# ATEN

Simply Better Connections

# CL3108 / CL3116

8 / 16-Port VGA Single Rail
WideScreen LCD KVM Switch
User Manual

# Compliance Statements

**FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

The device 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.

**FCC Caution**

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

**Warning**

Operation of this equipment in a residential environment could cause radio interference.

**Achtung**

Der Gebrauch dieses Geräts in Wohnumgebung kann Funkstörungen verursachen.

**KCC Statement**

유선 제품용 / A 급 기기 ( 업무용 방송 통신 기기 )
이 기기는 업무용 (A 급 ) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며 , 가정 외의 지역에서 사용하는 것을 목적으로 합니다 .

**Industry Canada Statement**

This Class A digital apparatus complies with Canadian ICES-003.

CAN ICES-003 (A) / NMB-003 (A)

**RoHS**

This product is RoHS compliant.

# User Information

## Online Registration

Be sure to register your product at our online support center:

| International | http://eservice.aten.com |
| --- | --- |

## Telephone Support

For telephone support, call this number:

| International | 886-2-8692-6959 |
| --- | --- |
| China | 86-400-810-0-810 |
| Japan | 81-3-5615-5811 |
| Korea | 82-2-467-6789 |
| North America | 1-888-999-ATEN ext 4988 |
| | 1-949-428-1111 |

## User Notice

All information, documentation, and specifications contained in this manual are subject to change without prior notification by the manufacturer. The manufacturer makes no representations or warranties, either expressed or implied, with respect to the contents hereof and specifically disclaims any warranties as to merchantability or fitness for any particular purpose. Any of the manufacturer's software described in this manual is sold or licensed *as is*. Should the programs prove defective following their purchase, the buyer (and not the manufacturer, its distributor, or its dealer), assumes the entire cost of all necessary servicing, repair and any incidental or consequential damages resulting from any defect in the software.

The manufacturer of this system is not responsible for any radio and/or TV interference caused by unauthorized modifications to this device. It is the responsibility of the user to correct such interference.

The manufacturer is not responsible for any damage incurred in the operation of this system if the correct operational voltage setting was not selected prior to operation. PLEASE VERIFY THAT THE VOLTAGE SETTING IS CORRECT BEFORE USE.

# Product Information

For information about all ATEN products and how they can help you connect without limits, visit ATEN on the Web or contact an ATEN Authorized Reseller. Visit ATEN on the Web for a list of locations and telephone numbers:

| International | http://www.aten.com |
|---|---|
| North America | http://www.aten-usa.com |

# Package Contents

Check to make sure that all components are in working order. If you encounter any problem, please contact your dealer.

The CL3108 / CL3116's standard package consists of:

- 1 CL3108 / CL3116 WideScreen LCD KVM Switch
- 1 power cord
- 2 custom KVM cables (VGA, USB)
- 1 firmware upgrade cable
- 1 user instructions*

# Contents

# 3. Basic Operation

# 4. OSD Operation

# 5. Keyboard Port Operation

# 6. Keyboard Emulation

# 7. The Firmware Upgrade Utility

# Appendix

# About this Manual

This user manual is provided to help you get the most out of your CL3108 / CL3116. It covers all aspects of the device, including installation, configuration, and operation.

The WideScreen LCD KVM switch models covered in this manual include:

| Model | Product Name |
|-------|--------------|
| CL3108 | 8-Port PS/2-USB VGA Single Rail WideScreen LCD KVM Switch |
| CL3116 | 16-Port PS/2-USB VGA Single Rail WideScreen LCD KVM Switch |

An overview of the information found in the manual is provided below.

**Chapter 1, Introduction,** introduces you to the CL3108 / CL3116, its purpose, features, and benefits, with its front and back panel components described.

**Chapter 2, Hardware Setup,** describes how to set up your CL3108 / CL3116, from the necessary steps for a basic single-level hookup to a complete 17-switch two-level operation.

**Chapter 3, Basic Operation,** explains the fundamental concepts involved in operating the CL3108 / CL3116.

**Chapter 4, OSD Operation,** provides a complete description of the CL3108 / CL3116 OSD (on-screen display), and the various functions contained.

**Chapter 5, Keyboard Port Operation,** details all of the concepts and procedures involved in the hotkey operation of your CL3108 / CL3116 installation.

**Chapter 6, Keyboard Emulation,** provides tables that list the PC to Mac and PC to Sun keyboard emulation mappings.

**Chapter 7, The Firmware Upgrade Utility,** explains how to upgrade the CL3108 / CL3116's firmware to the latest available versions using the firmware upgrade utility.

**Appendix,** provides the specifications and other technical information at the end of the manual.

**Note:**

- ◆ Read this manual thoroughly and follow the installation and operation procedures carefully to prevent any damage to the unit or connected devices.

- ◆ ATEN regularly updates its product documentation for new features and fixes. For an up-to-date CL3108 / CL3116 documentation, visit

  http://www.aten.com/global/en/

## Conventions

This manual uses the following conventions:

| | |
|---|---|
| Monospaced | Indicates text that you should key in. |
| [ ] | Indicates keys you should press. For example, [Enter] means to press the **Enter** key. If keys need to be chorded, they appear together in the same bracket with a plus sign between them: [Ctrl+Alt]. |
| 1. | Numbered lists represent procedures with sequential steps. |
| ♦ | Bullet lists provide information, but do not involve sequential steps. |
| > | Indicates selecting consecutive options (such as on a menu or dialog box). For example, Start > Run means to open the *Start* menu, and then select *Run*. |
| ⚠ | Indicates critical information. |

# Chapter 1
# Introduction

## Overview

The ATEN CL3108 / CL3116 LCD KVM switch offers a space-saving, streamlined approach to KVM switch technology by integrating a 18.5" LED-backlit LCD monitor and a keyboard and touchpad into a 1U rack-mountable sliding housing on a 8 / 16 port KVM switch. The short-depth design maximizes space utility for equipping rack mounting devices in narrow spaces on a rack. In addition, its LED illumination provides users with proper visibility for operation under low-light conditions.

The CL3108 / CL3116 can control up to 8 / 16 computers on a single-station setup, and can be cascaded for controlling up to 128 / 256 computers.

Featuring its Broadcast mode, the CL3108 / CL3116 can simultaneously issue and spread the same commands to all connected computers for batch operation. The Auto scan mode fulfills the need of automated monitoring by alternating views from the selected computers at a set interval.

For enhanced security, the CL3108 / CL3116 provides two-level password and restricts unauthorized users from viewing and controlling the computers. For added convenience, the CL3108 / CL3116 comes with an external USB mouse port that supports HID device for keyboard and mouse operation.

As a feature-rich LCD KVM switch, the CL3108 / CL3116 does not just achieve but exceeds its concept for space usage optimization, superior video quality, adaptive deployment, and operational versatility, and thus is the ideal solution for all settings with limited space across all industries.

# Features

## Space Usage Optimization

- Exclusive LED illumination — designed by ATEN to illuminate the keyboard and touchpad for operation under low-light conditions

- Integrated LCD KVM console with an 18.5" LED-backlit widescreen LCD monitor in a single rail housing with top and bottom clearance for smooth operation in a 1U system rack

- Short-depth design allowing you to work with varying rack-mounting equipment within narrow spaces

- Console lock — enables the console drawer to remain securely locked away when not in use

## Reliability and Operational Versatility

- Superior video quality — up to 1366 x 768, DDC2B

- Cascade up to 2 levels — CL3108 / CL3116 can control up to 128 / 256 computers from a single console (With compatible KVM Switches: CS1308, CS1316)

- Dual Interface — supports computers with PS/2 or USB keyboard and mouse interface

- Auto PS/2 and USB interface detection

- Keyboard and mouse emulation (PS/2 and USB) for smooth switching and simultaneously booting multiple computers even when the console focus is elsewhere

- Computer selection via pushbuttons, hotkeys, and multilingual on-screen display (OSD)

- Broadcast mode — allows you to send commands from the console to all computers to perform operations simultaneously

- Two-level password security — only authorized users can view and control computers

- Auto Scan mode — enables  automated monitoring of user-selected computers

- Keyboard Language supports: English (US), English (UK), German (GER.), German (SWISS), French, Hungarian, Italian, Japanese, Korean, Russian, Spanish, Swedish, and Traditional Chinese

- Additional hot-pluggable USB mouse port on front panel that supports HID device for keyboard and mouse

## Installation Flexibility

- Standard rack mount kit included
- Optional rack mount kits available including easy installation options
- No software required
- Firmware upgradable
- Supports hot-plugging

# Requirements

## Computers

The following hardware components are required for each computer:

- A VGA, SVGA, or multisync video graphics card with an HDB-15 port.
- PS/2 mouse and keyboard ports (6-pin mini-DIN), or at least one USB port.

## Cables

Substandard cables might damage or affect the overall performance of the connected devices. For optimum signal integrity and a simplified layout, please use the high-quality custom cable sets described below.

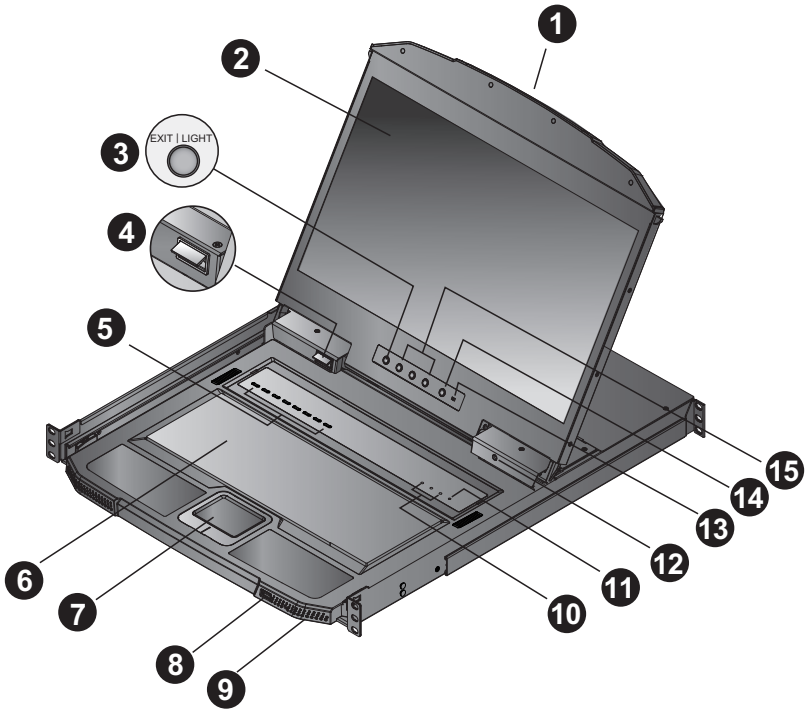| Function | | Length | Part Number |
|---|---|---|---|
| KVM switch to computer | PS/2 | 1.2 m<br>1.8 m<br>3.0 m<br>6.0 m<br>1.8 m | 2L-5201P<br>2L-5202P<br>2L-5203P<br>2L-5206P<br>2L-5702P |
| | USB | 1.2 m<br>1.8 m<br>3.0 m<br>5.0 m | 2L-5201U<br>2L-5202U<br>2L-5203U<br>2L-5205U |
| | PS/2-USB | 1.2 m<br>1.8 m<br>3.0 m | 2L-5301UP<br>2L-5302UP<br>2L-5303UP |

## Operating Systems

Supported operating systems include Windows, Mac, Linux, and Sun.
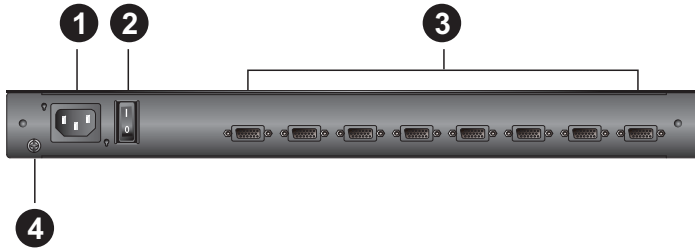
# Components

