

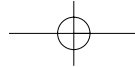


# OmniView™

8-Port KVM Switch  
with Quad-Bus Video Technology

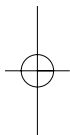
F1DE108B

**ENTERPRISE Series**



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## INTRODUCTION

Congratulations on your purchase of this Belkin OmniView ENTERPRISE Series 8-Port KVM Switch with Quad-Bus Video Technology (the KVM Switch). Our diverse line of KVM solutions exemplifies the Belkin commitment to delivering high-quality, durable products at a competitive price. Designed to give you control over multiple computers and servers from one console, Belkin offers an ENTERPRISE Series OmniView KVM solution suitable for all enterprise configurations.

Belkin has designed and developed this KVM Switch with the server administrator in mind. The result is the OmniView ENTERPRISE Series KVM Switch, designed to outperform any other switch on the market. The KVM Switch is engineered to work with the most advanced server room and laboratory environments, offering:

- PS/2 and USB mix-and-match support for input and output devices
- High video-resolution support (400MHz: up to 2048x1536@85Hz)
- Multi-console support
- IntelliView graphical On-Screen-Display (OSD)
- Computer and group naming
- Multilevel security
- Computer connection status and diagnosis
- Intuitive active-port indicators
- Direct-access port selectors
- Flash-upgradeable firmware
- Dual-port connectors (cables sold separately)
- Belkin Five-Year Warranty
- Free technical support

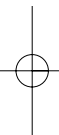
This manual will provide details about your new ENTERPRISE Series Switch, from installation and operation to troubleshooting in the unlikely event of a problem.

For quick and easy installation, please refer to the Quick Installation Guide included in your KVM Switch packaging.

Thank you for purchasing the Belkin Enterprise Series KVM Switch. We appreciate your business and have confidence that you will soon see for yourself why over 1 million Belkin OmniView products are being used worldwide.

### Package Contents:

- OmniView ENTERPRISE Series 8-Port KVM Switch with Quad-Bus Video Technology
- Rack-Mount Brackets with Screws
- User Manual
- Quick Installation Guide
- IEC Power Supply Cord
- Registration Card



## OVERVIEW

### GLOSSARY OF TERMS

The following definitions are used throughout the manual:

<b>KVM or KVM Switch</b>	A keyboard, video, and mouse switch.
<b>Port</b>	Receptacle in the KVM Switch for plugging in a computer or input device.
<b>BANK</b>	The address of a KVM when used in a daisy-chain configuration (BANK numbers range from 0 to 15); typically set by adjusting the DIP Switch to the appropriate setting.
<b>Console</b>	The keyboard, video monitor, and mouse.
<b>Console Ports</b>	The connectors on the back of the KVM Switch for connection of the Console.
<b>Daisy-Chaining</b>	The process of connecting multiple KVM Switches together in a sequence with cables. Daisy-chaining allows the KVM Switches to interact with each other to expand control over servers.
<b>Primary Switch</b>	A KVM Switch with a Console attached to it and set to BANK address 0–3.
<b>Secondary Switch</b>	Switches not assigned as “Primary Switch” that are connected in a daisy-chained KVM configuration. These are set to BANK addresses 4–15 and do not have a Console connected directly to them.
<b>Standalone</b>	A single KVM Switch configured to function independently of other KVMs.
<b>AutoScan</b>	A mode of operation where the KVM Switch sequentially monitors all attached servers.
<b>Static Mode</b>	The KVM Switch’s predominant mode of operation, into which the KVM enters whenever it has not received a button press for at least five seconds.

## OVERVIEW

<b>Select Mode</b>	The mode of operation a daisy-chained KVM Switch enters when it receives the first button press from the front panel, in Static mode. Select mode allows the user to select BANKs, hosts, etc. with the next button press.
<b>On-Screen Display (OSD)</b>	A graphical user interface that can be used to control and configure the KVM Switch.
<b>Human Interface Device (HID)</b>	A USB device class that includes keyboards and mice.
<b>Control</b>	In terms of switching between ports, control means that the Console is capable of sending input to the computer; requires that the Console also has “focus” on the port, and is “viewing” it.
<b>View</b>	In terms of switching between ports, “viewing” means that the Console is receiving video from the computer. Viewing requires that the Console also has “focus” on the port.

## OVERVIEW

### FEATURE OVERVIEW

#### PS/2 and USB Mix-and-Match Keyboard

The KVM Switch enables you to use either USB or PS/2-type keyboard and mouse to control computers via either their USB or PS/2 interfaces.

#### Video Resolution

The KVM Switch offers support for video resolutions up to 2048x1536@85Hz through a 400MHz video bandwidth.

#### Multi-Console Support

By daisy-chaining additional KVM Switches to the Primary Console, the number of users can expand up to as many as four consoles. All four users can simultaneously control up to 128 computers when used with the 8-Port KVM Switch, or as many as 256 when using the 16-Port KVM Switch.

#### IntelliView Graphical On-Screen Display (OSD) with Mouse Support

IntelliView simplifies server management by allowing you to assign individual names to each connected server throughout the system. Groups of computers can also be created, allowing you to efficiently organize your enterprise. IntelliView also provides a visual means of switching between computers, enables the user to check computer connection status, offers multilevel security, and enables the time interval to be adjusted for the AutoScan function.

#### Hot Keys

Hot key functionality allows you to select a desired port using designated key commands. By using a simple hot key sequence on your keyboard, selecting one computer from as many as 128 computers is instantaneous.

#### AutoScan

The AutoScan feature allows you to set your KVM Switch to scan and monitor the activities of all computers connected to the KVM—one by one. The time interval allotted for each computer can be defined or adjusted through the On-Screen Display (OSD) menu.

## OVERVIEW

### AutoUpdate™

Our exclusive AutoUpdate system and flash-upgradeable firmware allow you to obtain the latest firmware upgrades for your KVM Switch, when necessary. This enables your KVM Switch to maintain consistent compatibility with the latest devices and computers. Firmware updates are free for the life of your KVM Switch. Refer to the enclosed AutoUpdate instruction document, or visit us at [belkin.com](http://belkin.com) for complete update information and support.

### Direct-Access Port Selectors

Located conveniently on the front panel of the KVM Switch, direct-access port selectors allow for simple, manual port selection. Each button controls a port.

### Light Emitting Diode (LED) Display

The LED display on the front panel of the KVM Switch functions as a status monitor. An LED above each direct-access port selector lights to indicate that the Console currently controls the corresponding server.

### 7-Segment LED Display

In standalone mode, the 7-segment LED display indicates the port that has been selected. When daisy-chaining multiple KVM Switches together, the 7-segment LED displays the BANK address number. During the computer-selection process, the 7-segment LED will briefly indicate the BANK that is being selected; this allows the user to select any computer directly from the front panel.

## OVERVIEW

### EQUIPMENT REQUIREMENTS

#### Cables

To connect to the KVM Switch, each server requires a specialized Belkin ENTERPRISE Series Dual-Port KVM Cable. One Dual-Port KVM Cable connects two servers per KVM port.

OmniView ENTERPRISE Series Dual-Port KVM Cables

F1D9400-XX PS/2 style; 6, 10, 15, and 25 ft.

