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BLACK BOX[®] ServSwitch[™] ServView



KVT109A

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Welcome to the ServSwitch™ Family!

Thank you for purchasing a BLACK BOX® ServSwitch™ Brand product! We appreciate your business, and we think you'll appreciate the many ways that your enhanced keyboard/video/mouse system 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?

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

*

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

KVT109A

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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.

Shielded PC-equipment cables must be used with this equipment to maintain compliance with radio frequency energy emission regulations and ensure a suitably high level of immunity to electromagnetic disturbances.

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

EUROPEAN UNION DECLARATION OF CONFORMITY

This equipment complies with the requirements of the European EMC Directive 89/336/EEC with respect to the EN 55022 (Class A) and EN 55024 standards, as well as the Low Voltage Directive 73/23/EEC with respect to the EN 60950 standard.



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.

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1. Specifications

Compliance:	CE (EN 55022 Class A, EN 55024, EN 60950); CISPR 22 Class A, CISPR 24, IEC 950; FCC Part 15 Subpart J Class A, IC Class/classe A
Interface:	Proprietary composite of VGA compatible video and IBM PS/2 compatible keyboard and two-button mouse
Resolution:	Up to 1024 x 768 noninterlaced
Refresh Rate:	Up to 75 Hz
Maximum Distance:	Up to 25 ft. (7.6 m) to the attached CPU or KVM switch depending on cable quality
Connectors:	Both rear-mounted; (1) HD15 female for composite I/O; (1) IEC 320 male power inlet
Maximum Altitude:	Operating: 10,000 ft. (3048 m); Storage: 30,000 ft. (9144 m)
Temperature Tolerance:	Operating: 32 to 104°F (0 to 40°C); Storage: -4 to +140°F (-20 to +60°C)
Humidity Tolerance:	Operating: 10 to 90% noncondensing; Storage: 5 to 95% noncondensing
Audible Noise:	Less than 60 dBA
Thermal Dissipation:	Up to 25,000 BTU/hr. maximum
Enclosure:	Steel and high-impact plastic (rackmount rails are steel)
Grounding:	Chassis-grounded
Fuse:	250 V, 2.0 A maximum

- Power:** From utility-power (mains) outlet, through detachable power cord and IEC 320 male inlet, to internal transformer:
Input voltage: 100 to 250 VAC;
Input frequency: 50 to 60 Hz, single-phase;
Input current: From 0.5 amps at 250 VAC to 0.7 amps at 100 VAC;
Consumption: 24 watts maximum
- Size:** Chassis only:
1.65"H x 16.5"W x 17.5"D (4.2 x 41.9 x 44.5 cm);
Chassis with mounting-rail assembly attached:
1.65"H x 17.5"W x 24"D (4.2 x 44.5 x 61 cm)
- Weight:** 12.5 lb. (5.7 kg)

2. Introduction

The ServSwitch™ ServView is a rackmounted monitor/keyboard/mouse drawer for managing one or more rackmounted servers that occupies only 1U (1.75", 4.4 cm) of vertical rack space instead of the 10U (17.5", 44.5 cm) or more that can be necessary to house a CRT. Here are some of the other key features of the ServView:

- Integrated 14.1" (35.8 cm) flat-panel display that supports up to 1024 x 768 resolution at refresh rates up to 75 Hz.
- Full 83-key low-profile notebook keyboard.
- Glidepoint touchpad.
- High-density connection to a CPU or KVM switch using a single composite cable.
- Compatible with all standard IBM® PC operating systems.
- All rackmount hardware included.
- External cable-carrying arm for reducing cable clutter.
- Autosensing 115/220-VAC power supply.