## Front View



**Note:** While it is the CL3108 that is pictured above, the CL3116 is identical with the exception of having 16 KVM ports instead of 8.

| No. | Component | Description |
|---|---|---|
| 1 | handle | Pull to slide the LCD module out; push to slide it in. See *Opening the Console* / *Closing the Console*, page 19 for sliding the console in and out. |
| 2 | LCD display | After sliding the KVM module out, flip up the cover to access the LCD monitor by pressing the Handle, see *handle*, page 5. |
| 3 | exit / light pushbutton | Press the exit / light pushbutton for two seconds to turn the LED light on or off (default: on)During the LCD OSD mode, this pushbutton has more functions, refer to *The LCD Buttons* on page 22 for more details. |
| 4 | LED illumination light | Illuminates the keyboard and touchpad to allow visibility in low-light conditions. |
| 5 | port selection pushbutton / LEDs (8 for CL3108, 16 for CL3116) | Press the port pushbuttons to bring the KVM focus to the computer attached to the corresponding port. An orange **ON LINE** LED lights to indicate that the computer attached to its corresponding port is up and running. A green **Selected** LED lights to indicate that the computer attached to the corresponding port is selected for KVM control. |
| 6 | keyboard | Standard 105-key keyboard |
| 7 | touchpad | Standard mouse touchpad |
| 8 | external mouse port | The USB port is available to connect a USB keyboard or mouse device for users who prefer to use an external keyboard and mouse. |
| 9 | power LED | Lights green to indicate that the unit is receiving power. |
| 10 | lock LEDs | The Num Lock, Caps Lock, Scroll Lock LEDs are located here. |
| 11 | reset button | Located to the right of the Lock LEDs. Press this button in with a small object to perform a system reset. |
| 12 | firmware upgrade port | The firmware upgrade cable that transfers the firmware upgrade data from the administrator's computer to the CL3108 / CL3116 plugs into this 3.5 mm audio jack. |
| 13 | firmware upgrade switch | During normal operation and while performing a firmware upgrade, this switch should be in the NORMAL position. If a firmware upgrade operation does not complete successfully, this switch is used to perform a firmware upgrade recovery. See *Upgrade Failed*, page 56, for details. |
| 14 | panel power button | Push this button to turn the LCD monitor on and off. The button lights when the LCD monitor is off. **Note:** The light indicates that only the monitor is off, not the attached KVM switch. |
| 15 | LCD controls | The buttons to control the position and picture settings of the LCD display are located here. See page 22, for details. |

## CL3108 Rear View



| No. | Component | Description |
|-----|-----------|-------------|
| 1 | power socket | This is a standard 3-prong AC power socket. The power cord from an AC source plugs in here. |
| 2 | power switch | This standard rocker switch powers the unit on and off. |
| 3 | KVM port section | The cables that link to the computers plug in here. |
| | | **Note:** The shape of these SPHD connectors have been specifically modified so that only KVM cables designed to work with this switch can plug in (see the *Cables* section on page 3, for details). Do **NOT** attempt to use ordinary 15 pin VGA connector cables to link these ports to the computers. |
| 4 | grounding terminal | The grounding wire used to ground the switch attaches here. |

## CL3116 Rear View



| No. | Component | Description |
|-----|-----------|-------------|
| 1 | power socket | This is a standard 3-prong AC power socket. The power cord from an AC source plugs in here. |
| 2 | power switch | This standard rocker switch powers the unit on and off. |
| 3 | KVM port section | The cables that link to the computers plug in here.<br>**Note:** The shape of these SPHD connectors have been specifically modified so that only KVM cables designed to work with this switch can plug in (see the *Cables* section on page 3, for details). Do **NOT** attempt to use ordinary 15 pin VGA connector cables to link these ports to the computers. |
| 4 | grounding terminal | The grounding wire used to ground the switch attaches here. |

This Page Intentionally Left Blank

# Chapter 2
# Hardware Setup

## Overview

The CL3108 / CL3116 is a switch designed to work with USB and PS/2 interfaces. It utilizes custom KVM cables that serve as the medium between the switch and managed computers. A custom KVM cable is required for each computer, and the available types are listed on page 3. Consult your dealer to find out which custom KVM cables best fit your needs.

## Before you Begin

1. Important safety information regarding the placement of this device is provided on page 57. Please review it before proceeding.

2. Make sure that the power of all devices to be connected has been turned off. You must unplug the power cords of any computers with Keyboard Power-On function.

3. The LCD KVM switch is designed for rack mounting. If the KVM switch is not rack mounted, be sure to place it on a leveled and firm surface before pulling the device in or out to prevent damage due to uneven force on the module.

Place on Flat Surface
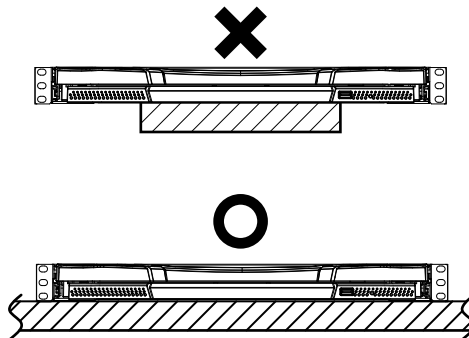
4. Please operate the device with caution when under high environmental temperatures, as the surface of the device may become overheated under such conditions. For instance, the surface temperature of the device may reach 70 ºC or higher when the environmental temperature reaches close to 50 ºC.

# Standard Rack Mount

A standard rack mount kit is provided with your CL3108 / CL3116, allowing it to be mounted in a 1U rack space. The kit enables the switch to be mounted onto a rack with a depth of 58.0 - 80.0 cm. The installation procedures are described in the following sections. Below is an image of the parts included with your package that will be needed for rack installation.



left & right L-shaped brackets
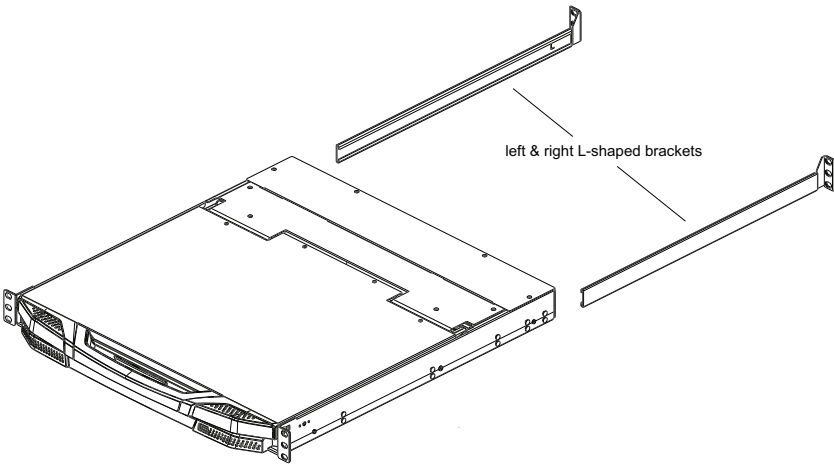
**Note:**
- It takes two people to mount the console.
- The standard rack mount kit does not include screws or cage nuts. If you need additional screws or cage nuts, contact your rack dealer.

To rack mount the CL3108 / CL3116, do the following:

1. Attach the left and right mount brackets to the back of the rack, installing four screws in the brackets to secure them in place.
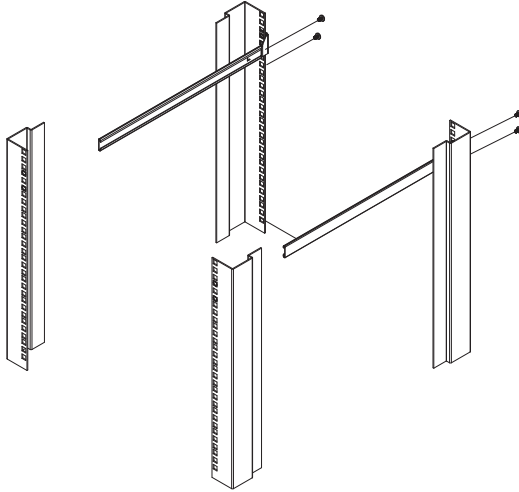


2. While one person inserts the unit into place by sliding its left and right side bars into the left & right L-shaped brackets (on the rack), have a second person screw the front brackets to the rack.
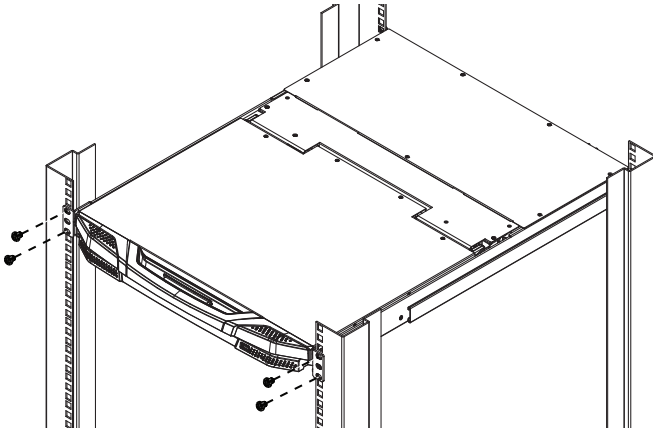


3. After the front brackets are secured, tighten all the screws.

   Allow at least 5.1 cm of clearance on each side for proper ventilation, and at least 12.7 cm at the back for the power cord and cables.

# Optional Rack Mount Kits

Optional rack mount kits are also available and listed in the table below:

| Mounting Kit | Description |
|---|---|
| Standard Long Rack Mount Kit | This kit is the long-railed version of your standard rack mount kit that lets you fit your device to racks with a greater depth. |
| Easy Installation Rack Mount Kit | This kit is designed to easily install the device without requiring more than one person |

**Note:** ◆ For more information, visit the product webpage and refer to the *Compatible Accessories*.

◆ For detailed installation steps, visit the product webpage and refer to the *Optional Rack Mount Kits Installation Guide*.

# Grounding

To prevent damage to your installation, it is important that all devices are properly grounded. Use a grounding wire to ground the CL3108 / CL3116 by connecting one end of the wire to the grounding terminal, and the other end of the wire to a suitable grounded object.



**Note:** The CL3116 is pictured above. The CL3108 rear panel is the same as the CL3116, except that it has 8 KVM ports instead of 16.

# Single-Level Installation

In a single-level installation, there are no additional switches cascaded from the first unit. To set up, do the following:

**Note:** The CL3116 is pictured below. The CL3108 rear panel is the same as the CL3116, except that it has 8 KVM ports instead of 16.

1. Ground the CL3108 / CL3116 and make sure the power of all computers to be connected has been turned off.

2. Use KVM cable sets* (as described in the *Cables* section on page 3), to connect any available KVM port to the keyboard, video, and mouse ports of the computer you are installing. Refer to the *KVM Cable Installation Diagrams* on the following page.

3. Plug the power cable into an AC power source.

4. Turn on the power to LCD Console.

5. Turn on the power to the computers.

### Single-Level Installation Diagram
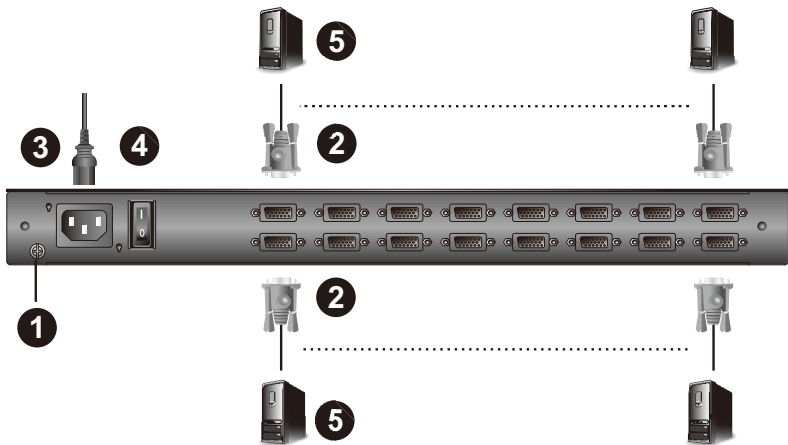


**Note:** The numbers in the diagram correspond to the numbered steps above.

* Contact your KVM dealer for ordering information.