F1D9401-XX USB style; 6 and 12 ft.

F1D9402-XX Daisy-Chain Cable  
(-XX denotes length in feet)

#### Operating Systems

OmniView ENTERPRISE Series KVM Switches are for use with computers running:

#### Platforms

- Windows® 95/98/2000/Me/NT®/XP
- Red Hat® Linux® 7.0, 7.1, 7.2 and other Linux distributions
- Novell® NetWare® 5.x, 6.x
- Apple® Macintosh® products (requires USB support or the OmniView Mac Adapter™ F1D080)

#### Keyboards

- Supports most PS/2 keyboards, and USB keyboards (up to 104 keys)

#### Mice

- Supports most PS/2 and USB mice, including Microsoft® IntelliMouse®

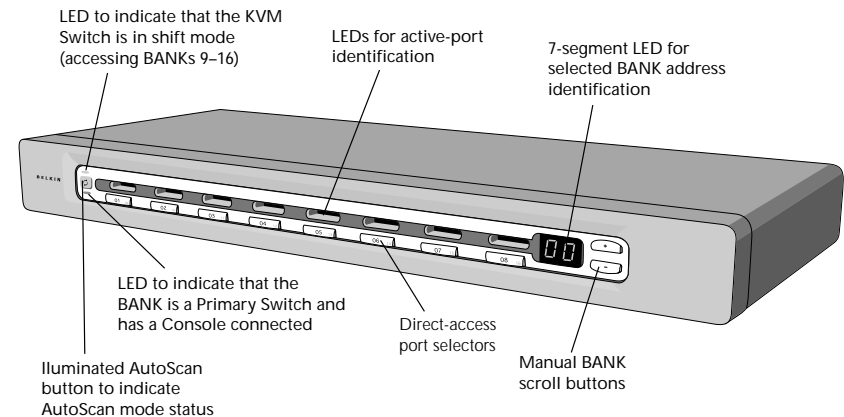
#### Monitor

- VGA
- SVGA
- MultiSync®

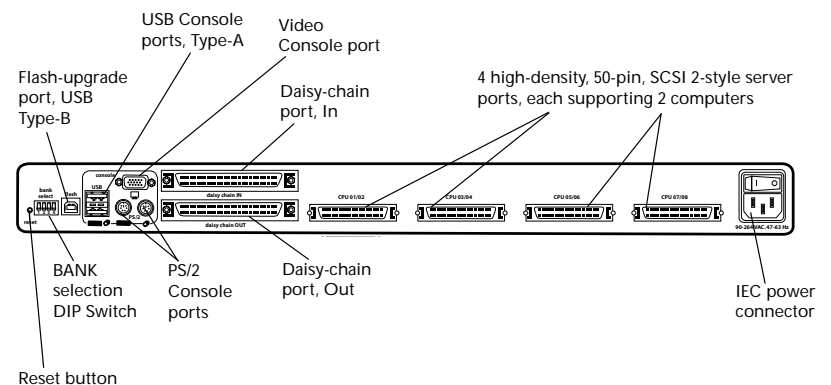
## OVERVIEW

### UNIT DISPLAY DIAGRAMS

#### Front View of the KVM Switch



#### Back View of the KVM Switch



## INSTALLATION

### PRE-CONFIGURATION

The enclosure of the KVM Switch is designed for standalone or rack-mount configuration. The 8-Port KVM Switches are natively rack-mountable in standard 19-inch server racks. Rack-mount hardware is included with these Switches for a sturdy rack installation.

Consider the following when deciding where to place the KVM Switch:

- Whether or not you intend to use the direct-access port selectors;
- The lengths of the cables attached to your keyboard, monitor, and mouse;
- The location of your computers in relation to your console; and
- The lengths of the cables you use to connect your computers to the KVM Switch.

### Cable Distance Recommendations

#### *For PS/2 computers*

We recommend that PS/2 cable length be limited to 25 feet for best video performance. Beyond that length, the probability of video degradation increases.

#### *For USB computers*

We recommend that USB cable length be limited to 12 feet for best performance. Beyond 12 feet, the probability of signal failure is likely, and this may cause the device to fail.

### Installing the KVM Switch into a Server Rack

OmniView ENTERPRISE Series 8-Port KVM Switches include adjustable mounting brackets ideal for installation in 19-inch racks. The mounting brackets feature three adjustable positions that allow the front panel to mount flush to your rack-mounted servers and rack rails, or extended past the front of the rails.

1. Remove the adjustable brackets from the box.
2. Determine how far you would like the KVM Switch to protrude from the rack and select a bracket-hole scheme.

## INSTALLATION

3. Attach the bracket to the side of your KVM Switch with the Phillips screws provided. (See Fig. 1)
4. Mount the KVM Switch to the rack rail assembly.

**Note:** *If this KVM Switch will be daisy-chained to another Switch, set the BANK address prior to installing on a rack. Refer to the section in this User Manual labeled "Multiple KVM Switch—Installation (Daisy-Chaining)".*

### \*\*\* Cautions and Warnings \*\*\*

*Before attempting to connect anything to the KVM Switch or your server(s), please ensure that all KVM Switches and servers are powered off. Belkin Components is not responsible for damage caused by these actions.*

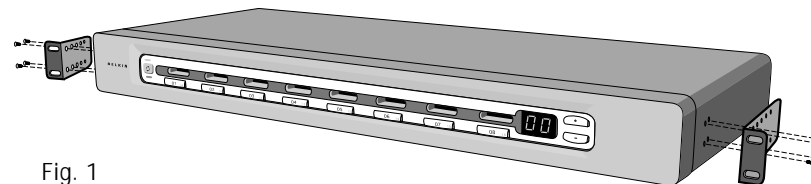


Fig. 1

## INSTALLATION

### SPECIFICATIONS

Part No.:	F1DE108B
Power:	100-240VAC @ 47–63Hz, single phase
Daisy-Chain:	Maximum of 16 BANKS
Max Number of PCs:	8 per BANK (F1DE108B), 128 total
Keyboard Emulation:	PS/2 & USB
Mouse Emulation:	PS/2 & USB
Monitors Supported:	VGA, SVGA, MultiSync, LCD monitors that accept analog input
Max Resolution:	2048x1536@85Hz
Bandwidth:	400MHz
Keyboard Input:	6-pin miniDIN (PS/2), USB Type-A
Mouse Input:	6-pin miniDIN (PS/2), USB Type-A
Computer Ports:	High-density, 50-pin, SCSI 2-style connector (requires Belkin ENTERPRISE Series Dual-Port KVM Cable F1D9400-X or F1D9401-XX)
VGA Port:	15-pin HDBB type
Port LED Indicators:	8
Enclosure:	Metal enclosure with high-impact plastic faceplate
Dimensions:	17 (width) x 1.75 (height) x 7.5 (length) inches (431.8 x 44.5 x 190.5mm)
Weight:	9.2 lbs. (4173g)
Operating Temp.:	32° to 104° F (0~40° C)
Storage Temp.:	-4° to 140° F (-20~60° C)
Humidity:	0-80% RH, non-condensing
Maximum Altitude:	10,000 feet
Warranty:	5-Year Limited Warranty