3. Safety Considerations

Here are some things you'll need to be very careful about when you install or use the ServView:

- Do not open or disassemble the ServView. It contains no user-serviceable parts, and opening it might expose you to dangerous shock hazards and other risks, even if it's turned off and/or unplugged. If the ServView needs to be serviced, please call Black Box Technical Support.
- When you mount the ServView, make sure to maintain the integrity of the rack—that is, don't loosen or alter its structural members in order to accommodate the ServView. Leave adequate space for ventilation, and don't install so much (or such hot) equipment in your rack that heat impairs or damages your devices.
- Be careful not to spill any liquid on the ServView, and don't use the ServView near water.
- Do not insert foreign objects into any openings in the ServView's housing. You could damage the ServView and/or give yourself a dangerous electric shock.
- Do not place heavy objects on the ServView's power cord or place it where it will be walked on. Damage to the cord might cause shock or fire.
- Use a power cord that's (a) rated for the voltage of your outlets, (b) compliant with your country's electrical-safety standards, and (c) approved by your country's regulatory agencies. If you need a power cord other than the one supplied with the ServView, please call Black Box Technical Support.
- Don't place a freestanding ServView on a sloping or unstable table, stand, cart, etc. It could fall and be seriously damaged.
- Use caution when you close the ServView (lower its monitor screen) so that you don't pinch your fingers.
- Do not lean on the ServView's drawer when it's pulled out. You could break it.
- The fluorescent tubes inside the ServView's LCD monitor contain mercury. Please follow the laws and regulations of your area for properly disposing of the tubes if that becomes necessary.

4. Installation

4.1 The Complete Package

Along with the ServView, you should have received:

- A telescoping rackmount-rail assembly;
- A cable-carrier arm;
- (6) 8-32 x 1/2" screws;
- (2) 8-32 x 1/4" screws;
- (12) 10-32 x 3/4" screws;
- A power cord;
- A three-to-one ServView cable; and
- This manual.

4.2 Assembling and Installing the ServView

To install your ServView, take these steps:

CAUTION!

To reduce the risk of personal injury or damage to equipment, make sure that the rack is ready to receive the ServView before you install it:

- The leveling jacks must be extended to the floor.
- The full weight of the rack must rest on the leveling jacks.
- If you're mounting the ServView in a single rack, the stabilizing feet must be attached to the rack.
- If you're mounting the ServView in a multiple-rack system, the racks must be coupled.

Also keep in mind that only one extendable component at a time should ever be extended from the front of the rack.

1. Separate the inside rails from the rest of the rackmount-rail assembly by extending the rails to their full length, holding down the quick-release latches, and pulling the inside rails away from the assembly.
2. Attach the two inside rails to the three posts on the right and left sides of the ServView—one rail to each side. Attach each rail to the posts using the included 8-32 x 1/2" screws, as shown in Figure 4-1.

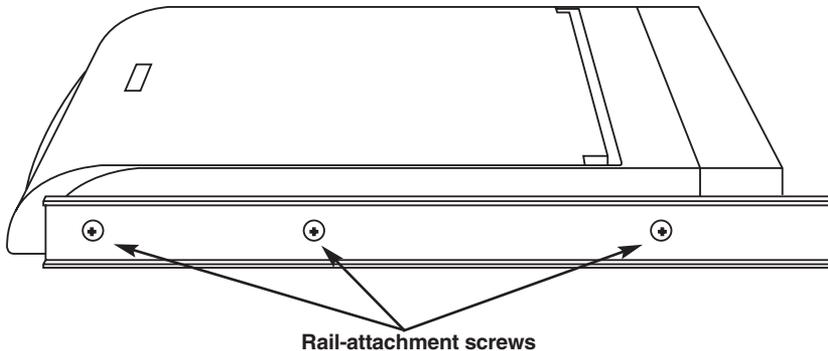


Figure 4-1. Attaching the inside rails to the ServView.

3. Attach one end of the cable-carrier arm to the back of the ServView with the included 8-32 x 1/4" screws, as shown in Figure 4-2. Be careful not to attach this upside down: Make sure that the small "tab" section with the screwholes is oriented toward the inside of the rack, not toward the outside.

