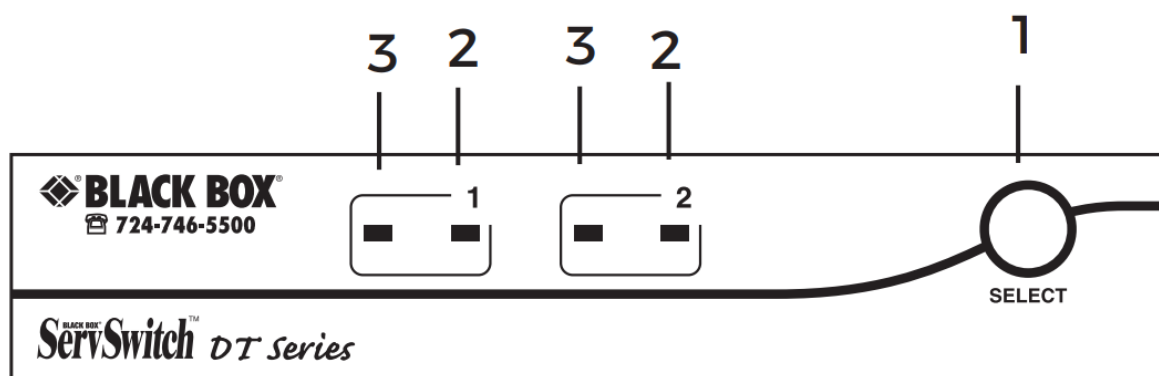

Figure 2-1. The 2-Port ServSwitch DT Series front-panel view.
Table 2-1. KV9612A front panel components.

No.	Component	Description
1	Port selection button	Press the button to select a computer.
2	Port LEDs	The right LEDs light to show the port that is currently selected
3	Power LED	Lights when the connected computer is powered on

2.3.2 KV9612A Rear Panel
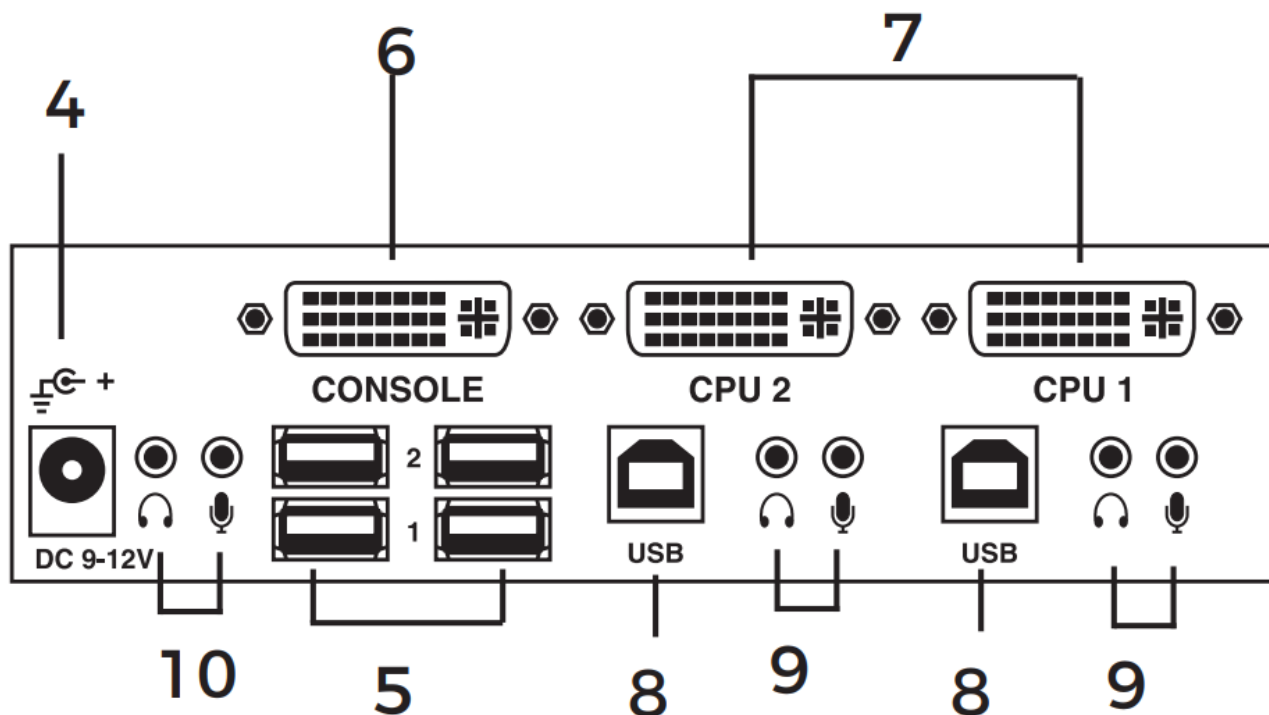Figure 2-2 shows the 2-Port ServSwitch rear view. Table 2-2 describes the components numbered in the illustration.