**Note:** Specifications are subject to change without notice.

## INSTALLATION

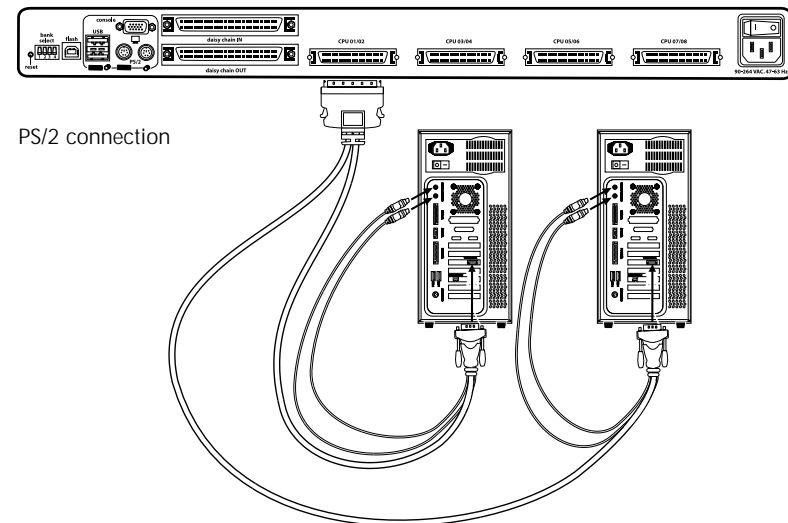
### STANDALONE KVM SWITCH—INSTALLATION

This section provides complete instructions for the hardware setup of a single KVM Switch (F1DE108B).

Before you begin, determine the type of connection that will be used to connect the computer to the KVM Switch on each port and select the appropriate KVM cable.

#### Connecting Computers to the Switch (PS/2 Connection)

1. Using the OmniView ENTERPRISE Series Dual-Port PS/2 Style KVM Cable (F1D9400-XX), connect the high-density, 50-pin, SCSI 2-style connector to the next free KVM port, starting with the port for the first two computers (for best results, screw the connectors into the KVM Switch and the server, when possible).
2. Connect the VGA and PS/2 connectors of your KVM cable to the server (make sure that you connect the keyboard and mouse cables to the correct ports on your server).
3. Repeat steps 1 through 2 for each additional server you wish to connect.



## INSTALLATION

### Connecting Computers to the KVM Switch (USB Connection)

**Note:** Early versions of Windows operating system do not automatically install HID devices. Manual installation of the HID driver may be required.

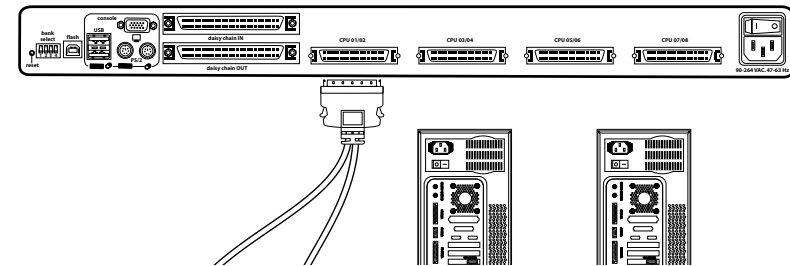
1. Using the OmniView ENTERPRISE Series Dual-Port USB Style KVM cable (F1D9401-XX), connect the high-density, 50-pin, SCSI 2-style connector to the next free KVM port, starting with the port for the first two computers (for best results screw the connectors into the KVM Switch and the computer, when possible).
2. Connect the USB connector of your KVM cable to the computer. If your computer is running Windows Me or later, skip to step 6. Otherwise, continue with step 3.
3. Boot up the computer you wish to connect via USB, as you would normally, with the keyboard, mouse, and monitor connected directly to the computer.
4. Take the USB cable attached to the KVM Switch and connect it to an available USB port on your computer.
5. Your computer should detect and identify the KVM Switch as a generic mouse and keyboard. Manually install the HID device driver by selecting "Next" through the Windows Hardware Wizard until the HID devices are completely installed (the KVM Switch will install four devices if not previously installed on your system: a HID keyboard, a HID mouse, a generic keyboard, and a generic mouse). The driver installation only needs to be done once for each computer; the KVM Switch will be enumerated automatically in the future. When driver installation is complete, power down the computer and disconnect the keyboard, mouse, and monitor.
6. Connect the male VGA HDDB15 connector located on one end of the KVM cable to the VGA port on the computer.
7. Repeat steps 1 through 6 for each additional computer you wish to connect to the KVM Switch via USB.

**Note: For USB Installation**

We recommend you attach the KVM cable directly to a free USB port on your computer, not through a USB hub.

## INSTALLATION

USB connection

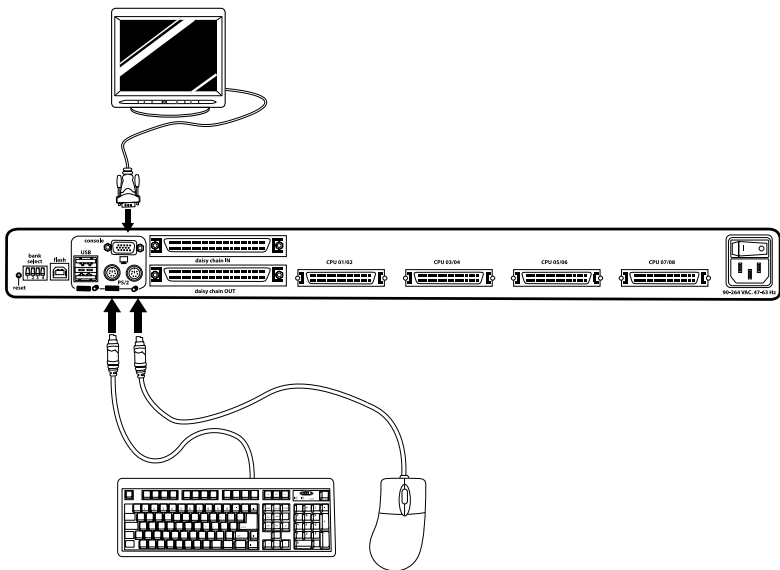




## INSTALLATION

### Connect the Console

1. Set BANK address to zero. (The BANK address is preset to zero at the factory.)
2. Connect the monitor to the KVM Switch. Attach your monitor cable to the HDB15 female port on the back of the KVM Switch labeled "Console".
3. Connect the PS/2 or USB keyboard to the appropriate port on the back of the KVM Switch in the "Console" section.
4. Connect the PS/2 or USB mouse to the appropriate port on the back of the KVM Switch in the "Console" section.
5. Attach the IEC power cable to the power connector located on the rear of the KVM Switch. Power on the KVM Switch.
6. Boot up all of your host servers.