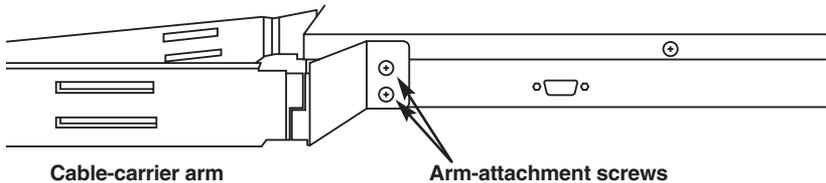


Figure 4-2. Attaching the cable carrier to the ServView.

4. You can adjust the length of the rear outside rails of the rail assembly. Stretch or compress them as necessary to match the depth of the rack cabinet the ServView will be mounted in.
5. Attach the outside rails of the rackmount-rail assembly to the rack using the included 10-32 x 3/4" screws: one in each of the three holes at each end of each rail.
6. With the outside rails mounted in the cabinet at the desired height, carefully lift the ServView and align the inner part of the slide mechanism (on the inside rails attached to the ServView) with the outer part of the slide (on the outside rails). Gently slide the ServView in until the quick-release latches catch. Press both sides of the latches to allow the ServView to retract fully within the cabinet. Slide the ball-bearing rack in the slide mechanism as far forward as possible and make sure that the slides engage the ball bearings.

- After you've successfully mounted the ServView, attach the free end of the cable-carrier arm to the back end of one of the outside rails you installed in step 5. While holding the rail in place, back out the top and bottom screws (but not the middle screw) that you used to mount that end of the rail in step 5. Then place the end of the arm so that the two holes in its tab line up with the empty screwholes in the rail. Screw the two screws back in, securing both the arm and the rail to the rack cabinet.

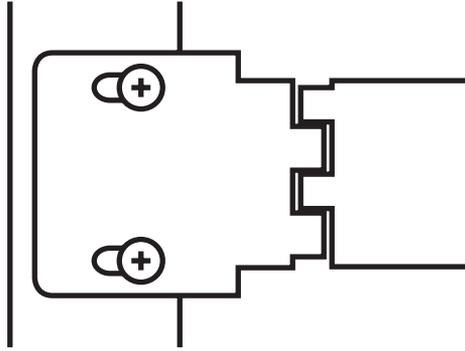


Figure 4-3. Attaching the cable carrier to the rail.

4.3 Connecting the Cables

First, making sure that the power switch on the back of the ServView is in the OFF position (“O”), connect the included power cord to the IEC 320 power inlet just below the switch.

If possible, power down the computer or KVM switch that you want to connect to the ServView. Then run the included proprietary three-to-one cable from the ServView’s HD15 female connector to the HD15 female video connector and 6-pin mini-DIN keyboard and mouse connectors on your CPU or switch. Refer to Figure 4-4 below and Figure 4-5 on the next page.

CAUTION!

Do not plug a monitor into the ServView’s HD15 connector. Doing so could damage both the monitor and the ServView.

Although we don’t recommend doing so, you can attach a bonded three-to-three VGA and PS/2® extension cable such as product code EHN408 to the connectors at the CPU/switch end of the ServView cable in order to connect a CPU or switch that’s farther away than the ServView cable will reach. You could also use standard, separate VGA and PS/2 extension cables such as EVNPS05 and EVNPS03 to do this. But you mustn’t run more than 25 ft. (7.6 m) of total cabling from the CPU or switch to the ServView—even with very high-quality cables, video will begin to degrade rapidly at distances greater than that. Also, do *not* use a VGA extension cable to extend distance from the ServView to the composite HD15 end of the ServView cable. There are signals expressed on all fifteen pins of the ServView cable’s HD15 connector, but most VGA extension cables don’t pass through all fifteen pins.

Once you’ve made this connection, move the ServView’s power switch to the ON position (“I”) to power up the ServView, then power up the CPU or switch.