# Cable Connection Diagrams

## KVM Cable Installation Diagrams

**USB KVM Cable Connection**
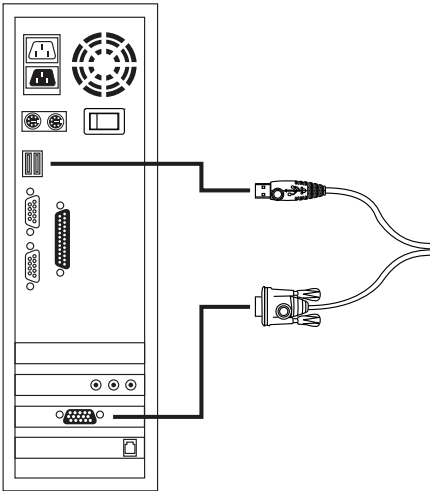


**PS/2 KVM Cable Connection**
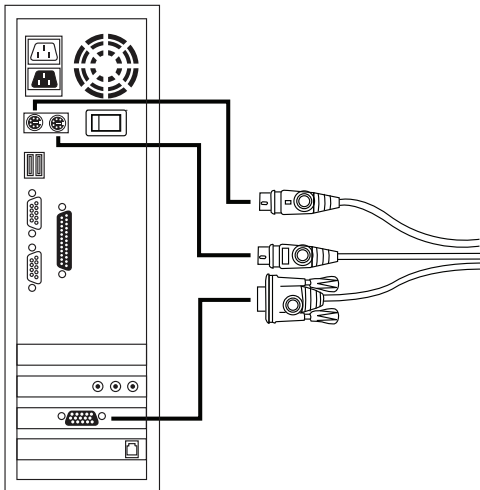
# Two-Level Installation

To control even more computers, up to 8 / 16 additional switches can be cascaded from the first CL3108 / CL3116 (see the Appendix for a list of compatible ATEN switches). As many as 128 (CL3108) or 256 (CL3116) computers can be controlled from a single console in a complete cascaded installation. Tables showing the relation between the number of computers and the number of switches needed to control them are provided on page 63 in the Appendix.

To set up a two-level installation, do the following:

**Note:**  The CL3116 is pictured below. The CL3108 rear panel is the same as the CL3116, except that it has 8 KVM ports instead of 16.

1. Ground the main switch — CL3108 / CL3116 and make sure that power has been turned off on all computers to be connected.

2. Using a KVM cable, connect any available KVM port on the first-level switch to the console port on the second level unit*.

3. Use KVM cable sets (described in the *Cables* section, page 3), to connect any available KVM port on the CL3108 / CL3116 installation to the keyboard, video, and mouse ports of the computers you are installing.

4. Repeat the above steps for any additional units you wish to add to the installation.

5. The Power-On sequence requires that all sub units to be powered on first. After they are all on, the main unit must be powered on next. Only after all the switches have been powered on in this sequence, can the computers be powered on.

**Note:**  The CL3108 / CL3116 can only be installed as the first switch in a two-level installation as its LCD, keyboard, and mouse are used as the console and all second-level switches require an external console port to be cascaded.

## Two-Level Installation Diagram
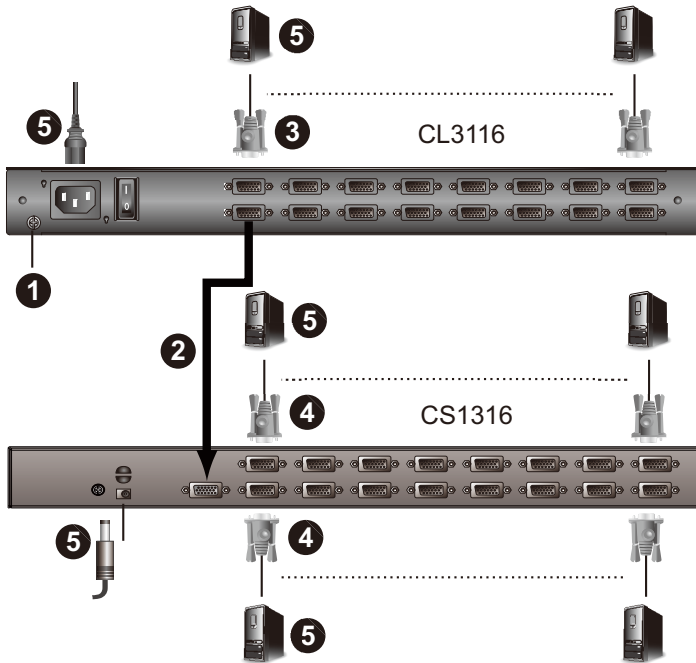
# Chapter 3
# Basic Operation

## Opening the Console

The CL3108 / CL3116's console is located under the top cover. To access the console, slide the console module out and raise the cover.

---

**Note:** As a safety precaution, to keep the console from accidentally sliding out, the console is locked into the In position. Before you can pull the console module out, you must release it by pulling the release bar on the unit's front panel toward the center of the switch.

---

To slide the console module out, do the following:

1. Pull on the release bar on the handle.
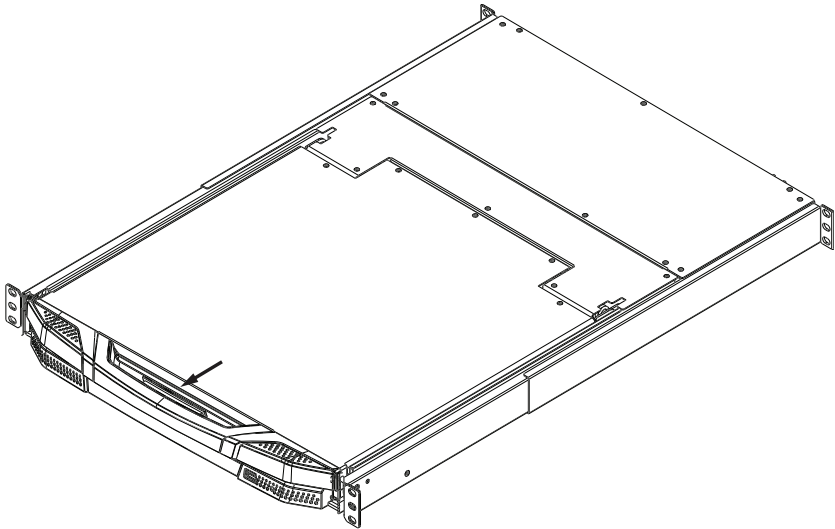
2. Slide the module all the way out until it automatically locks in place.
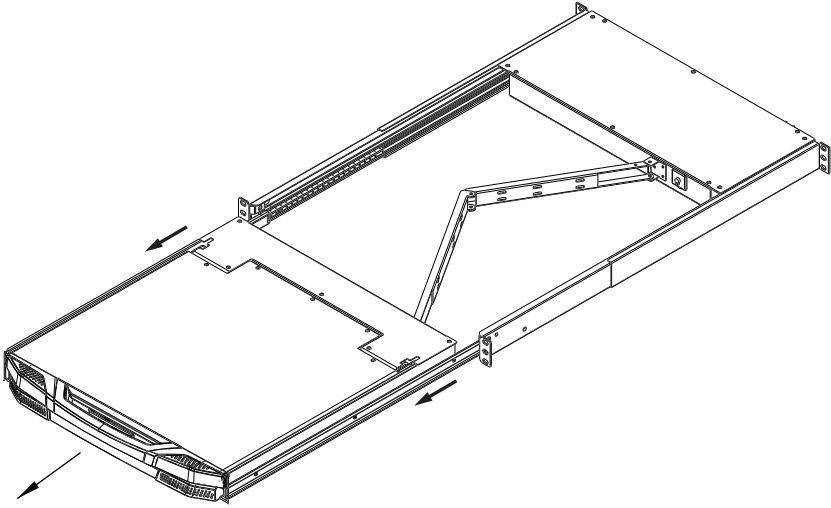


3. Open the cover  by pulling the release bar on the handle as pictured below.
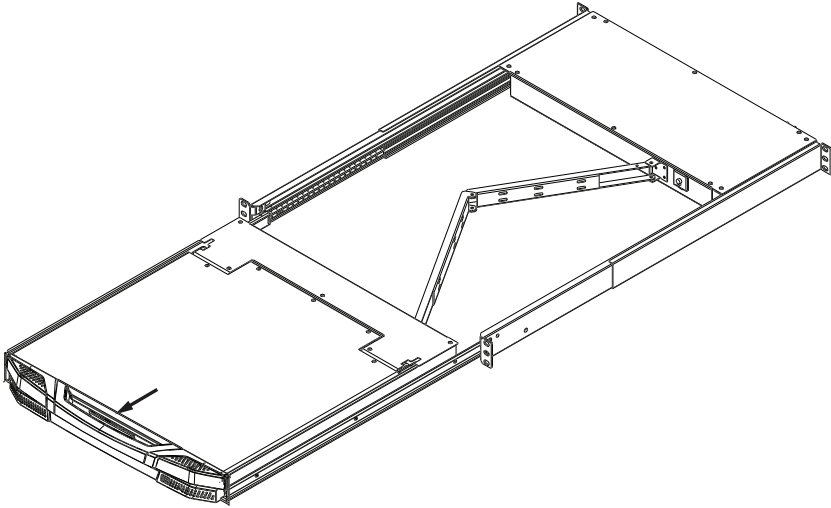
4. Below is what the CL3108 / CL3116 looks like when it is opened up.
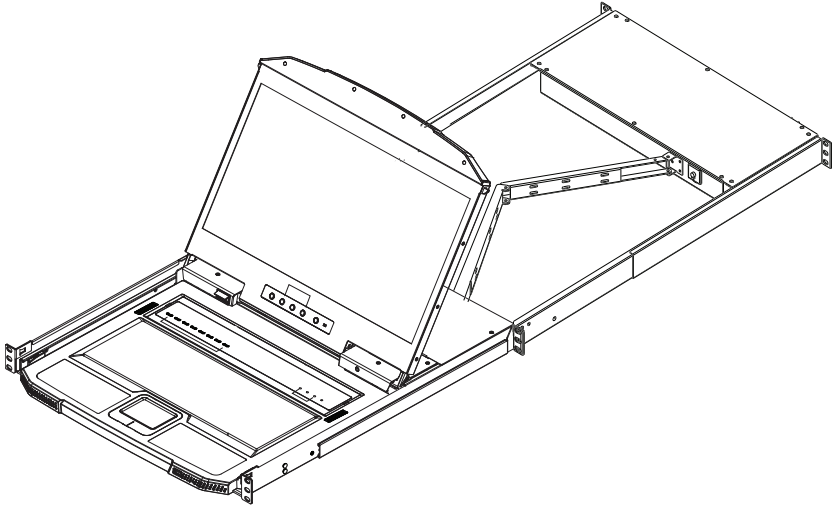
## Closing the Console

To slide the console module back in, do the following:
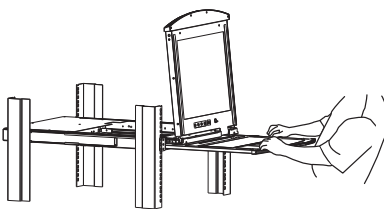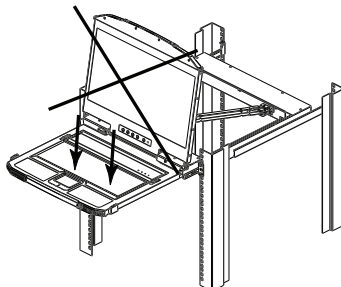
1. Close the cover.