Figure 2-2. The 2-Port ServSwitch back-panel view.
Table 2-2. KV9612A rear-panel components

No.	Component	Description
4	Power connector	Connects to a 9-12-VDC, 1.5-A power supply.
5	Console USB Type-A ports	Keyboard and mouse ports for the console. Also two ports for peripherals.
6	Console DVI port	Attaches to the user monitor.
7	Computer DVI ports	Connect to a computer's video cards.
8	Computer USB Type B ports	Keyboard/mouse/peripheral computers. ports for
9	Computer audio ports	Speakers and microphones connect here.
10	Console audio ports	Speaker and microphone connect here.

2.3.3 KV9614A Front Panel

Figure 2-3 shows the 4-Port ServSwitch DT Series front view. Table 2-3 describes the components numbered in the illustration.
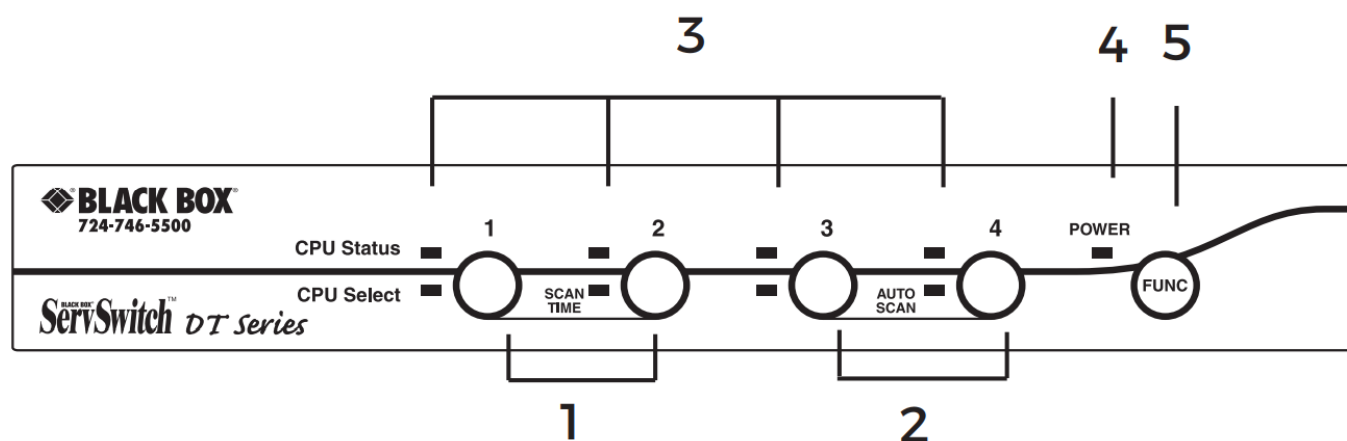
Figure 2-3. The 4-Port ServSwitch DT Series front-panel view.
Table 2-3. KV9614A front-panel components.