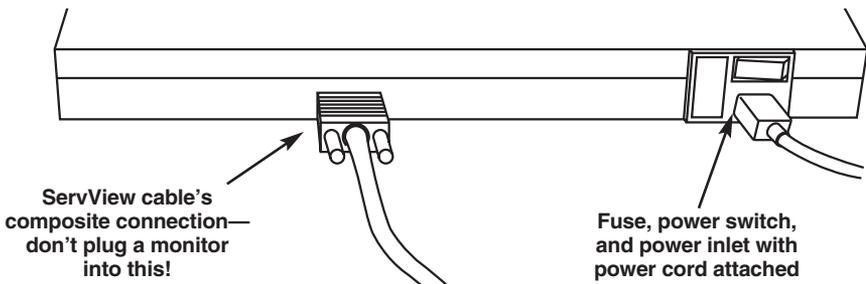


Figure 4-4. Attaching the 3-in-1 cable to the ServView.

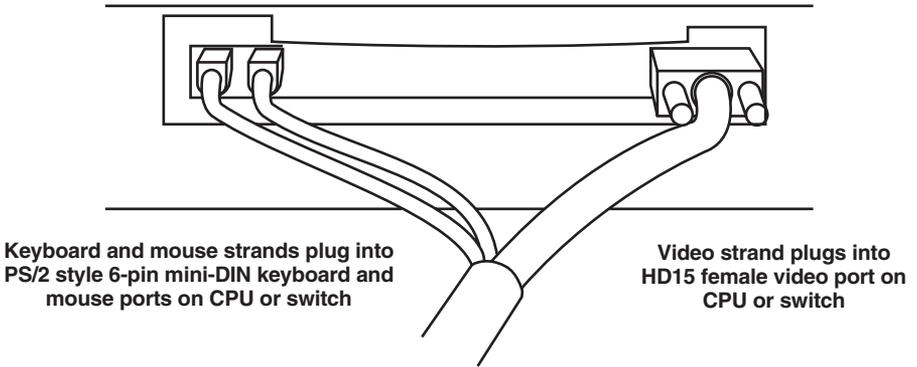


Figure 4-5. Attaching the 3-in-1 cable to a CPU or to a KVM switch with separate user-port connectors.

5. Operation

5.1 Getting Started

To use the ServView, slide its drawer out of the rack cabinet until the retention clips of the ball-bearing slides catch. Open its TFT screen to a comfortable viewing angle. We suggest that, if possible, you set all your servers to 1024 x 768 resolution. (This is the TFT's native resolution, and graphics sent to the ServView at that resolution will look the best.) We also suggest that the frequency (refresh rate) be set to a level that creates a crisp video signal—never lower than 60 Hz or higher than 75 Hz.

Here's how the ServView's other components work:

- **Keyboard**

The ServView keyboard is a standard 83-key US/UK English laptop keyboard. When you turn on Num Lock (the Num Lock LED will light), the right-hand end of the keyboard becomes a keypad for number entry.

- **Touchpad**

You can simulate mouse clicks with the ServView's touchpad in either of two ways: You can press the standard buttons directly below the pad to send a right or left mouse click, or you can tap the dark gray part of the pad to send a left mouse click or the light gray corner of the pad to send a right mouse click. The ServView can't emulate the center or "wheel" button of three-button mouse.

- **LEDs**

There are four LEDs on the ServView: Caps Lock, Scroll Lock, Num Lock, and the TFT indicator. When the keyboard functions are enabled, the TFT LED beside the monitor screen will light green. When the TFT is powered but not receiving a signal, the TFT LED will light red. (This occurs when the TFT goes into "sleep mode." When a signal is detected, the LED will turn from red to green.)

- **TFT Buttons**

The four buttons to the right of the TFT control the TFT's on-screen display as described in the next section.

5.2 The TFT's On-Screen Display

The ServView's TFT-screen settings (including position, contrast, and brightness) can be controlled with an on-screen display (OSD). The OSD in turn is controlled with the four buttons on the TFT's right-hand side, shown in Figure 5-1.