2. Push the module all the way in until it automatically locks in place.
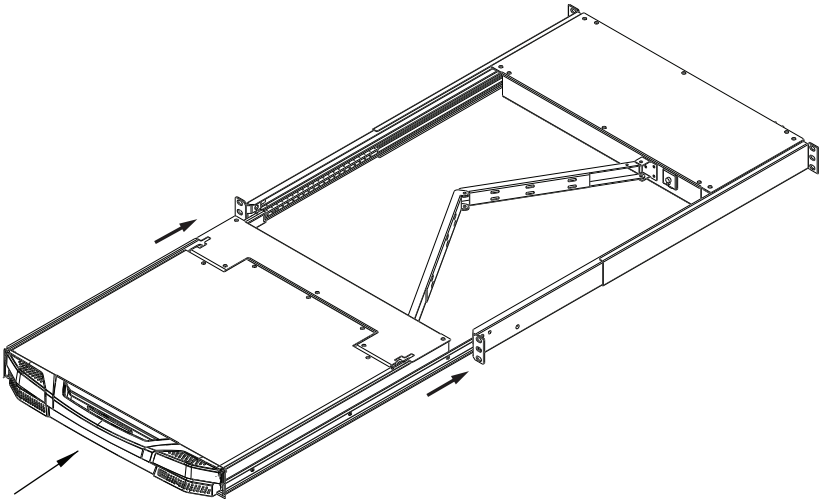
# Operating Precautions

 The maximum load bearing capacity of the keyboard module is 20 kg. Failure to heed the information below can result in damage to the keyboard module.

| | |
|---|---|
|  | **Right!**<br><br>Rest your hands and arms lightly on the keyboard module as you work. |
|  | **Wrong**!<br><br>◆ **DO NOT** lean your body weight on the keyboard module.<br>◆ **DO NOT** place heavy objects on the keyboard module. |

# Powering Off and Restarting

If it becomes necessary to power off the CL3108 / CL3116, do the following before restarting it:

1. Shut down all the computers that are attached to the CL3108 / CL3116.

   **Note:** Unplug the power cords of any computers with Keyboard Power-On function, otherwise, the CL3108 / CL3116 will still receive power from the computers.

2. Unplug the CL3108 / CL3116 from its power source.

3. Wait for 10 seconds, then plug the CL3108 / CL3116 back in.

4. After the CL3108 / CL3116 has started and ascertained its station ID, power on the computers.

   **Note:** If you have shut down more than one station, power up the highest station first and work your way down to the lowest one.

# LCD OSD Configuration

## The LCD Buttons

The LCD OSD allows you to set up and configure the LCD display. Four buttons are used to perform the configuration, as described in the table, below:

| Button | Function |
|---|---|
| MENU | ◆ When you have not entered the LCD OSD Menu function, pressing this button invokes the Menu function, and brings up the Main Menu. |
| | ◆ When you have entered the LCD OSD Menu function, and have reached a setting choice with the navigation buttons, pressing this button brings up its adjustment screen. |
| ▶\|▲ | When navigating through the menus, this button moves you Right or Up. When making an adjustment, it increases the value. |
| ◀\|▼ | When navigating through the menus, this button moves you Left or Down. When making an adjustment, it decreases the value. |
| EXIT / LIGHT | ◆ When you have not entered the LCD OSD Menu function, pressing this button performs an auto adjustment. An auto adjustment automatically configures all the settings for the LCD panel to what the OSD considers their optimum values to be. |
| | ◆ When you have entered the LCD OSD Menu function, pressing this button exits the current menu and returns you to the previous menu. Use it to leave an adjustment menu when you are satisfied with the adjustment you made. |
| | ◆ When you are at the Main Menu, pressing this button exits the LCD OSD. |
| PANEL POWER | ◆ Push this button to turn the LCD monitor on and off. The button lights when the LCD monitor is off. |
| | **Note:**The light only indicates that the monitor is off, not the attached KVM switch. |

## LCD Adjustment Settings

An explanation of the LCD OSD adjustment settings is given in the table below:

| Setting | Explanation |
|---|---|
| Brightness | Adjusts the background black level of the screen image. |
| Contrast | Adjusts the foreground white level of the screen image. |
| Phase | If pixel jitter or horizontal line noise is visible on the display, your LCD may have the wrong phase setting. Adjust the phase setting to eliminate these problems. |
| Clock | If vertical banding is visible on the display, your LCD may have the wrong clock setting. Adjust the clock setting to eliminate vertical banding. |
| H-Position | Positions the display area on the LCD panel horizontally (moves the display area left or right). |
| V-Position | Positions the display area on the LCD panel vertically (moves the display area up or down). |
| Color Temperature | Adjusts the color quality of the display. You can adjust the warmth value, color balance, etc. The *Adjust Color* selection has a further submenu that lets you fine tune the RGB values. |
| Language | Selects the language that the OSD displays its menus in. |
| OSD Duration | Lets you set the amount of time the OSD displays on the screen. If there is no input for the amount of time you choose, the OSD display turns off. |
| Reset | Resets the adjustments on all menus and submenus to their factory default settings.<br><br>**Note:** The Language setting does not return to the factory default, but remains at the one that you have set it to. |

**Note:** As an alternative to manually adjusting the LCD settings, you can have the LCD auto-adjusted for optimum display by pressing the Exit button. See *EXIT / LIGHT*, page 22.

# Hot Plugging

The CL3108 / CL3116 supports *hot plugging* – components can be removed and added back into the installation by unplugging their cables from the ports without the need to shut the unit down. In order for hot plugging to work properly, the procedures described below must be followed:

## Hot Plugging KVM Ports

In order for the OSD menus to correspond to KVM port changes, you must manually reconfigure the OSD to reflect the new port information. See the *F3 SET* (page 31) and *F4 ADM* (page 33), functions for details.

**Note:** If the computer's operating system does not support hot plugging, this function may not work properly.

# Port Selection

The CL3108 / CL3116 provides three port selection methods to access the computers on the installation: Manual, OSD (on-screen display), and Hotkeys. See Chapter 4, *OSD Operation* and Chapter 5, *Keyboard Port Operation* for more information.

## Manual Port Switching

Use the Port LED/Port Pushbuttons located on the keyboard module to switch KVM focus to any port on the installation.

# Port ID Numbering

Each port on a CL3108 / CL3116 installation is assigned a unique *Port ID*. You can directly access any computer on any level of the installation by specifying the Port ID that the computer is connected to – either with the OSD (see *OSD Operation*, page 27), or with the Hotkey port selection method (see *Keyboard Port Operation*, page 39).

◆ A computer attached to the main unit has a two-digit Port ID (from 01–08 for the CL3108; from 01–16 for the CL3116), that corresponds to the KVM port number that it is connected to.

◆ A computer attached to a sub unit has a four-digit Port ID.

The first two digits represent the KVM port number on the main and the second two digits represent the KVM port number on the slave unit that the computer is connected to. For example, a Port ID of 02–16 would refer to a computer that is connected to KVM port 16 of a slave unit that links back to KVM port 2 of the main unit.

This Page Intentionally Left Blank

## OSD Overview

The on-screen display (OSD) is a mouse and keyboard enabled, menu-driven method to handle computer control and switching operations. All procedures start from the OSD main screen.

### OSD Login

The OSD incorporates a two-level (administrator / user) password system. Before the OSD main screen displays, a login screen appears requiring a username and a password.

If this is the first time you are using the OSD, or if the password function has not been set, simply press **[Enter**] **[Enter**]. The OSD main screen is displayed under administrator mode, with full access to all functions, and can set up operations (including login credentials) as you like.

If the password function has been set, you must provide an appropriate administrator/user password in order to access the OSD.

### Dedicated Invocation Key

A dedicated keys is provided on the keyboard module to make it easy to invoke the OSD (as shown in the diagram below):



**Note:** Press once to invoke the feature, press again to exit.

### OSD Hotkey

The OSD hotkey is enabled and set to *[Scroll Lock] [Scroll Lock]* by default. Using the OSD hotkey, the users can access the OSD. You can change the Hotkey to the **[Ctrl]** key should you wish to. Refer to *Hotkey Summary Table* on page 48 for more information.

## OSD Main Screen

When you invoke the OSD, a screen similar to the one below appears:



**Note:** 1. The diagram depicts the administrator's main screen. The user main screen does not show the F4 and F6 functions, since these are reserved for the administrator and can't be accessed by users.

2. The OSD always starts in list view, with the highlight bar at the same position it was in the last time it was closed.

3. Only the ports that have been set accessible by the administrator for the current logged in user are visible (see SET ACCESSIBLE PORTS, page 33, for details).

4. If the port list is collapsed, click on a switch number, or move the highlight bar to it then press the right arrow key to expand the list. Similarly, to collapse a switch's port list, click on the switch number, or move the highlight bar to it then press the left arrow key to collapse the list.

## OSD Main Screen Headings

| PN | This column lists the port ID numbers for all the KVM ports on the installation. The simplest method to access a particular computer is move the highlight bar to it, then press **Enter**. |
|---|---|
| QV | If a port has selected for quick view scanning (see *Set Quick View Ports*, page 35), an arrowhead displays in this column. |
| ☼ | The computers that are powered on and are online have a sun symbol in this column. |
| NAME | If a port has been given a name (see *Edit Port Names*, page 34), its name appears in this column. |

### OSD Navigation

 To dismiss the menu, and deactivate OSD, click the **X** at the upper right corner of the OSD window; or press **[Esc]**.

 To log out, click **F8** at the top of the main screen, or press **[F8]**.

 To move up or down through the list one line at a time, click the up and down triangle symbols (▲▼) or use the up and down arrow keys. If there are more list entries than what can appear on the main screen, the screen will scroll.

 To move up or down through the list one screen at a time, click the up and down arrow symbols (↑↓), or use the [Pg Up] and [Pg Dn] keys. If there are more list entries than what can appear on the main screen, the screen will scroll.

 To activate a port, double-click it, or move the highlight bar to it then press **[Enter]**.

 After executing any action, you automatically go back to the menu one level above.

## OSD Functions

OSD functions are used to configure and control the OSD. For example, you can rapidly switch to any port, scan selected ports, limit the list you wish to view, designate a port as a quick view port, create or edit a port name, or make OSD setting adjustments.

To access an OSD function:

1. Either click a function key field at the top of the main screen, or press a function key on the keyboard.

2. In the submenus that appear make your choice either by double-clicking it, or moving the highlight bar to it, then pressing **[Enter]**.

3. Press **[Esc]** to return to the previous menu level.

## F1: GOTO

Clicking the **F1** field or pressing **[F1]** activates the GOTO function. GOTO allows you to switch directly to a port either by keying in the port's *Name*, or its *Port ID*.

◆ To use the name method, key in **1**; key in the port's *Name*; then press **[Enter]**.

◆ To use the port ID method, key in **2**; key in the *Port ID*; then press **[Enter]**.

---

**Note:** You can key in a partial name or port ID. In that case, the screen will show all the computers that the user has View rights to (see SET ACCESSIBLE PORTS, page 33), that match the name or port ID pattern, regardless of the current list settings (see F2 LIST, page 30, for details).

---

To return to the OSD main screen without making a choice, press **[Esc]**.

## F2: LIST

This function lets you broaden or narrow the scope of which ports the OSD displays on the main screen. The submenu choices and their meanings are given in the table below.

| Choice | Meaning |
|---|---|
| ALL | Lists all of the ports on the installation that have been set accessible by the administrator for the current logged in user. |
| QUICK VIEW | Lists only the ports that have been selected as quick view ports (see *SET QUICK VIEW PORTS*, page 35). |
| POWERED ON | Lists only the ports that have their attached computers powered on. |
| QUICK VIEW + POWERED ON | Lists only the ports that have been selected as quick view ports (see *SET QUICK VIEW PORTS*, page 35), and that have their attached computers powered on. |

Move the highlight bar to the choice you want, then press **[Enter]**. An icon appears before the choice to indicate that it is the currently selected one.