Console connection

## INSTALLATION

### MULTIPLE KVM SWITCHES—INSTALLATION (DAISY-CHAINING)

You can daisy-chain up to 16 OmniView KVM Switches together, giving a server administrator control over a maximum of 128 servers. In addition, when multiple units are daisy-chained together, three additional Consoles can be added, creating a maximum configuration of up to four consoles. When daisy-chained together, each unit is referred to as a "BANK" and is assigned an address. The KVM Switch that the Console (keyboard, mouse, and monitor) is connected to is referred to as a "Primary" Switch. BANKS 00 through 03 can be configured as Primary Switches, allowing up to four consoles. BANKs 04 through 15 can only be configured as Secondary Switches (without Console support). If BANKs 00 through 03 do not have a Console attached, they function as the Secondary. However, the connections are hot swappable, so if a Console is added to one of the first four BANKs, it will immediately become a Primary Switch.

**Note:** An ENTERPRISE Series Daisy-Chain Cable (F1D9402-XX) is required to daisy-chain each KVM Switch and is available through your Belkin reseller or online at [www.belkin.com](http://www.belkin.com).

All ENTERPRISE Series KVM Switches feature a "BANK DIP" Switch. The BANK DIP Switch is used for proper identification of the KVM Switch, either in a standalone or multiunit configuration.

- For a single-unit configuration, set the BANK DIP Switch on the KVM Switch to the "Standalone" (BANK address 00) setting. This is the factory default setting.
- For multiunit configuration, the BANK DIP Switch on the Primary Switches must be set to BANK address 00 to 03. Secondary Switches must be set to a unique BANK address (from 00 through 15). Refer to the chart on the next page for DIP Switch settings.

## INSTALLATION

### DIP SWITCH CONFIGURATION CHART

DIP SWITCH#				BANK ADDRESS
DOWN	DOWN	DOWN	DOWN	BANK 00 PRIMARY / SECONDARY (Default)
UP	DOWN	DOWN	DOWN	BANK 01 PRIMARY / SECONDARY
DOWN	UP	DOWN	DOWN	BANK 02 PRIMARY / SECONDARY
UP	UP	DOWN	DOWN	BANK 03 PRIMARY / SECONDARY
DOWN	DOWN	UP	DOWN	BANK 04 SECONDARY
UP	DOWN	UP	DOWN	BANK 05 SECONDARY
DOWN	UP	UP	DOWN	BANK 06 SECONDARY
UP	UP	UP	DOWN	BANK 07 SECONDARY
DOWN	DOWN	DOWN	UP	BANK 08 SECONDARY
UP	DOWN	DOWN	UP	BANK 09 SECONDARY
DOWN	UP	DOWN	UP	BANK 10 SECONDARY
UP	UP	DOWN	UP	BANK 11 SECONDARY
DOWN	DOWN	UP	UP	BANK 12 SECONDARY
UP	DOWN	UP	UP	BANK 13 SECONDARY
DOWN	UP	UP	UP	BANK 14 SECONDARY
UP	UP	UP	UP	BANK 15 SECONDARY

**Example:** Four KVM Switches (F1DE108B) are daisy-chained together to control 32 computers. The DIP Switch on the Primary Switch is set to "BANK address 00" and the Secondary Switches are each set to a unique BANK (between 01 and 15).

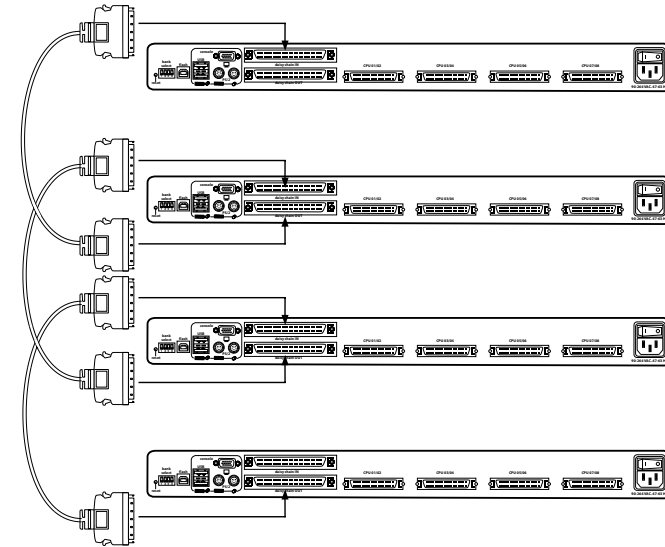
#### Installation

Before you begin:

1. Make sure that all computers and KVM Switches are powered off and that each KVM Switch has been assigned a unique BANK address.
2. Place all Primary and Secondary Switches in the desired location.
3. Connect the servers to the KVM Switch as previously described for a standalone configuration.
4. Connect the Console monitor, keyboard, and mouse to the Console ports of the Primary KVM Switch(es), as previously described for standalone configuration, skipping steps 5 and 6.

## INSTALLATION

### Example of Daisy-Chain Configuration:



#### Connecting the Daisy-Chain Cable

5. Using the Daisy-Chain Cable (F1D9402-XX), connect one end to the "Daisy-Chain OUT" port on the first KVM Switch.
6. Connect the other end of the Daisy-Chain Cable to the "Daisy-Chain In" port of the second KVM Switch.

**Note:** It does not matter which unit is the Primary Switch, only that the cables are always connected "OUT to IN" or "IN to OUT".

#### Adding Additional Units

7. Continuing in the same manner, using the Daisy-Chain Cable (F1D9402-XX), connect "Daisy-Chain IN" to "Daisy-Chain OUT" on all subsequent units.

#### \*\*\* Cautions and Warnings \*\*\*

*Never connect "Daisy-Chain IN" to "Daisy-Chain IN" or "Daisy-Chain OUT" to "Daisy-Chain OUT". This may produce unpredictable results and may cause damage to the KVM Switch.*

## INSTALLATION

### Connecting the Computers

8. Power on the KVM Switches in whatever order is convenient. You should see them light up and display the digits "XX", where XX denotes their respective BANK addresses.

**Note:** If the KVM Switches still do not enumerate correctly, check that all Switches have the correct BANK address assigned to them and that all daisy-chain cables are connected properly.

### Enabling Daisy-Chain Mode on BANK 00

9. Primary BANK 00 must be configured to daisy-chain mode by the administrator. This is only to be set on BANK 00.
  - a. Open IntelliView and enter "Setup". Refer to the section "IntelliView On-Screen Display Menu Control" in this manual for instruction on operating IntelliView.
  - b. Navigate to the "Options" page, and check the "Daisy-chain this KVM" box.
  - c. A dialog box will appear that says "You must power cycle the KVM for this to take effect". Click "OK" to clear the dialog box and power cycle the KVM Switch.

When the KVM Switch reboots, it will interact with the remainder the other daisy-chained KVM Switches as expected. You can verify this by opening IntelliView and scrolling through the list of computers. If any of the other daisy-chained computers appear in BANK 00's list, then it is working properly.

**Note:** If you don't configure BANK 00 for use on the daisy-chain, then it will not be able to interact with any of the other KVM Switches and they will not be able to interact with it. In addition, the unit's front panel will not act the same as the other units' front panels. Finally, there could be some unpredictable interactions caused by connecting an improperly configured BANK 00 to a daisy-chain.

## USING YOUR KVM SWITCH

### POWERING UP THE SYSTEMS

Once all cables have been connected, power up the connected computers. All computers can be powered on simultaneously. The KVM Switch emulates both a mouse and keyboard on each port and allows your computer to boot normally.