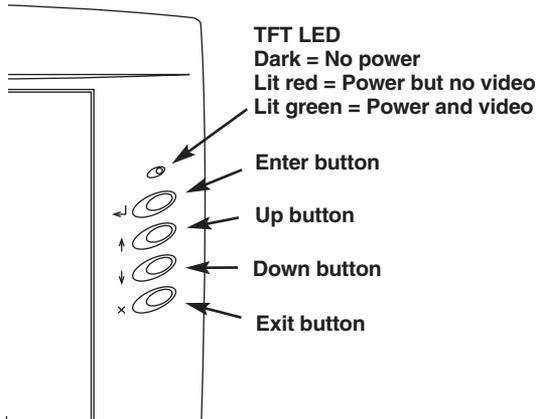


Figure 5-1. The ServView's TFT-control buttons.

To activate the ServView's on-screen display, press the Enter key beside of the TFT screen. This will cause the main menu to appear, shown in Figure 5-2.

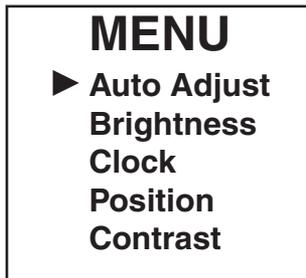


Figure 5-2. The main menu.

The first selection in the menu is “Auto Adjust.” Selecting this option brings up the Auto Adjust window shown in Figure 5-3. Select between “No” and “Yes” using the TFT’s Up and Down buttons. If you select “Yes,” the TFT will try to automatically detect the characteristics of the video output of the attached CPU or KVM switch and reset itself accordingly.



Figure 5-3. The Auto Adjust window.

To manually adjust any of the other selections in the main menu (Brightness, Clock, Position, or Contrast), simply select it and follow the on-screen directions, using the corresponding TFT buttons when the directions refer to Enter, Up, Down, and Exit.

Some of these settings raise ergonomic issues. To make it as easy as possible to see the video on the ServView’s TFT screen, we recommend that you:

- Adjust the TFT’s Brightness and Contrast to enhance readability as necessary. In particular, adjust the Brightness until the background raster disappears. However, don’t set Contrast to maximum.
- Use the factory-default Size and Position settings with standard video signals.
- Use the factory-default Color setting.

Also, the video signals from the attached computer or KVM switch should be noninterlaced, with a refresh rate between 60 and 75 Hz. And to prevent eyestrain, avoid extensively viewing primary blue detail against dark background; such color schemes don’t provide enough contrast.

When you’ve finished viewing and/or changing the OSD settings, deactivate the OSD by pressing the TFT’s Exit button; the OSD menu will disappear from the screen.

6. Maintenance and Troubleshooting

6.1 Maintenance

Clean the surface of the ServView's LCD monitor with a lint-free non-abrasive cloth. Avoid using cleaning solution or glass cleaner!

Do not display fixed patterns on the monitor for long periods of time to prevent image persistence (afterimage effects, "burn-in"). Use a screen saver if the attached CPU or KVM switch supports this.

The ServView has a fuse installed next to its ON/OFF switch. If this fuse ever blows, replace it only with another fuse with the same specifications (250V, 2.0 A maximum). Using a different type of fuse might prevent the ServView from operating properly, and might also pose a risk of shock or fire.

6.2 Calling Black Box

If you determine that your ServView is malfunctioning, *do not attempt to alter or repair it*. It contains no user-serviceable parts. Contact Black Box Technical Support 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 type of computer or KVM switch you've attached to the ServView;
- the type and make of rack that the ServView is installed in;
- any particular application that, when used, appears to create the problem or make it worse; and
- the results of any testing you've already done.

6.3 Shipping and Packaging

If you need to transport or ship your ServView:

- Package it carefully. We recommend that you use the original container.
- If you are shipping the unit for repair, please include its power cord and CPU/switch cable. If you are returning the unit, please include everything you received with it. Before you ship it back to Black Box for repair or return, contact us to get a Return Authorization (RA) number.

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