## F3: SET

This function allows the administrator and each user to set up his own working environment. A separate profile for each is stored by the OSD and is activated according to the username that was provided during login.

To change a setting:

1. Double-click it; or move the highlight bar to it, then press **[Enter]**.

2. After you select an item, a submenu with further choices appears. To make a selection, either double-click it; or move the highlight bar to it, then press **[Enter]**. An icon appears before the selected choice to indicate which one it is. The settings are explained in the following table:

| Setting | Function |
|---|---|
| OSD HOTKEY | Selects one of the following to disable or enable a hotkey for activating the OSD function:<br><br>**OFF, [Scroll Lock] [Scroll Lock]** or **[Ctrl] [Ctrl]**.<br><br>**Note:** By default, this function is set to *[Scroll Lock] [Scroll Lock]*. |
| PORT ID DISPLAY POSITION | Allows each user to customize the position where the port ID appears on the screen. The default is the upper left corner, but users can choose to have it appear anywhere on the screen.<br><br>Use the mouse or the arrow keys plus Pg Up, Pg Dn, Home, End, and 5 (on the numeric keypad with Num Lock off), to position the port ID display, then double-click or press **[Enter]** to lock the position and return to the Set submenu. |
| PORT ID DISPLAY DURATION | Determines how long a port ID displays on the monitor after a port change has taken place. The choices are: **3 Seconds** (default) and **Always Off**. |
| PORT ID DISPLAY MODE | Selects how the port ID is displayed: the port number plus the port name (**PORT NUMBER + PORT NAME**) (default); the port number alone (**PORT NUMBER**); or the port name alone (**PORT NAME**). |
| SCAN DURATION | Determines how long the focus dwells on each port as it cycles through the selected ports in Auto Scan mode (see *F7 SCAN*, page 37). Key in a value from 1–255 seconds, then press **[Enter]**. Default is 5 seconds; a setting of 0 disables the SCAN function. |

*(Continues on next page.)*

*(Continued from previous page.)*

| Setting | Function |
|---|---|
| SCAN–SKIP MODE | Selects which computers will be accessed under skip mode (see *F5 SKP*, page 36), and Auto Scan mode (see *F7 SCAN*, page 37. Choices are:<br><br>**ALL** - All the ports which have been set accessible (see *SET ACCESSIBLE PORTS*, page 33);<br><br>**QUICK VIEW** - Only those ports which have been set accessible and have been selected as quick view ports (see *SET QUICK VIEW PORTS*, page 35);<br><br>**POWERED ON** - Only those ports which have been set accessible and are powered on;<br><br>**QUICK VIEW + POWERED ON** - Only those ports which have been set accessible and have been selected as quick view ports and are powered on. The default is ALL.<br><br>Note:The quick view choices only show up on the administrator's screen, since only he has Quick View setting rights (see SET QUICK VIEW PORTS, page 35, for details). |
| SCREEN BLANKER | If there is no input from the console for the amount of time set with this function, the screen is blanked. Key in a value from 1–30 minutes, then press **[Enter]**. The default setting of 0 disables this function. |
| HOTKEY COMMAND MODE | Enables / disables the hotkey command function in case a conflict with programs running on the computers occurs. |
| HOTKEY | Sets the keyboard shortcut for invoking *Hotkey Mode* (see page 39). Choices are: **NUM LOCK +** - (minus) (default), and **CTRL + F12**. |
| TOUCHPAD | Enables / disables the touchpad function. |
| OSD LANGUAGE | Sets the language used in the OSD. Choices are: English (default), German, Japanese, Simplified Chinese and Traditional Chinese. |

## F4: ADM

F4 is an administrator only function. It allows the administrator to configure and control the overall operation of the OSD. To change a setting double-click it, or use the up and down arrow keys to move the highlight bar to it then press **[Enter]**.

After you select an item, a submenu with further choices to select from appears. Double-click an item, or move the highlight bar to it then press **[Enter]**. An icon appears before the selected item so that you know which one it is. The settings are explained in the following table:

| Setting | Function |
|---------|----------|
| SET USER LOGIN | This function is used to set usernames and passwords for the administrator and users: |
| | 1. Usernames and passwords for one administrator and four users can be set. |
| | 2. After you select the administrator field or one of the user fields, a screen that allows you to key in the username and password appears. Usernames and passwords can be from 1 to 16 characters long and can consist of any combination of letters and numbers (A–Z, 0–9) and some additional keys (* ( ) + : - , ? . / space). |
| | 3. For each individual, key in the username and password, confirm the password, then press **[Enter]**. |
| | 4. To modify or delete a previous username and/or password, use the backspace key to erase individual letters or numbers. Press **[Enter]** when done. |
| | **Note:** Usernames and passwords are not case sensitive. Usernames are displayed in capital letters in the OSD. |
| SET ACCESSIBLE PORTS | This function allows the administrator to define user access to the computers on the installation on a port-by-port basis. |
| | For each user, select the target port; then press the **[Spacebar]** to cycle through the choices: **F** (full access), **V** (view only), or blank. Repeat until all access rights have been set, then press **[Enter]**. The default is **F** for all users on all ports. |
| | **Note:** |
| | ◆ A blank setting means that no access rights are granted. The port will not show up on the user's LIST on the main screen. |
| | ◆ The administrator always has full access to all ports. |

*(Continued from previous page.)*

| Setting | Function |
|---------|----------|
| SET LOGOUT TIMEOUT | If there is no input from the console for the amount of time set with this function, the user is automatically logged out. A login is necessary before the console can be used again. |
| | This enables other users to gain access to the computers when the original user is no longer accessing them, but has forgotten to log out. To set the timeout value, key in a number from 1–180 minutes, then press **[Enter]**. The default setting of 0 disables this function. |
| | **Note:** This feature does not function if Set Login Mode is disabled. See *SET LOGIN MODE*, page 35. |
| EDIT PORT NAMES | To help remember which computer is attached to a particular port, every port can be given a name. This function allows the administrator to create, modify, or delete port names. |
| | To edit a port name: |
| | 1. Click the port, or use the navigation keys to move the highlight bar to it, then press **[Enter]**. |
| | 2. Key in the new port name, or modify/delete the old one. The maximum number of characters allowed for the port name is 12. Legal characters include: |
| | ◆ All alpha characters: **A**–**Z** |
| | ◆ All numeric characters: **0**–**9** |
| | ◆ **\* ( ) + : - , ? . /** and **Space** |
| | Case does not matter; the OSD displays the port name in all capitals no matter how they were keyed in. |
| | 3. When you have finished editing, press **[Enter]** to have the change take effect. To abort the change, press **[Esc]**. |
| RESTORE DEFAULT VALUES | This function is used to undo all changes and return the setup to the original factory default settings (see *OSD FACTORY DEFAULT SETTINGS*, page 64) except for the port name list, username and password information, which are saved. |
| CLEAR THE NAME LIST | This function clears the port name list. |
| ACTIVATE BEEPER | Choices are **Y** (on), or **N** (off). When activated, the beeper sounds whenever a port is changed; when activating the Auto Scan function (see *F7 SCAN*, page 37); or an invalid entry is made on an OSD menu. The default is **Y**. |

*(Continues on next page.)*

*(Continued from previous page.)*

| Setting | Function |
|---|---|
| SET QUICK VIEW PORTS | This function lets the administrator select which ports to include as quick view ports.<br><br>◆ To select/deselect a port as a quick view port, double-click the port, or use the navigation keys to move the highlight bar to it, then press **[Spacebar]**.<br><br>◆ When a port has been selected as a quick view port, an icon displays in the QV column of the LIST on the main screen. When a port is deselected, the icon disappears.<br><br>◆ If one of the quick view options is chosen for the LIST view (see *F2 LIST*, page 30), only a port that has been selected here will display on the list.<br><br>◆ If one of the quick view options is chosen for auto-scanning (see *SCAN/SKIP MODE*, page 32), only a port that has been selected here will be auto-scanned.<br><br>The default has no ports selected for quick view. |
| SET OPERATING SYSTEM | This function allows the administrator to define the operating system for the computer connected to each KVM port. The default is WIN (PC compatible).<br><br>**To set the port operating system**:<br><br>1. From the list, select the port for which you wish to set the computer's operating system.<br><br>2. Set the operating system by pressing **[Spacebar]** to cycle through WIN, MAC, SUN, or OTHER.<br><br>3. Press **[Esc]** to exit. The operating system you selected is assigned to the KVM port. |
| FIRMWARE UPGRADE | In order to upgrade the CL3108 / CL3116 firmware (see page 52), you must first enable Firmware Upgrade mode with this setting.<br><br>When you bring up this menu, the current firmware version levels are displayed. Select **Y** to enable Firmware Upgrade mode, or **N** to leave this menu without enabling it. |
| SET KEYBOARD LANGUAGE | Sets the language for the computer keyboard attached to the KVM port. To select a keyboard language, double-click it, or use the navigation keys to move the highlight bar to it, then press **[Enter]**.<br><br>Choices are: AUTO (default), ENGLISH (UK), ENGLISH (US), GERMAN (GER.), GERMAN (SWISS), FRENCH, HUNGARIAN, ITALIAN, JAPANESE, KOREAN, RUSSIAN, SPANISH, SWEDISH, and TRADITIONAL CHINESE. |
| SET LOGIN MODE | This function allows the administrator to request users to login or not. When the login dialog box is disabled, the system disables the login/logout function. If the system is re-started, the login/logout function remains disabled. |

## Manufacturing Number

The "MFG Number" (Manufacturing Number) is an internal serial number used by ATEN's factory and technical support staff to identify products. This number does not affect products' warranty. If your product requires after-sales services, you may provide the MFG Number to ATEN's sales or technical support staff to identify the product and model number. It can be found when you start firmware upgrade as in *FIRMWARE UPGRADE* on page 35.

## F5: SKP

Clicking the **F5** field or pressing **[F5]** invokes Skip (SKP) mode. This function enables you to easily skip backward or forward – switching the console focus from the currently active computer port to the previous or next available one.

◆ The selection of computers to be available for skip mode switching is made with the *Scan–Skip* mode setting under the **F3: SET** function (see page 31).

◆ When you are in skip mode:

press [ ← ] to switch to the previous computer in the list

press [ → ] to switch to the next computer in the list

---

**Note:**  When you skip, you only skip to the previous or next available computer that is in the Scan–Skip mode selection (page 32).

---

◆ If a port has been selected for *Scan–Skip* mode, when the focus switches to that port a left/right triangle symbol appears before its port ID display.

◆ While skip mode is in effect, the console will not function normally. You must exit skip mode in order to regain control of the console.

◆ To exit skip mode, press **[Spacebar]** or **[Esc]**.

## F6: BRC

F6 is an administrator only function. Clicking the **F6** field, or pressing **[F6]**, invokes *Broadcast* (BRC) mode. When this function is in effect, commands sent from the console are broadcast to all available computers on the installation.

This function is particularly useful for operations that need to be performed on multiple computers, such as performing a system wide shutdown, installing or upgrading software, etc.

◆ While BRC mode is in effect, a speaker symbol appears before the port ID display of the port that currently has the console focus.

- While BRC mode is in effect, the mouse will not function normally. You must exit BRC mode in order to regain control of the mouse.

- To exit BRC mode, invoke the OSD (with the OSD hotkey), then click the **F6** field, or press **[F6]**, to turn BRC mode off and the speaker symbol will disappear.

## F7: AUTO SCAN

Clicking the **F7** field or pressing **[F7]** invokes *Auto Scan* mode. This function allows you to automatically switch among the available computers at regular intervals so that you can monitor their activity without having to take the trouble of switching yourself.

- The selection of computers to be included for auto-scanning is made with the *Scan–Skip* mode setting under the **F3: SET** function (see page 32).