The computer connected to port "01" of the Primary Switch will be displayed on the monitor. Check to see that the KVM Switch is working normally by use of mouse, keyboard, hot keys, IntelliView, and/or direct-access port selectors. Proceed to do this with all occupied ports to verify that all computers are connected and responding correctly. If you encounter an error, check your cable connections for that computer and reboot, if necessary.

If the problem persists, call **Belkin Tech Support at 1-800-223-5546 ext. 2263.**

Now that you have connected your Console and computers to your KVM Switch, it is ready for use.

You can select connected computers by the direct-access port selectors, located on the front panel of the KVM Switch, hot key commands, or IntelliView. It takes approximately 1–2 seconds for the video signal to refresh (depending on monitor and graphics card used) after switching computers.

**Note:** For hot keys (e.g. up and down arrows) and AutoScan, the order of progression, when switching from one computer to the next, is dictated by the order of the computers in the list box (on the main page of IntelliView).

### Selecting a Computer Using Direct-Access Port Selectors

#### Standalone Configuration

Note the following:

- The 7-segment LED display will indicate the number of the port in focus
- One port-selection LED display will always be lit, corresponding to the port in focus

## USING YOUR KVM SWITCH

- The shift LED display indicates that ports 9–16 are selected (not applicable to this KVM Switch in standalone mode)
  - The Console LED display will be lit, indicating that this KVM Switch is a Console
  - BANK-selection buttons will have no function because there is only one BANK in this configuration
1. Press the direct-access port selector corresponding to the port that you want. When you release the button, the KVM Switch will beep and switch the focus to the selected port. If you don't have permission to access the selected port, the KVM Switch will beep, switch focus away from the selected port, and the 7-segment LED display will indicate "AF" (Access Failure).
  2. If you press the AutoScan button, the KVM Switch will beep and switch into AutoScan mode.

**Note:** For a standalone KVM Switch to function as described in this section, the BANK address must be set to 00 and the "Daisy-Chain this KVM" box must be cleared. Otherwise, the KVM Switch will function, but it will react like a daisy-chained KVM Switch.

### Daisy-Chain Configuration

- The 7-segment display of a Secondary Switch will always display its BANK ID
- All buttons and LED displays on Secondary Switches will be disabled

### Static Mode (Not in Use)

- The 7-segment LEDs will display the current BANK ID
  - The port and shift LEDs will be off
  - The Console LED will be lit, indicating that this KVM Switch is a Primary Switch (Console attached)
1. To switch out of Static mode, press any button (except AutoScan) on the front panel of the Console. When you release the button, the KVM will switch into Select mode. The KVM Switch will not beep to indicate the transition from Static to Select mode, but the port-selection LEDs and the 7-segment LEDs will change to indicate the transition.

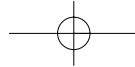
## USING YOUR KVM SWITCH

2. If the AutoScan button is pressed, the KVM Switch will beep and enter AutoScan mode.

### Select Mode: Selecting a Server Using the Direct-Access Port Selectors

Note the following:

- Select mode will revert to Static mode after five seconds of inactivity.
  - The 7-segment LEDs will always display the ID of the BANK in focus.
  - One port LED will be lit, corresponding with the port in focus on the BANK in focus.
  - The shift LED will light up whenever ports 9–16 are selected. To use an 8-Port KVM Switch to select ports 9–16 on a 16-Port KVM Switch, hold down the corresponding button for one second (the shift LED will light), then release it. For example, to select the computer attached to port 9, from Select mode, press the button for port 1, and hold it for one second before releasing it. The KVM Switch will beep and both the port 1 LED and shift LED will light.
  - The Console LED will be lit, indicating that this KVM Switch is a Console.
1. Press the BANK selection buttons to cycle through the available BANKS. The "BANK +" button will take you to the next available BANK, the "BANK –" button will take you to the previous available BANK. For example, when you are at BANK 02 and you want to check a server on BANK 01, pressing the "BANK –" button will take you to BANK 01. The change in BANK is immediately indicated by the 7-segment LEDs.
  2. Press the direct-access port selectors to go to the desired server on BANK 01. When you release the button, the KVM Switch will beep and switch the focus to the selected port. If the user does not have permission to access the selected port, the KVM Switch will beep, switch focus away from the selected port, and the 7-segment LED will indicate "AF" (Access Failure).



## USING YOUR KVM SWITCH

### Selecting a Computer Using Keyboard Hot Key Commands

Command the KVM to switch ports through simple keyboard key sequences. To initiate a keyboard command to the KVM Switch, press the "Scroll Lock" key twice within one second (you will hear a beep), then input the key sequence for the specific command. Below is a list of the different keyboard commands:

**Note:** You will have approximately two seconds after the beep to complete each hot key sequence.

For hot keys (e.g. up and down arrows) and AutoScan, the order of progression from one computer to the next is dictated by the order of the computers in the list box (in the main view of IntelliView).

SL SL	Up Arrow	Switch to PREVIOUS server in the IntelliView's list box
SL SL	Down Arrow	Switch to NEXT server in the IntelliView's list box
SL SL	X Y	Directly switches to PORT Y on BANK X (X=00 to 15) (Y=01 to 08 for F1DE108B)
SL SL	Space bar	Activate IntelliView
SL SL	A	Toggle AutoScan mode On and Off

**Note:** Alternatively, the control keys can be used to enter commands (usage is identical to the Scroll Lock key); this provides compatibility for keyboards that don't have Scroll Lock keys.

### AutoScan Mode

#### Using the AutoScan Function from the Front Panel:

In AutoScan mode, the KVM Switch remains on one port for a configured interval (1–99 seconds) before switching to the next computer. The time interval is configured in IntelliView.

1. To enter AutoScan mode, press the AutoScan button.
2. On a standalone KVM Switch, pressing and releasing any button on the front panel will cause the KVM to beep and exit AutoScan mode. If you pressed a direct-access port selector, the KVM will also switch the focus to the selected port. If you don't have permission to access the selected port, the KVM will beep, switch focus away from the selected port, and

## USING YOUR KVM SWITCH

the 7-segment LED will indicate "AF" (Access Failure). On a daisy-chained KVM Switch, pressing any button on the front panel will exit AutoScan mode and return to Select mode.

- AutoScan mode will continue indefinitely until terminated by pressing any valid hot key sequence, or pressing a button on the front panel.
- When the KVM Switch is in AutoScan mode, it is also in View-Only mode. This means that input from the Console will not be transmitted to the server in focus. Cancel AutoScan to regain control of the computer.
- The AutoScan time varies by computer, and is configured in IntelliView.
- AutoScan will skip any servers that the user does not have permission to view.
- One port LED will be lit, corresponding with the port in focus.
- The Console LED will be lit, indicating that this KVM Switch is a Console.
- On a standalone KVM Switch, the 7-segment LEDs will display the ID of the port in focus, but on a daisy-chained KVM Switch, the 7-segment LEDs will display the ID of the BANK in focus.