No.	Component	Description
1. 2	Port selection buttons	Press buttons 1-4 individually to select a romp' itpr
1	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	Port LEDs	The top four LEDs (next to the port selection buttons) light when the connected computer is powered on. The bottom four LEDs light to show the port that is currently selected.
4	Power LED	Lights when power is on.
5	Function button	Adjusts video signal strength or selects audio signal. See Section 4.5.

2.3.4 KV9614A Rear Panel
Figure 2-4 shows the 4-Port ServSwitch rear view. Table 2-4 describes the components numbered in the illustration.
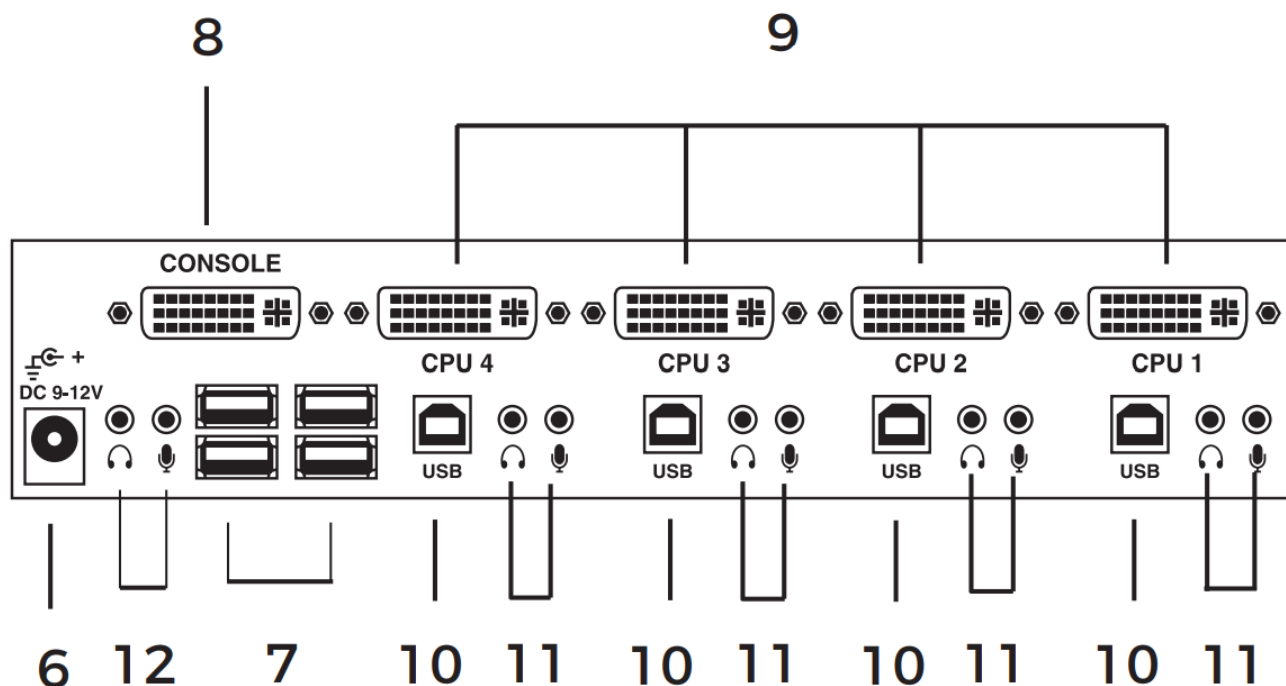
Figure 2-4. The 4-Port ServSwitch back-panel view.
Table 2-4. KV9614A rear-panel components.