- The amount of time that each port displays for is set with the *Scan Duration* setting under the **F3: SET** function (see page 31). When you want to stop at a particular location, press the [Spacebar] to stop scanning.

- If the scanning stops on an empty port, or one where the computer is attached but is powered Off, the monitor screen will be blank, and the mouse and keyboard will have no effect. After the *Scan Duration* time is up, the scan function will move on to the next port.

- As each computer is accessed, an **S** appears in front of the port ID display to indicate that it is being accessed under *Auto Scan* mode.

- While *Auto Scan* mode is in effect, the console will not function normally. You must exit *Auto Scan* mode in order to regain control of the console.

- While you are in *Auto Scan* mode, you can pause the scanning in order to keep the focus on a particular computer either by pressing **P**, or with a left-click of the mouse. See *Invoking Auto Scan*, page 41, for details.

- To exit *Auto Scan* mode, press the **[Spacebar]** or **[Esc]**.

## F8: LOUT

Clicking the **F8** field, or pressing **[F8]** logs you out of OSD control of the computers, and blanks the console screen. This is different from simply pressing **[Esc]** when you are at the main screen to deactivate the OSD. With this function you must log in all over again to regain access to the OSD, whereas with **[Esc]**, all you have to do to reenter the OSD is tap the OSD hotkey.

**Note:** 1. When you reenter the OSD after logging out, the screen stays blank except for the OSD main screen. You must input your username and password before you can continue.

2. If you reenter the OSD after logging out, and immediately use [Esc] to deactivate the OSD without having selected a port from the OSD menu, a null port message displays on the screen. The OSD hotkey will bring up the main OSD screen.

# Chapter 5
# Keyboard Port Operation

## Hotkey Port Control

Hotkey port control allows you to provide KVM focus to a particular computer directly from the keyboard. The CL3108 / CL3116 provides the following hotkey port control features:

- Selecting the Active Port
- Auto Scan Mode Switching
- Skip Mode Switching
- Computer Keyboard / Mouse Reset

The following settings can also be controlled in *Hotkey* mode:

- Setting the Beeper
- Setting the Quick Hotkey
- Setting the OSD Hotkey
- Setting the Port Operating System
- Restoring the OSD Default Values

## Invoke Hotkey Mode

All hotkey operations begin by invoking *Hotkey* mode. There are two possible keystroke sequences used to invoke *Hotkey* mode, though only one can be operational at any given time.

**Note:** Make sure that the *Hotkey Command Mode* function is enabled and that you key in the appropriate *Hotkey*. See page 32 for details.

## Dedicated Invocation Key

A dedicated key is provided on the keyboard module to make it easy to invoke the Hotkey Mode (as shown in the diagram below):

**Note:** Press once to invoke the feature; press again to exit.

### Number Lock and Minus Keys

1. Hold down the **Num Lock** key;

2. Press and release the **minus** key;

3. Release the **Num Lock** key:

```
[Num Lock] + [-]
```

### Control and F12 Keys

1. Hold down the **Ctrl** key;

2. Press and release the **F12** key;

3. Release the **Ctrl** key:

```
[Ctrl] + [F12]
```

When *Hotkey* mode is active:

◆ A command line appears on the monitor screen. The command line prompt is the word *Hotkey:* in white text on a blue background, and displays the subsequent hotkey information that you key in.

◆ Ordinary keyboard and mouse functions are suspended – only hotkey compliant keystrokes (described in the sections that follow), can be input.

Pressing **[Esc]** exits *Hotkey* mode.

# Select the Active Port

Each KVM port is assigned a port ID (see *Port ID Numbering*, page 25). You can directly access any computer on the installation with a hotkey combination that specifies the port ID of the KVM port that a computer is connected to. To access a computer using hotkeys:

1. Invoke hotkey mode with the **[Num Lock]** + **[-]** or **[Ctrl]** + **[F12]** combination.

2. Key in the port ID.

   The port ID numbers display on the command line as you key them in. If you make a mistake, use **[Backspace]** to erase the wrong number.

3. Press **[Enter]**.

   After you press [Enter], the KVM focus switches to the designated computer and you automatically exit hotkey mode.

---

**Note:** In hotkey mode, KVM focus will not switch to a port if an invalid switch or port number is entered. The hotkey command line will continue to display on the screen until you enter a valid switch and port number combination, or exit hotkey mode.

---

# Auto Scan Mode

*Auto Scan* automatically switches, at regular intervals, among all the KVM ports that have been set as accessible under *Scan–Skip Mode*, so that their activity can be monitored automatically. See *Scan–Skip Mode* on page 32 for more information.

## Invoking Auto Scan:

To start *Auto Scan*, key in the following Hotkey combination:

1. Invoke hotkey mode with the **[Num Lock]** + **[-]** or **[Ctrl]** + **[F12]** combination.

2. Press **[A]**. After you press **A**, then **[Enter]**, you automatically exit hotkey mode, and enter *Auto Scan* mode.

   ◆ While you are in *Auto Scan* mode, you can pause the scanning in order to keep the focus on a particular computer either by pressing **P** or with a left click of the mouse. During the time that auto-scanning is paused, the command line displays: **Auto Scan**: **Paused**.

*Pausing* when you want to keep the focus on a particular computer is more convenient than exiting *Auto Scan* mode because when you resume scanning, you start from where you left off. If, on the other hand, you exited and restarted, scanning would start over from the very first computer on the installation.

To resume Auto Scanning, press any key or left-click. Scanning continues from where it left off.

◆ While *Auto Scan* mode is in effect, ordinary keyboard and mouse functions are suspended – only *Auto Scan* mode compliant keystrokes and mouse clicks can be input. You must exit *Auto Scan* mode in order to regain normal control of the console.

**Note:** Auto Scan duration could be adjusted via OSD menu.

3. To exit *Auto Scan* mode press **[Esc]** or **[Spacebar]**. Auto-scanning stops when you exit *Auto Scan* mode.

# Skip Mode

This feature allows you to switch between computers in order to monitor them manually. You can dwell on a particular port for as long as you like – as opposed to auto-scanning, which automatically switches after a fixed interval. To invoke *Skip* mode, key in the following hotkey combination:

1. Invoke hotkey mode with the **[Num Lock]** + **[-]** or **[Ctrl]** + **[F12]** combination.

2. Key in **[Arrow]**

   - Where [Arrow] refers to one of the arrow keys. After you press an arrow, you automatically exit hotkey mode and enter *Skip* mode where you can switch ports as follows:

     | | |
     |---|---|
     | ← | Skips to the first accessible port. (See *Scan/Skip Mode*, page 32, for information regarding accessible ports.) |
     | → | Skips to the next accessible port. |

   - Once you are in *Skip* mode, you can keep on skipping by pressing the arrow keys. You don't have to use the [Num Lock] + [-] combination again.

   - While *Skip* mode is in effect, ordinary keyboard and mouse functions are suspended – only *Skip* mode compliant keystrokes can be input. You must exit *Skip* mode in order to regain normal control of the console.

3. To exit *Skip* mode, press **[Esc]** or **[Spacebar]**.

# Computer Keyboard / Mouse Reset

If the keyboard or mouse cease to function on the computer connected to the currently selected port, you can perform a keyboard / mouse reset on the computer. This function is essentially the same as unplugging and replugging the keyboard and mouse on the target computer. To perform a computer keyboard / mouse reset, key in the following hotkey combination:

1. Invoke hotkey mode with the **[Num Lock]** + **[-]** or **[Ctrl]** + **[F12]** combination.

2. Press **[F5].**

After you press [F5] you automatically exit *Hotkey* mode and regain keyboard and mouse control on the computer connected to the KVM port. If you fail to regain keyboard / mouse control on the computer after pressing [F5], perform a console keyboard and mouse reset. For more information see *port selection pushbutton / LEDs (8 for CL3108, 16 for CL3116)*, page 5.

# Hotkey Beeper Control

The beeper (see Activate Beeper, page 34) can be hotkey toggled on and off. To toggle the beeper, key in the following hotkey combination:

1. Invoke hotkey mode with the **[Num Lock]** + **[-]** or **[Ctrl]** + **[F12]** combination.

2. Press **[B]**.

After you press [B], the beeper toggles on or off. The command line displays *Beeper On* or *Beeper Off* for one second; then the message disappears and you automatically exit hotkey mode.

# Quick Hotkey Control

The *Quick Hotkey* (see *HOTKEY*, page 32) can be toggled between
[Num Lock] + [-], and [Ctrl] + [F12]. To toggle the *Quick Hotkey*:

1. Invoke hotkey mode with the **[Num Lock]** + **[-]** or **[Ctrl]** + **[F12]**
   combination.

2. Press **[H]**.

After you press [H], the command line displays *HOTKEY HAS BEEN
CHANGED* for one second; then the message disappears and you
automatically exit *Hotkey* mode.

# OSD Hotkey Control

The *OSD hotkey* (see *OSD HOTKEY*, page 31) can be toggled between OFF,
[Scroll Lock] [Scroll Lock], or [Ctrl] [Ctrl]. To toggle the *OSD Hotkey*, key in
the following hotkey combination:

1. Invoke hotkey mode with the **[Num Lock]** + **[-]** or **[Ctrl]** + **[F12]**
   combination.

2. Press **[T]**.

After you press [T], the command line displays *HOTKEY HAS BEEN
CHANGED* for one second; then the message disappears and you
automatically exit *Hotkey* mode.

# Port OS Control

A port's operating system can be changed to match that of the computer attached to the port. To change a port's operating system, key in the following hotkey combination:

1. Invoke hotkey mode with the **[Num Lock]** + **[-]** or **[Ctrl]** + **[F12]** combination.

2. Key in **[Function]**, where [Function] refers to one of the function keys in the following table:

| Key | Description |
|-----|-------------|
| F1 | Sets the Port OS to Windows |
| F2 | Sets the Port OS to Mac |
| F3 | Sets the Port OS to Sun |

After pressing a function key you automatically exit *Hotkey* mode.

# Set USB Speed

Users can use hotkeys to set the USB speed of the selected KVM port to low/full speed to comply with the connected computers.

1. Invoke Hotkey mode (see *Invoke Hotkey Mode* on page 39).

2. Press **[F11]**

3. Key in **[Function]**, where [Function] refers to one of the function keys in the following table:

| Key | Description |
|-----|-------------|
| L | Set the KVM port to low speed USB |
| F | Set the KVM port to full speed USB |

4. Press **[Enter]**.

To set all KVM ports of the selected KVM station, add an [A] after the function key: Under Hotkey mode, press **[F11][L][A][Enter]** or **[F11][F][A][Enter]**.

# Restore Default Values

This administrator only hotkey restores the CL3108 / CL3116 default values. See *RESTORE DEFAULT VALUES*, page 34. To restore the default values, key in the following hotkey combination:

1. Invoke hotkey mode with the **[Num Lock]** + **[-]** or **[Ctrl]** + **[F12]** combination.

2. Press **[R]**.

3. Press **[Enter]**.

   After you press [Enter], the command line displays *RESET TO DEFAULT SETTING* for three seconds; then the message disappears and you automatically exit *Hotkey* mode.