### Using the MultiView Feature

This KVM Switch is capable of allowing multiple users to view the same server simultaneously; however, only the first Console to focus on that server will have control (be capable of input). When a second Console focuses on the same server, the View-Only Console's banner will display "View-Only". If the banner is enabled on the viewing Console, then the "View-Only" banner will be displayed as long as that Console is focused on a computer it can't control. If the banner is disabled on the viewing Console, then the "View-Only" banner will be displayed for five seconds. If the controlling Console switches focus to another computer, then control will be granted to another Console.

### IntelliView On-Screen Display Menu Control

The IntelliView graphical On-Screen Display (OSD) is intended to have a look and feel similar to Windows-based systems popular on personal computers. To bring up the IntelliView, press on "Scroll Lock + Scroll Lock + Space Bar".

## USING YOUR KVM SWITCH

### IntelliView OSD Features

The main page is the initial screen that will appear after opening IntelliView. The screen layout is similar to many Windows-based systems that exist. The user will see a window with a title bar containing some controls and a main area where the user accesses the features of the KVM Switch.

The top-right side of the IntelliView title bar identifies the Console that is being used and the user that is currently logged in. Selecting the "?" button will display the help screen. The help screen will show a description of the current page and will describe all available controls.

Selecting the "X" button will close the page the user is viewing. The main page also has an "Exit" button that closes IntelliView. The exit button is the default key, so pressing "Enter" will also exit IntelliView, unless another button has focus.

**Note:** All changes to IntelliView are written and saved to memory as soon as the focus changes; there is no method of canceling or undoing actions once they have been entered. However, in the case of edit boxes (e.g. the "Computer Name" edit box), ESC will exit the control and revert the contents to their original form.

### Input and Navigation Features

- Clicking on the "Group", "Computer Name", or "ID" column headers will sort the list box entries in ascending order, by the column header selected.
- Single-clicking on a computer line will select that computer line.
- Double-clicking on a computer line will select that computer line and switch the Console's focus to the selected port. If the user is restricted from accessing the computer selected, an error message will be displayed. When the error dialog box is cleared, the Console's focus will remain on the previously selected port.
- Pressing the up or down arrow keys, while IntelliView is up, will move the computer cursor (the row highlighted blue) up or down. If the cursor moves outside of the visible area, the list will scroll by one line. The scroll wheel on the mouse can also be used to perform this function.

## USING YOUR KVM SWITCH

- The up/down double arrows, to the right of the computer list, scroll the list up and down one page at a time. The "Page Up" and "Page Down" keys on the keyboard will also perform this function.
- If the main page of IntelliView is in focus, pressing the space bar will give the Console control of the highlighted computer.
- Pressing "Enter" will activate the control in focus, if the control is on a button or inside an edit box. However, if the focus is on another type of control (e.g. the list box), the Enter key will activate the default control ("Close" or "Exit", depending on the current IntelliView screen).
- If the administrator presses "Ctrl+TAB" while viewing one of the setup pages, IntelliView will switch to the next page.
- Accelerator keys that have been enabled will activate their respective controls (i.e. pressing "Alt+{A-Key}", where the A key corresponds with a character that is underlined in a control label).
- When IntelliView is active, keyboard and mouse input is routed to IntelliView; nothing is sent to the computer that the Console controls.
- Selecting the "Close" button (or pressing "Alt+C") on any of the setup pages will return the user to the main page.
- The "Tab" key can be used to cycle through the controls on the current IntelliView page.
- The IntelliView window can be repositioned by clicking on the title bar and dragging the window with the mouse.
- To reposition the banner, press "Ctrl+Alt" while the IntelliView window is up. The cursor will jump from the IntelliView window to the banner; clicking and dragging the mouse will allow the user to reposition the banner.
- The size and position of the IntelliView window and banner vary with the resolution and refresh rate of the video card. To improve the user's ability to position the window where they desire, the KVM Switch preserves the position of the window for several different resolution/refresh rates. This feature will help the user to position the window and the banner where they want them, but the user may have to set the positions of the window and banner windows multiple times

## USING YOUR KVM SWITCH

during KVM setup before they remain in a consistent location.



### The Main Page

#### Group Column

The "Group" column displays the name of the group to which the server has been assigned. The group name is assigned by the KVM Switch's administrator (see the "Administrator Setup Page" section for information on changing the group name). The "Computer Name" list can be sorted on this field by clicking on the column header.

#### Computer Name Column

The "Computer Name" column displays the name of each connected computer/server. The computer name can be set by the KVM Switch's administrator (see the "Server Page" section below for information on changing the computer name). The computer list can be sorted on this field by clicking on the column header.

#### ID Column

The ID column displays the BANK and port number of the KVM Switch where the computer is connected. The computer list can be sorted on this field by clicking on the column header.

#### Keyboard Column

The "Keyboard" column shows the status of the current keyboard connection, and is updated in real time. If the connection to the computer

## USING YOUR KVM SWITCH

is via a PS/2 cable, a small keyboard icon is displayed. If the keyboard connection to the computer is via USB, the USB trident symbol is displayed. If no keyboard is detected, the cell will be empty.

#### Mouse Column

The "Mouse" column shows the status of the current mouse connection, and is updated in real time. If the connection to the computer is via a PS/2 cable, a small mouse icon is displayed. If the mouse connection to the computer is via USB, the USB trident symbol is displayed. If no mouse is detected, the cell will be empty.

#### Security Column

This column displays the security settings for the current user. If this user is blocked from accessing a computer, a closed-padlock symbol is displayed. If the user is allowed to access the computer, the cell is empty.

**Note:** The KVM administrator can prevent computers from appearing in the Main View if the user doesn't have rights to access them. (For additional information, see the "Options Page" section.)

#### Console Column

The Console currently viewing the computer is indicated in this column by its corresponding letter (A-D). If multiple Consoles are focused on the same computer, the letter of one that has control of the computer will appear in the Console cell.

#### Scan Button

Click the "Scan" button or press "Alt+A" on the keyboard to activate the AutoScan feature. This will not close IntelliView.

#### Setup Button

Click the "Setup" button or press "Alt+S" on the keyboard to access IntelliView's setup pages. If the user is not logged in as the administrator, the setup button will not be selectable (will appear gray).

The setup pages are only accessible to one Console at a time. If two administrators attempt to access the setup pages simultaneously, the second administrator will be presented with an error message.

## USING YOUR KVM SWITCH

### Login Button

Click on the "Login" button or press "Alt+L" on the keyboard to display the login dialog box, which lets the user switch to a different "account" (see the "Login Dialog" section).

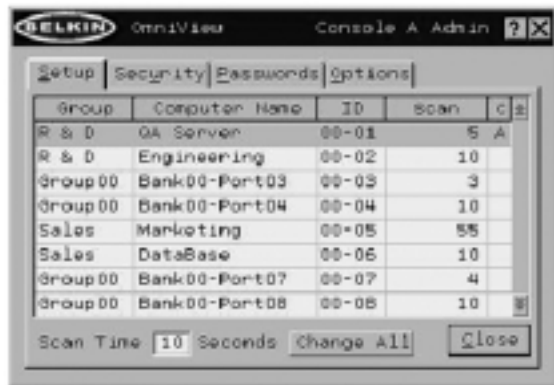
### Logout Button

Click on the "Logout" button or press "Alt+T" on the keyboard to return to "Guest" level access. If the administrator has removed guest access, video will go black when the user logs out of the computer, and that port will lose control of the computer. The hot keys and the front panel are also disabled; the only command sequence the KVM Switch will accept is "SL+SL+Space" (open IntelliView), which will present the user with the login dialog box.