No.	Component	Description
6	Power connector	Connects to a 9-12-VDC, 1.5-A power supply.
7	Console USB Type-A ports	Keyboard and mouse ports for the console. Also two ports for peripherals.
8	Console DVI port	Attaches to the user monitor.
9	Computer DVI ports	Connect to a computer's video cards.
10	Computer USB Type B ports	Keyboard/mouse/peripheral computers. ports for
11	Computer audio ports	Speakers and microphones connect here.
12	Console audio ports	Speaker and microphone connect here.

2.4 What's Included
The package should contain the following items. If anything is missing or damaged, please contact Black Box.

- (1) Switch
- (1) Power Supply with US Power Cord
- (1) Set of Rubber Feet (4)

2.5 What You'll Need to Supply

- DVI monitor

- USB enabled computer
- Microphone and speaker
- USB keyboard
- USB mouse
- KV9612A: 2-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.
- KV9614A: 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.

Installation

PC BIOS NOTE: The following BIOS setup changes are required for PC users but 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 KV9612A and KV9614A are 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 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 is turned off to all the devices that you will be connecting.
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 on the back of the

ServSwitch as shown in Figures 3-1 and 3-2. Attach your DVI cable from your monitor directly to the DVI port. Then connect the speakers and microphone to the console's audio ports.

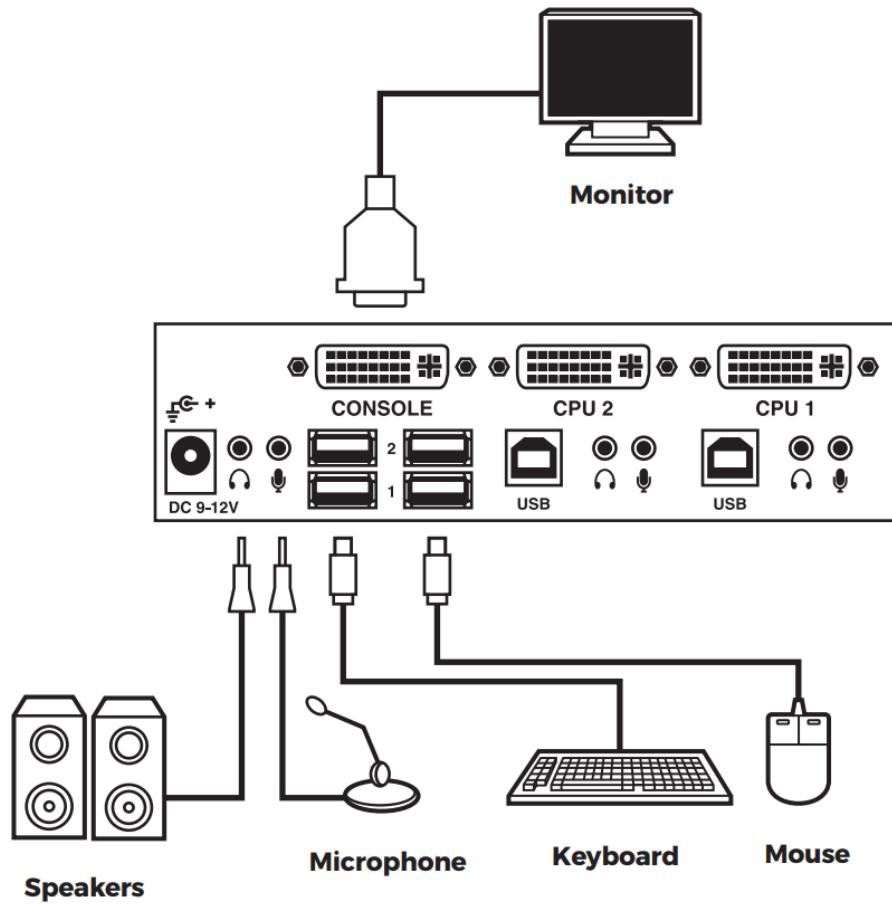3. Connect your USB peripherals (if present) to USB ports 1 and 2.