# Hotkey Summary Table

| Invoke HSM | Hotkey | Action |
|---|---|---|
| [Scroll] + [Scroll] | [ScrollLock] [ScrollLock] | Activates OSD mode.<br>Tap [Esc] to close the OSD and go back to the normal PC operation. |
| [Num Lock] + [-] or [Ctrl] + [F12] | [A] / [a] [Enter] | Invokes *Auto Scan* mode. The KVM focus cycles from port to port at 5-second intervals.<br>Auto Scan duration could be adjusted via OSD menu.<br>When *Auto Scan* mode is in effect, [P] or left-click pauses auto-scanning.<br>When auto-scanning is paused, pressing any key or another left-click resumes auto-scanning. |
| | [Port ID] [Enter] | Switches access to the computer that corresponds to that Port ID (CL3108: 01-08; CL3116: 01-16). |
| | [B] | Toggles the beeper on or off. (Default Setting is On) |
| | [Esc] or [Spacebar] | Exits hotkey mode or to quit the Setting Mode. |
| | [F1] | Set Windows keyboard emulation. (Default Setting) |
| | [F2] | Set Mac keyboard emulation. |
| | [F3] | Set Sun keyboard emulation. |
| | [F5] | Performs a keyboard / mouse reset on the target computer. |
| | [H] / [h] | Toggles the *Quick Hotkey* invocation keys between [Ctrl] + [F12] and [Num Lock] + [-]. |
| | [R] / [r] [Enter] | This administrator only hotkey restores the switch's default values. See *RESTORE DEFAULT VALUES*, page 34. |
| | [F11] [F] [Enter] | Set the selected KVM port to full speed USB |
| | [F11] [L] [Enter] | Set the selected KVM port to low speed USB |
| | [F11] [F] [A] [Enter] | Set the selected KVM station to full speed USB |
| | [F11] [L] [A] [Enter] | Set the selected KVM station to low speed USB |
| | [T] / [t] | Toggles the *OSD hotkey* between OFF, [Ctrl] [Ctrl], or [Scroll Lock] [Scroll Lock]. |
| | [←] | Invokes *Skip* mode and skips from the current port to the first accessible port previous to it. |
| | [→] | Invokes *Skip* mode and skips from the current port to the next accessible port. |

# Chapter 6
# Keyboard Emulation

## Mac Keyboard

The PC compatible (101/104 key) keyboard can emulate the functions of the Mac keyboard. The emulation mappings are listed in the table below.

| PC Keyboard | Mac Keyboard |
|---|---|
| [Shift] | Shift |
| [Ctrl] | Ctrl |
| ⊞ | ⌘ |
| [Ctrl] [1] | 🔇 |
| [Ctrl] [2] | 🔉 |
| [Ctrl] [3] | 🔊 |
| [Ctrl] [4] | ⏏ |
| [Alt] | Alt |
| [Print Screen] | F13 |
| [Scroll Lock] | F14 |
| 🗒 | = |
| [Enter] | Return |
| [Backspace] | Delete |
| [Insert] | Help |
| [Ctrl] ⊞ | F15 |

**Note:** When using key combinations, press and release the first key (Ctrl), then press and release the activation key.

# Sun Keyboard

The PC compatible (101/104 key) keyboard can emulate the functions of the
Sun keyboard when the control key [Ctrl] is used in conjunction with other
keys. The corresponding functions are shown in the table below.

| PC Keyboard | Sun Keyboard |
|---|---|
| [Ctrl] [T] | Stop |
| [Ctrl] [F2] | Again |
| [Ctrl] [F3] | Props |
| [Ctrl] [F4] | Undo |
| [Ctrl] [F5] | Front |
| [Ctrl] [F6] | Copy |
| [Ctrl] [F7] | Open |
| [Ctrl] [F8] | Paste |
| [Ctrl] [F9] | Find |
| [Ctrl] [F10] | Cut |
| [Ctrl] [1] | ▭▭ ◀ |
| [Ctrl] [2] | ◑ - ◀ |
| [Ctrl] [3] | ◑ + ◀)) |
| [Ctrl] [4] | ☾ |
| [Ctrl] [H] | Help |
| 🗒 | Compose |
| ⊞ | ◆ |

**Note:** When using key combinations, press and release the first key (Ctrl),
then press and release the activation key.

# Chapter 7
# The Firmware Upgrade Utility

## Introduction

The purpose of the Windows-based Firmware Upgrade Utility is to provide an automated process for upgrading all CL3108 / CL3116 switches in an installation. The program comes as part of a Firmware Upgrade Package that is specific for each device.

As new firmware versions become available, new firmware upgrade packages are posted on our website. Check the website regularly to find the latest information and packages.

### Downloading the Firmware Upgrade Package

To download the firmware upgrade package:

1. From a computer that is not part of your KVM installation go to our ATEN website and choose the model name that relates to your device. A list of available firmware upgrade packages appears.

2. Choose the firmware upgrade package that you wish to install (usually the most recent) and download it to your computer.

# Preparation

To prepare for the firmware upgrade, do the following:

1. Use the *firmware upgrade cable* provided with this unit to connect a COM port on your computer to the *firmware upgrade port* of your CL3108 / CL3116.

**Note:** Slide your firmware upgrade switch to Normal position for upgrade.
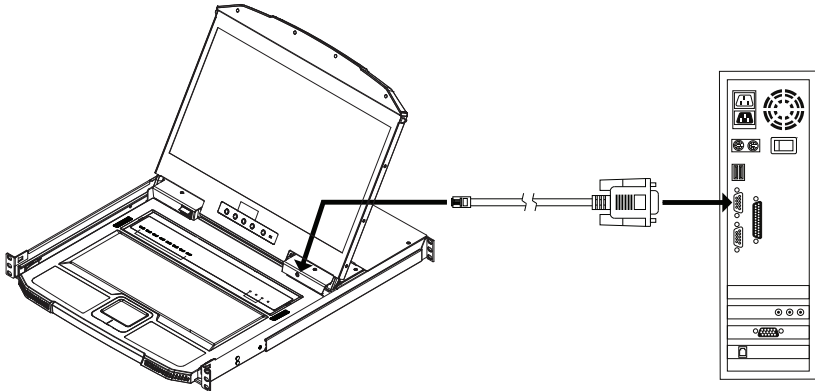


2. Shut down all the computers on the KVM installation.

3. From your KVM switch console, login to the OSD as the administrator (see page 27) and select the **F4 ADM** function.

4. Scroll down to FIRMWARE UPGRADE. Press **[Enter]**, then press **[Y]** to invoke *Firmware Upgrade* Mode (see page 35)

# Starting the Upgrade

To upgrade the firmware:

1. Run the downloaded firmware upgrade package file either by double-clicking the file icon, or by opening a command line and entering the full path to it.

   The *Firmware Upgrade Utility* welcome screen appears:



---
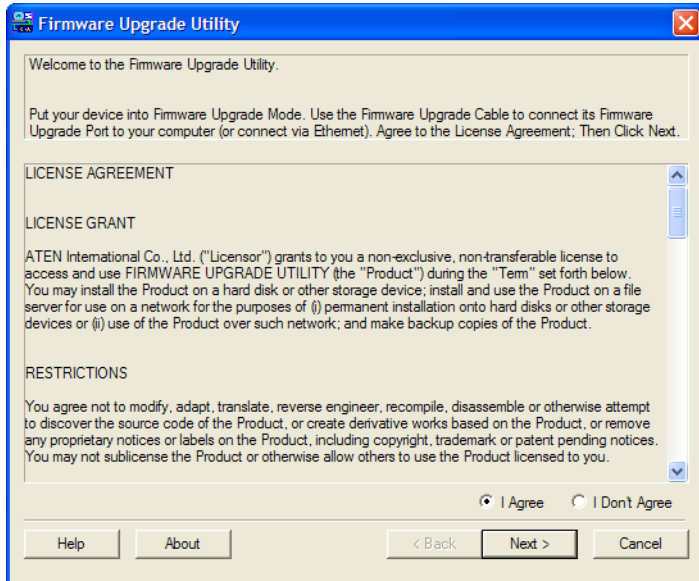
**Note:** The screens shown in this section are for reference only. The wording and layout of the actual screens put up by the Firmware Upgrade Utility may vary slightly from these examples.

---

2. Read and *Agree* to the License Agreement (enable the I Agree radio button).

3. Click **Next** to continue. The *Firmware Upgrade Utility* main screen appears. The devices capable of being upgraded are listed in the *Device List* panel:
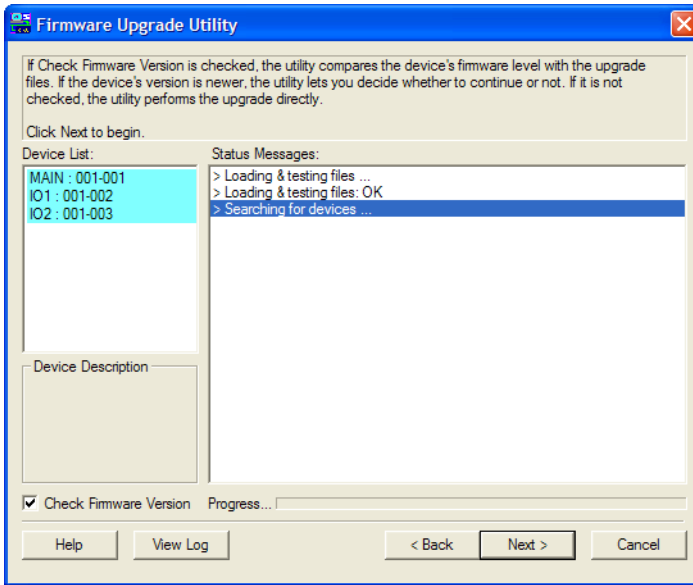
4.  Click **Next** to perform the upgrade.

    If you enabled *Check Firmware Version*, the Utility compares the device's firmware level with that of the upgrade files. If it finds that the device's version is higher than the upgrade version, it brings up a dialog box informing you of the situation and gives you the option to continue or cancel.
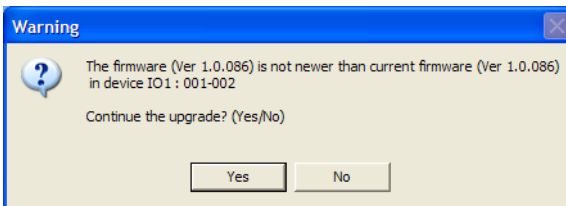


    If you didn't enable *Check Firmware Version*, the Utility installs the upgrade files without checking whether they are a higher level, or not.

    As the upgrade proceeds, status messages appear in the *Status Messages* panel, and the progress toward completion is shown on the *Progress* bar.

# Upgrade Succeeded

After the upgrade has completed, a screen appears to inform you that the procedure was successful.
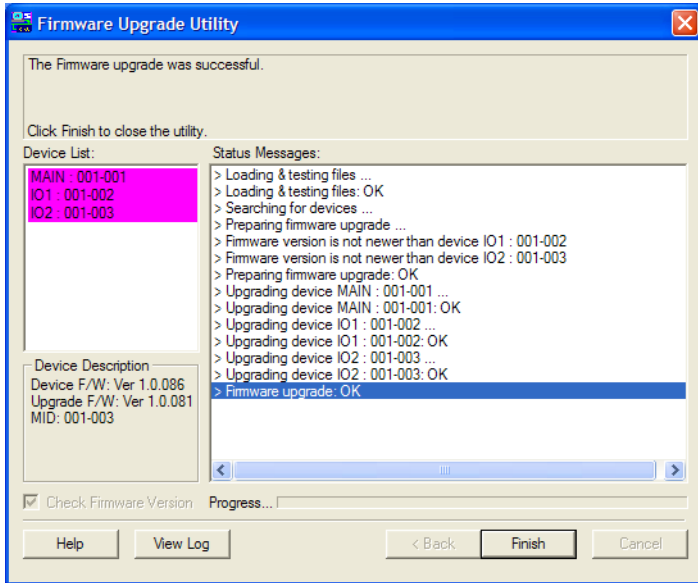


Click **Finish** to close the *Firmware Upgrade Utility*.

# Upgrade Failed

If the firmware upgrade fails (*Upgrade Succeeded* screen does not appear), you can recover the situation.

Possible reasons for firmware upgrade failure are:

◆ When a firmware upgrade was manually aborted.

◆ When the unit's firmware becomes corrupted for some reason and you are unable to operate it.

◆ When a firmware upgrade procedure is interrupted.

◆ When a firmware upgrade procedure fails.

To recover a failed firmware upgrade, do the following:

1. Power off the unit.

2. Connect the *firmware upgrade cable* to its *firmware upgrade port*.

3. Slide the *firmware upgrade switch* to the **Recover** position.

4. Power the unit back on and repeat the upgrade procedure (see *Starting the Upgrade* on page 53).

5. After the unit has been successfully upgraded, power it off, and slide the *firmware upgrade switch* back to the **Normal** position.