### Exit Button

The "Exit" button (or "Alt+X") closes IntelliView, allowing the user an unrestricted view and control over the computer in focus.

### Administrator Setup Page



The setup page is only available to the admin user and is used to set the group name, computer name, and computer scan times. The scan time is dependent on the port being scanned, and is global (i.e. it's independent of the Console or user). While scan times are independent of the user, AutoScan will skip computers that the user does not have permission to view.

## USING YOUR KVM SWITCH

### Group Column

The "Group" column displays the name of the group to which the computer has been assigned. The group name is arbitrary text, purely for organizational purposes. The group name can be up to eight alphanumeric characters and is assigned by the KVM administrator. The default group name of a computer is "Group X", where X is the BANK number of a KVM as determined by the BANK address DIP Switch. To change the group name, click in the desired cell.

### Computer Name Column

The "Computer Name" column displays the name of each connected computer. The computer name can be up to 15 alphanumeric characters and is assigned by the KVM administrator. The computer list can be sorted on this field by clicking on the column header. By default, all computer names will be named BANK XX-Port YY, where XX is a two-digit BANK address number from 00 to 15 and YY is a two-digit computer number from 01 to 16. To input the computer name, click in the desired cell.

### ID Column

This column displays the BANK and port number of the KVM Switch where the computer is connected. The computer list can be sorted on this field by left-clicking the mouse on the column header.

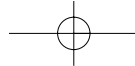
### Scan Column

The "Scan" column displays the current setting for how long the Console views each computer during AutoScan. To change the viewing duration for a computer, click in the desired cell.

### Scan Time and Change All Button

The user can reset the scan time for all computers by entering a value from 1-99 in the edit box and clicking on the "Change All" button. The user will be asked to confirm the action before the new time is applied.





## USING YOUR KVM SWITCH

### Console Column

The Console currently viewing the computer is indicated in this column.

### Security Page

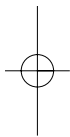


The "Security" page allows the administrator to restrict computer access for the KVM Switch's users. There are three levels of user access to the KVM Switch: Administrator, User, and Guest. The administrator is the only user that can access the setup pages to configure the KVM Switch. The administrator can restrict users and guests from accessing specific computers. All users can switch computers and toggle the AutoScan function in the main page. In addition, the guest is the default user (you never have to login as "Guest"), so all users logoff to "Guest" when the account is enabled.

If the administrator has removed guest access, video will go black when the user logs out the computer, and that port will lose control of the computer. The hot keys and the front panel are also disabled; the only command sequence the KVM Switch will accept is "SL+SL+Space" (open IntelliView), which will present the user with the login dialog box.

The "User" accounts defined in the KVM Switch can be used by individuals or groups of individuals; the names of the users are fixed.

**Note:** When the Guest User is enabled, it defines the minimum privileges that anyone can access. It is possible to restrict User accounts more than the guest account; this is a potential mistake to avoid.



## USING YOUR KVM SWITCH

### Group Column

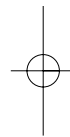
The "Group" column displays the name of the group to which the computer has been assigned. The computer list can be sorted on this field by clicking the mouse on the column header.

### Computer Name Column

The "Computer Name" column displays the name of each connected computer. The computer list can be sorted on this field by clicking on the column header.

### User Columns (1, 2, 3, G)

These columns allow administrators to set the access rights to each computer for each of the "User" groups (1, 2, 3, and Guest). To restrict a user from a particular computer, click in the corresponding cell in the list box. The padlock indicates that the user (column) will be restricted from accessing that computer (row). Empty cells indicate that the user has full access to that computer.

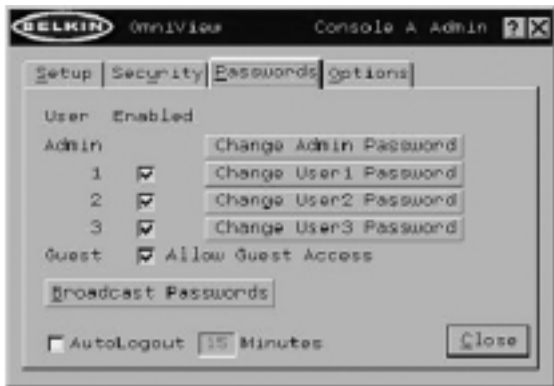


## USING YOUR KVM SWITCH

### Console Column

The Console currently viewing the computer is indicated in this column.

### Passwords Page



The "Passwords" page allows the administrator to change user passwords, enable or disable user accounts, and set the AutoLogout time.

### Password Entry Fields

There is a "Change Password" button associated with each user; clicking the button displays the "Password Entry" dialog box. The administrator is required to type the password and then confirm it; the new password will not be accepted until the entries match (passwords are up to eight characters long and case-sensitive). Canceling the "Change Password" dialog box will return to the passwords page without changing the existing password. In a daisy-chain configuration, clicking "OK" automatically synchronizes this password with the other Consoles.

### Enable Check Boxes

The check boxes next to the user names allow the administrator to disable user accounts with a single mouse click. This removes the need to alter the security settings of each host individually when it is necessary to remove a user's access.

### AutoLogout Enable and Time

The AutoLogout feature logs off the user after a specified period (1–99 minutes) of Console inactivity. Generally, this will return the KVM Switch

## USING YOUR KVM SWITCH

to "Guest" level access, but if guest access has been disabled, all access rights will be revoked until a valid user logs on to the Console. The edit box sets the length of inactivity required before the logout occurs.

### Broadcast Passwords

This check box forces all other Consoles to overwrite all of their user passwords with the passwords contained in the current Console. This makes it simple for the administrator to synchronize the passwords of all Consoles (e.g. when adding a new Console to an existing configuration).

### Options Page



The controls on this page affect several of the KVM Switch's miscellaneous features.

### Display Banner

This check box enables a banner to be displayed for system events: pressing a direct-access port selector, powering on the KVM Switch, etc. The banner is either always displayed, or displayed for a configured time (1–99 seconds). If the timed selection is enabled, the time input determines how long the banner will remain on-screen after the system event occurs.

### Display Inactive Ports

Enabling this feature will cause ports that do not have an active computer attached to appear in the computer list box (on the main page of IntelliView. By default, inactive ports are displayed.

## USING YOUR KVM SWITCH

### Display Restricted Ports

Enabling this feature will cause ports that the current user is restricted from accessing to appear in the computer list box (on the main page of IntelliView). By default, restricted ports are displayed.

### Daisy-Chain this KVM

Checking this box allows KVM Switches set to BANK 00 to communicate with other BANKS in a daisy-chain configuration. This affects front-panel operations and a few other miscellaneous operational parameters.

Whenever the state of this check box is changed, a message will be displayed requiring the user to reboot the KVM Switch. The KVM Switch will continue to operate correctly without rebooting, but the setting of this check box will not take effect until the KVM Switch is rebooted. By default, KVM Switches set to BANK 00 are configured as standalone (the check box is cleared). This is only required for BANK 00.