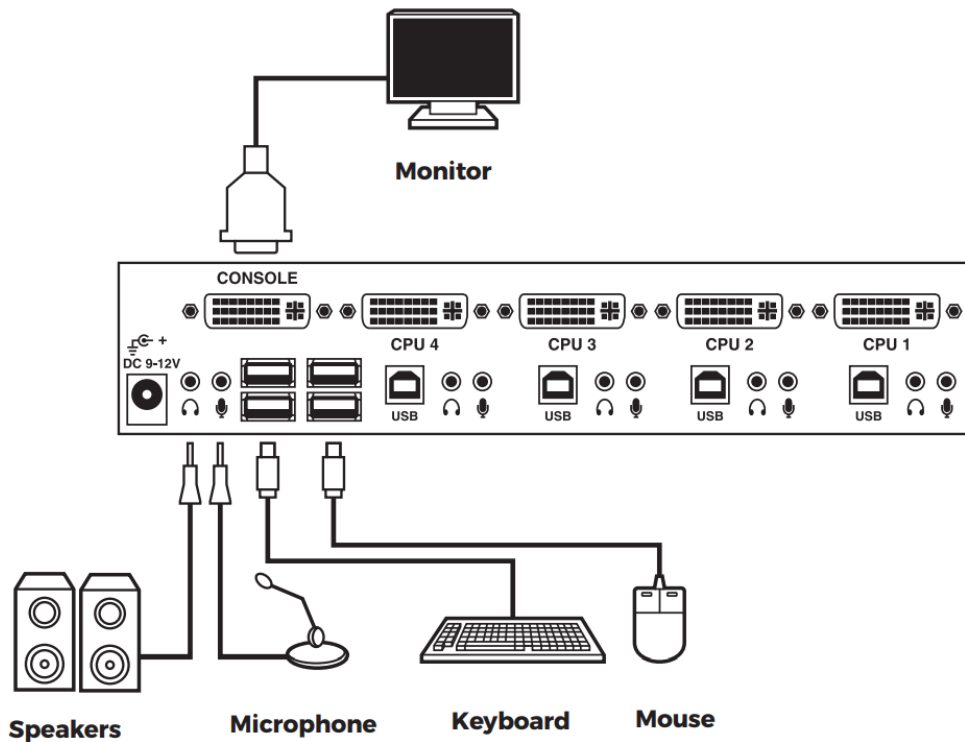Figure 3-1. KV9612A: console keyboard, mouse, monitor, and audio connections.

Figure 3-2. KV9614A: console keyboard, mouse, monitor, and audio connections.

NOTES: The monitor connected to the DVI-I port must be able to synchronize 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 connector to the computer's USB port. Connect the cable's DVI -I connector to your computer's DVI-I monitor port as shown in Figures 3-3 and 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.
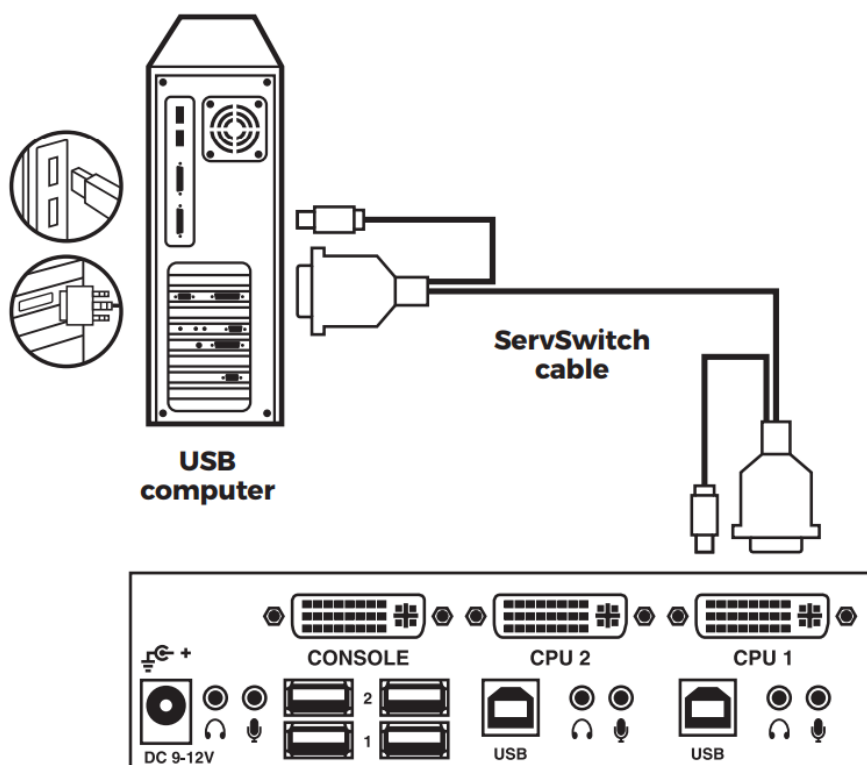