6. Power the unit back on again.

# Appendix

## Safety Instructions

### General

- This product is for indoor use only.

- Read all of these instructions. Save them for future reference.

- Follow all warnings and instructions marked on the device.

- Do not place the device on any unstable surface (cart, stand, table, etc.). If the device falls, serious damage will result.

- Do not use the device near water.

- Do not place the device near, or over, radiators or heat registers.

- The device cabinet is provided with slots and openings to allow for adequate ventilation. To ensure reliable operation, and to protect against overheating, these openings must never be blocked or covered.

- The device should never be placed on a soft surface (bed, sofa, rug, etc.) as this will block its ventilation openings. Likewise, the device should not be placed in a built in enclosure unless adequate ventilation has been provided.

- Never spill liquid of any kind on the device.

- Unplug the device from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.

- The device should be operated from the type of power source indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.

- The device is designed for IT power distribution systems with 230V phase-to-phase voltage.

- To prevent damage to your installation it is important that all devices are properly grounded.

- The device is equipped with a 3-wire grounding type plug. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not attempt to defeat the purpose of the grounding-type plug. Always follow your local/national wiring codes.

- Do not allow anything to rest on the power cord or cables. Route the power cord and cables so that they cannot be stepped on or tripped over.

- If an extension cord is used with this device make sure that the total of the ampere ratings of all products used on this cord does not exceed the extension cord ampere rating. Make sure that the total of all products plugged into the wall outlet does not exceed 15 amperes.

- To help protect your system from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or un-interruptible power supply (UPS).

- Position system cables and power cables carefully; Be sure that nothing rests on any cables.

- Never push objects of any kind into or through cabinet slots. They may touch dangerous voltage points or short out parts resulting in a risk of fire or electrical shock.

- Do not attempt to service the device yourself. Refer all servicing to qualified service personnel.

- If the following conditions occur, unplug the device from the wall outlet and bring it to qualified service personnel for repair.
  - The power cord or plug has become damaged or frayed.
  - Liquid has been spilled into the device.
  - The device has been exposed to rain or water.
  - The device has been dropped, or the cabinet has been damaged.
  - The device exhibits a distinct change in performance, indicating a need for service.
  - The device does not operate normally when the operating instructions are followed.

- Only adjust those controls that are covered in the operating instructions. Improper adjustment of other controls may result in damage that will require extensive work by a qualified technician to repair.

- Avoid circuit overloads. Before connecting equipment to a circuit, know the power supply's limit and never exceed it. Always review the electrical specifications of a circuit to ensure that you are not creating a dangerous condition or that one doesn't already exist. Circuit overloads can cause a fire and destroy equipment.

## Rack Mounting

- Before working on the rack, make sure that the stabilizers are secured to the rack, extended to the floor, and that the full weight of the rack rests on the floor. Install front and side stabilizers on a single rack or front stabilizers for joined multiple racks before working on the rack.

- Always load the rack from the bottom up, and load the heaviest item in the rack first.

- Make sure that the rack is level and stable before extending a device from the rack.

- Do not overload the AC supply branch circuit that provides power to the rack. The total rack load should not exceed 80 percent of the branch circuit rating.

- Make sure that all equipment used on the rack – including power strips and other electrical connectors – is properly grounded.

- Ensure that proper airflow is provided to devices in the rack.

- Ensure that the operating ambient temperature of the rack environment does not exceed the maximum ambient temperature specified for the equipment by the manufacturer

- Do not step on or stand on any device when servicing other devices in a rack.

- **Caution:** Slide/rail (LCD KVM) mounted equipment is not to be used as a shelf or a work space.

# Technical Support

## International

* For online technical support – including troubleshooting, documentation, and software updates: **http://support.aten.com**

* For telephone support, see *Telephone Support*, page iii:

## North America

| Email Support | | support@aten-usa.com |
|---|---|---|
| Online Technical Support | Troubleshooting Documentation Software Updates | http://www.aten-usa.com/support |
| Telephone Support | | 1-888-999-ATEN ext 4988 |
| | | 1-949-428-1111 |

When you contact us, please have the following information ready beforehand:

* Product model number, serial number, and date of purchase.

* Your computer configuration, including operating system, revision level, expansion cards, and software.

* Any error messages displayed at the time the error occurred.

* The sequence of operations that led up to the error.

* Any other information you feel may be of help.

# Specifications

| Function | | CL3108NX | CL3116NX |
|---|---|---|---|
| Computer Connections | Direct | 8 | 16 |
| | Max. | 128 (via cascade) | 256 (via cascade) |
| Port Selection | | OSD, Hotkey, Pushbutton | |
| Connectors | KVM Ports | 8 x SPHD-18 Female (Yellow) | 16 x SPHD-18 Female (Yellow) |
| | USB Port | 1 x USB Type A Female | |
| | F/W Upgrade | 1 x 3.5 mm Audio Jack Female (Black) | |
| | Power | 1 x 3-prong AC Socket | |
| Switches | Rest | 1 x Semi-recessed Pushbutton | |
| | Power | 1 x Rocker | |
| | Firmware Upgrade | 1 x Slide | |
| | LCD Control | 4 x Pushbutton | |
| | LCD On/Off | 1 x Pushbutton | |
| | Port Selection | 8 x Pushbutton | 16 x Pushbutton |
| LEDs | On Line | 8 (Orange) | 16 (Orange) |
| | Selected | 8 (Green) | 16 (Green) |
| | Power | KVM | 1 (Dark Green) |
| | | LCD | 1 (Orange) |
| | Lock | Num | 1 (Green) |
| | | Caps | 1 (Green) |
| | | Scroll | 1 (Green) |
| Emulation | Keyboard / Mouse | PS/2, USB | |
| Video | Input Video Resolution | 1920 x 1200 @ 60 Hz | |
| Panel Spec | LCD Module | 18.5" TFT-LCD | |
| | Resolution | 1366 x 768 @ 60 Hz | |
| | Response Time | 5 ms | |
| | Viewing Angle | 170º (H), 160º (V) | |
| | Pixel Pitch | 0.3 mm x 0.3 mm | |
| | Support Color | 16.7M colors | |
| | Contrast Ratio | 1000 : 1 | |
| | Luminance | 250 cd/m$^2$ | |

| Function | | CL3108NX | CL3116NX |
|---|---|---|---|
| Scan Interval | | 1 – 255 Seconds | |
| Maximum Input Power Rating | | AC 100 - 240 V; 50 - 60 Hz; 1 A | |
| Power Consumption | | AC 110 V : 14.1 W : 70 BTU | AC 220 V : 14.9 W : 74 BTU |
| Environment | Operating Temp. | 0 – 40 ºC | |
| | Storage Temp | -20 – 60 ºC | |
| | Humidity | 0–80% RH, Non-condensing | |
| Physical Properties | Housing | Metal + Plastic | |
| | Weight | 10.5 kg | 10.6 kg |
| | Body Dimensions (L x W x H) | 48.06 x 63.17 x 4.28 cm (18.92 x 24.87 x 1.69 in.) | |
| | Dimensions (L x W x H) | 44.92 x 58.4 x 4.28 cm (17.69 x 23 x 1.69 in.) | |

**Note:** 1. For some rack mount products, please note that the standard physical dimensions of WxDxH are expressed using a LxWxH format.

2. Body Dimensions exclude I/O ports, handles, and mounting brackets.

# Connection Tables

The following tables indicate the relationship between the number of switches and the maximum number of computers that they can control.

## CL3108 to Compatible 8-Port Switches

| Switches | Computers | Switches | Computers | Switches | Computers |
|----------|-----------|----------|-----------|----------|-----------|
| 1 | 8 | 4 | 29 | 7 | 50 |
| 2 | 15 | 5 | 36 | 8 | 57 |
| 3 | 22 | 6 | 43 | 9 | 64 |

## CL3108 to Compatible 16-Port Switches

| Switches | Computers | Switches | Computers | Switches | Computers |
|----------|-----------|----------|-----------|----------|-----------|
| 1 | 8 | 4 | 53 | 7 | 98 |
| 2 | 23 | 5 | 68 | 8 | 113 |
| 3 | 38 | 6 | 83 | 9 | 128 |

## CL3116 to Compatible 8-Port Switches

| Switches | Computers | Switches | Computers | Switches | Computers |
|----------|-----------|----------|-----------|----------|-----------|
| 1 | 16 | 7 | 58 | 13 | 100 |
| 2 | 23 | 8 | 65 | 14 | 107 |
| 3 | 30 | 9 | 72 | 15 | 114 |
| 4 | 37 | 10 | 79 | 16 | 121 |
| 5 | 44 | 11 | 86 | 17 | 128 |
| 6 | 51 | 12 | 93 | – | – |

## CL3116 to Compatible 16-Port Switches

| Switches | Computers | Switches | Computers | Switches | Computers |
|----------|-----------|----------|-----------|----------|-----------|
| 1 | 16 | 7 | 106 | 13 | 196 |
| 2 | 31 | 8 | 121 | 14 | 211 |
| 3 | 46 | 9 | 136 | 15 | 226 |
| 4 | 61 | 10 | 151 | 16 | 241 |
| 5 | 76 | 11 | 166 | 17 | 256 |
| 6 | 91 | 12 | 181 | – | – |

## Supported KVM Switches

The CL3108 / 3116 is compatible with a number of ATEN Rack KVM and Cat 5 KVM switches. For a list of compatible models, please refer to the Compatible Products section on the product web page.

# OSD Factory Default Settings

The factory default settings are as follows:

| Setting | Default |
|---|---|
| OSD Hotkey | [Scroll Lock] [Scroll Lock] |
| Port ID Display Position | Upper Left Corner |
| Port ID Display Duration | 3 Seconds |
| Port ID Display Mode | Port Number plus Port Name |
| Scan Duration | 5 Seconds |
| Scan-Skip Mode | All |
| Screen Blanker | 0 (Disabled) |
| Logout Timeout | 0 (Disabled) |
| Beeper | Y (Activated) |
| Accessible Ports | F (Full) For all Users on all Ports |

# About SPHD Connectors

This product uses SPHD connectors for its KVM and/or Console ports. We have specifically modified the shape of these connectors so that only KVM cables that we have designed to work with this product can be connected.

# Troubleshooting

Operation problems can be due to a variety of causes. The first step in solving them is to make sure that all cables are securely attached and seated completely in their sockets.

In addition, updating the product's firmware may solve problems that have been discovered and resolved since the prior version was released. If your product is not running the latest firmware version, we strongly recommend that you upgrade. See *The Firmware Upgrade Utility*, page 51, for upgrade details.

| Symptom | Possible Cause | Action |
|---------|----------------|--------|
| Erratic behavior. | Unit not receiving enough power. | Check that the power adapter that was supplied with the unit is plugged in and functioning properly. |

# Limited Warranty

ATEN warrants its hardware in the country of purchase against flaws in materials and workmanship for a Warranty Period of two [2] years (warranty period may vary in certain regions/countries) commencing on the date of original purchase. This warranty period includes the LCD panel of ATEN LCD KVM switches. Select products are warranted for an additional year (see *A+ Warranty* for further details). Cables and accessories are not covered by the Standard Warranty.

**What is covered by the Limited Hardware Warranty**
ATEN will provide a repair service, without charge, during the Warranty Period. If a product is detective, ATEN will, at its discretion, have the option to (1) repair said product with new or repaired components, or (2) replace the entire product with an identical product or with a similar product which fulfills the same function as the defective product. Replaced products assume the warranty of the original product for the remaining period or a period of 90 days, whichever is longer. When the products or components are replaced, the replacing articles shall become customer property and the replaced articles shall become the property of ATEN.

To learn more about our warranty policies, please visit our website:
http://www.aten.com/global/en/legal/policies/warranty-policy/