### Display Version Numbers

This screen displays product information, including the model number and the firmware revisions.

### Restore Factory Defaults

Clicking on this button will restore all user-configurable settings to their default values. The user is presented with a confirmation screen before this action is applied.

### Error Messages and Dialogs

From time to time, it will be necessary to display messages to the user indicating errors or requesting simple answers to questions. These pop-up screens will have the familiar format of title bar and window body, which will contain the text of the message. There will also be appropriate response controls such as "OK" and "Cancel" buttons, based on the nature of the message.

## USING YOUR KVM SWITCH

### Login Dialog

The "Login Dialog" box is a simple window with radio buttons to select the user, and an edit box for users to enter their password. If users are already logged in, pressing cancel will return them to their current login (or "Guest" if the account is enabled). If the user is not logged in, and "Guest" is disabled, pressing "Cancel" will close IntelliView.

### Help Screens

Extensive help is available within IntelliView; simply press the F1 key, or click on the "?" button on the right side of the title bar.

### Banner

The banner is a small window that is displayed to inform the user of the Console's focus. The banner looks like a line of text surrounded by a gray frame with the typical 3D look. The banner will display the following:

- Group Name
- Host Name
- BANK and port in focus



If multiple consoles are viewing the same computer (MultiView mode), the Console with control will display the following banner information:

- Viewed by Console (Console Letter)
- BANK and port in focus

The view-only Console will display the following banner information:

- Viewing only, no control
- BANK and port in focus

### Splash Screen

When the KVM Switch powers on, it will display a splash screen with the product name and copyright information. This screen will remain for several seconds before it disappears. Calling up IntelliView will dispel this screen immediately.

## FAQs

**Q:** What operating systems does the KVM Switch support?

**A:** The KVM Switch will support any operating system that runs on a PS/2 and USB platform. Operating systems include, but are not limited to, DOS, Windows 95/98/2000/Me/NT/XP, Linux, and Mac OS.

**Q:** What does flash-upgradeable mean?

**A:** With flash upgrade capability, you can update your KVM Switch at any time through a simple parallel connection. Internet upgrade capability ensures that your KVM Switch is always the most current version on the market with the latest features and enhancements.

**Q:** Does the KVM Switch support Microsoft IntelliMouse®?

**A:** The KVM Switch supports mice from Microsoft®, Logitech®, Kensington®, etc., and Belkin. Please contact Belkin Technical Support for compatibility issues you may encounter.

**Q:** How does the KVM Switch allow the user to switch between ports?

**A:** The KVM Switch supports three methods of port selection. The user can select computers using specially designated keyboard hot keys, IntelliView, or can independently access the desired port by pushing the direct-access port selectors.

**Q:** How far can the computer be from the KVM Switch?

**A:** When using PS/2 connections, the KVM Switch can be up to 25 feet away from your computer. If your computer needs to be more than 25 feet (7.5 meters) from the KVM Switch, you can use the Belkin CAT5 Extender to place your monitor and PS/2 keyboard and PS/2 mouse up to 500 feet away using a standard CAT5 UTP cable. When using USB connection between your KVM Switch and computer, we recommend that your computer be no more than 12 feet (4 meters) from the KVM Switch.

## FAQs

**Q:** What is the maximum video resolution that the KVM Switch supports?

**A:** The advanced video circuit in the KVM Switch supports a maximum resolution of 2048x1536@85Hz.

**Q:** What video bandwidth does the KVM Switch support?

**A:** The KVM Switch supports 400MHz of video bandwidth.

**Q:** Do I have to install any software to use the KVM Switch?

**A:** No, the KVM Switch does not require any drivers or software to be installed in your computers. Simply connect all your computers to the PC ports on the KVM Switch, then attach one keyboard, monitor, and mouse to the Console port and it is ready for use.

**Q:** Can I use the KVM Switch on my Sun computer that supports USB?

**A:** Yes, the USB KVM Switch works with any USB-capable computer.

**Q:** Can I daisy-chain my KVM Switch with a Belkin PRO2 or MATRIX2 Series KVM Switch?

**A:** No, the KVM Switch cannot be daisy-chained to the PRO2 and MATRIX2 Series KVM Switches. You may only daisy-chain the KVM Switch with other ENTERPRISE Series KVM units (F1DE108B or F1DE008B).

## TROUBLESHOOTING

### Video

*I am getting ghosting, shadowing, or fuzzy images on my monitor.*

- Check that all video cables are inserted properly.
- Check that the monitor you are using supports the resolution and refresh-rate setting on your computer.
- Check that the graphics card you are using supports the resolution and refresh-rate setting on your computer.
- Connect the monitor directly into the computer you are having trouble with to see if the problem still appears.

*I am getting a black screen on my monitor.*

- Check that all video cables are inserted properly.
- Connect your monitor directly to the computer to verify that your monitor is functioning properly.

### Keyboard

*The computer does not detect a keyboard and I get a keyboard error reported at boot up.*

- Check that the cable between the KVM Switch and the computer is completely connected. Tighten any loose connections.
- Try using a different keyboard.
- Try connecting the computer to a different port.

### USB

*I am connecting my computer to the KVM Switch via USB and my keyboard and mouse do not work.*

- Prior to connecting the KVM Switch, make sure that the HID USB driver is installed on each computer. (To install the HID USB driver, connect a USB mouse and USB keyboard to the computer. A Windows operating system should automatically install the drivers.)

## WARRANTY, FCC, CE, ICES STATEMENT

### FCC Statement

#### DECLARATION OF CONFORMITY WITH FCC RULES FOR ELECTROMAGNETIC COMPATIBILITY

We, Belkin Components, of 501 West Walnut Street, Compton CA 90220, declare under our sole responsibility that the product:

**F1DE108B**

to which this declaration relates:

Complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### CE Declaration of Conformity

We, Belkin Components, declare under our sole responsibility that the F1DE108B to which this declaration relates, is in conformity with Emissions Standard EN55022 and with Immunity Standard EN55024, LVP EN61000-3-2, and EN61000-3-3.

### ICES

This Class B digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

### Belkin Components Limited Five-Year Product Warranty

Belkin Components warrants this product against defects in materials and workmanship for its warranty period. If a defect is discovered, Belkin will, at its option, repair or replace the product at no charge provided it is returned during the warranty period, with transportation charges prepaid, to the authorized Belkin dealer from whom you purchased the product. Proof of purchase may be required. This warranty does not apply if the product has been damaged by accident, abuse, misuse, or misapplication; if the product has been modified without the written permission of Belkin; or if any Belkin serial number has been removed or defaced.

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BELKIN IS NOT RESPONSIBLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY, OR UNDER ANY OTHER LEGAL THEORY, INCLUDING BUT NOT LIMITED TO, LOST PROFITS, DOWNTIME, GOODWILL, DAMAGE TO OR REPROGRAMMING, OR REPRODUCING ANY PROGRAM OR DATA STORED IN OR USED WITH BELKIN PRODUCTS.

Some states do not allow the exclusion or limitation of incidental or consequential damages or exclusions of implied warranties, so the above limitations of exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.



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