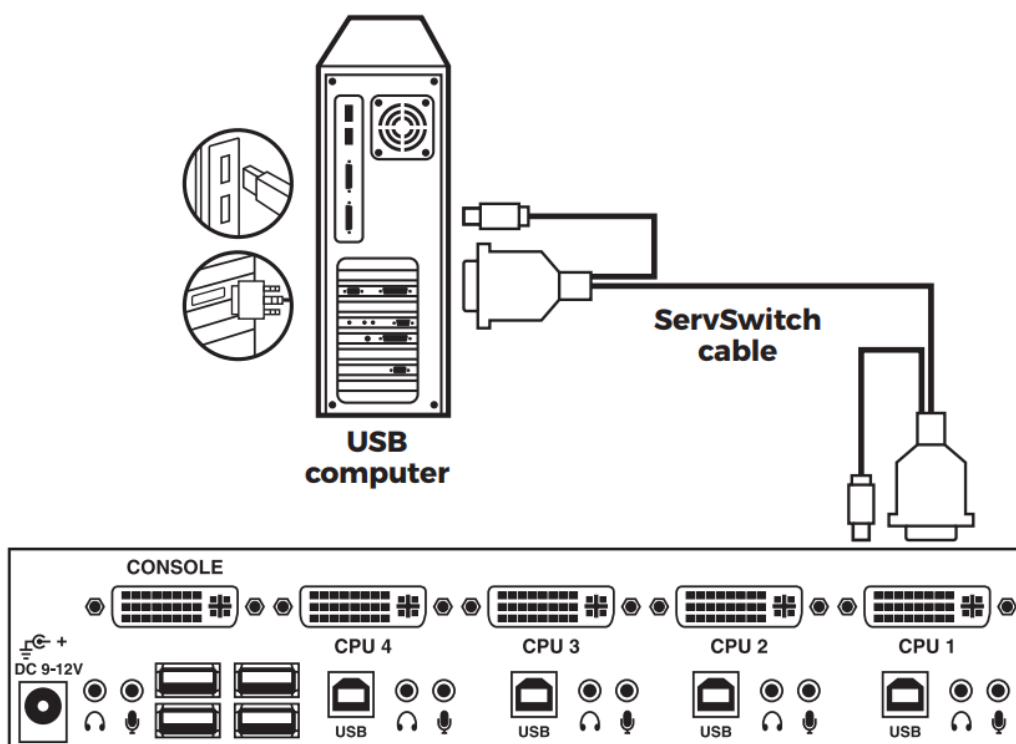Figure 3-3. KV9612A: computer connection.

Figure 3-4. KV9614A: computer connection.

3.2.3 Initial Power On

After connecting the ServSwitch, power on the computers. The ServSwitch will get enough power to operate the computers.

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 selection button(s) on the front panel. The corresponding LED lights 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 keystrokes (in 0.2 seconds) followed by one or two more keystrokes. A built-in buzzer generates a high-pitched beep for a correct hotkey command. The buzzer sounds like 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, hold Left-Ctrl + Left-Shift, then press Num-Lock + Num-Lock, then release Left-Ctrl + Left-Shift.

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, etc.
Left-Ctrl + Left-Ctrl + Fl	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.

Table 4-1 (continued). Hotkey commands.

Key Sequence	Function
Left-Ctrl + Left-Ctrl + F3	To adjust Scan Rate, this command sets the duration before switching to the next com- pute r in AutoScan. The 4-Port ervSwitch DT Series generates 1 to 4 beeps, indicating a scan in terval of 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 switches t o 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 sele ction. The ServSwitch beeps once for ON and twice for OFF. 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 se t to Off.)
Left-Ctrl + Left-Ctrl + U	Press this hotkey to select the USB port (for both 2-port and 4-port ServSwitch).
USB port setting for 2-port	ServSwitch:
Left-Ctrl + Left-Ctrl + F7	Press this hotkey to turn ON/OFF the USB1 and USB2 ports on the console side.
USB port setting for 4-port	ServSwitch:
Left-Ctrl + Left-Ctrl +F7	Press this hotkey to turn ON/OFF the USB1 port on the console side.
Left-Ctrl + Left-Ctrl + F8	Press this hotkey to turn ON/OFF the USB2 port on the console side.

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.
NOTE: Make sure the USB device linking procedure has finished before switching to another 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: Hold 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 press 1. This selects the computer at Port 1.
Hold Left-Shift + Num-Lock + Num-Lock then release Shift and press 2. This selects the computer at Port 2.
4.5 Function Button (4-Port Only)
Use the Function button on the front panel (#5 in Figure 2-3) to adjust the video signal strength according to the length or quality of the 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 ideo strength. One beep = normal or two beeps = enhance.

   Press push-button #3 one or two times to adjust the selected port's out-put 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

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. See Section 4.2.
Cause #2:	Too many keyboard or mouse drivers are installed.
Solution #2:	Remove all unnecessary keyboard 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:	The device consumes too much power instantaneously.
Solution #3:	If the device does not have a power jack, add a 9–12-VDC power adapter with less than a 1-A current rating to the ServSwitch.
Cause #4:	Improper device initialization.
Solution #4:	Make sure that the USB cable is well-seated to ensure proper communication.
Cause #5:	When the ServSwitch works under self-power (you have not added a power supply), it supports a maximum of 100 mA as specified by USB.

Solution #5:	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 pushing the button, then restart the computer, and try again. See Sections 4.2–4.4.
Problem:	The computer hangs up while switching.
Cause:	Initializing a device takes too much time.
Solution #1:	Wait at least five 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.
Cause:	Improper ServSwitch video settings.
Solution:	For the 4-port model only, press FUNC to adjust the optimal video signal strength according to the length or quality of the DVI cable. See Section 4.5.
Problem:	When users plug and unplug the DVI connector or switch from port to port, there is no video signal.
Cause:	Some DVI video cards don't respond to the signal switch simulations.
Solution:	Wait a few seconds, then use the Function button to adjust the video signal strength. See Section 4.5.

A.2 Calling 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 at 877-877-2269. 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.3 Shipping and Packaging
If you need to transport or ship your 2- or 4-Port ServSwitch DT Series USB/ 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 Series USB/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.

Great tech support is just 60 seconds away at 877-877-2269 or **blackbox.com**

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Documents / Resources

	BLACK BOX KV9612A ServSwitch DT Series USB or DVI or Audio KVM Switches [pdf] User Manual KV9612A, KV9614A, KV9612A ServSwitch DT Series USB or DVI or Audio KVM Switches, ServSwitch DT Series USB or DVI or Audio KVM Switches

References

- ◈ **[Global IT Products & Network Solutions Provider | Black Box](#)**
- ◈ **[Global IT Products & Network Solutions Provider | Black Box](#)**