



**8/16-Port Short Depth PS/2-USB VGA Single Rail
WideScreen LCD KVM Switch
CL3108 / CL3116**

User Manual



EMC Information

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.

CE Warning: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

KCC Statement

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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
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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

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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.

Package Contents

The CL3108 / CL3116 package consists of:

- ◆ 1 CL3108 / CL3116 LCD KVM Switch with Standard Rack Mount Kit
- ◆ 1 Power Cord
- ◆ 2 Custom KVM Cables (VGA, USB; 1.8m/6ft)
- ◆ 1 Firmware Upgrade cable
- ◆ 1 User Instructions*

-
- Note:**
1. Check to make sure that all the components are present and that nothing got damaged in shipping. If you encounter a problem, contact your dealer.
 2. Read this manual thoroughly and follow the installation and operation procedures carefully to prevent any damage to the unit, and/or any of the devices connected to it.
-

* Features may have been added to the CL3108 / CL3116 since this manual was published. Please visit our website to download the most up-to-date version of the manual.

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Contents

EMC Information	ii
RoHS	ii
User Information	iii
Online Registration	iii
Telephone Support	iii
User Notice	iii
Package Contents	iv
About this Manual	viii
Conventions	ix
Product Information	ix
1. Introduction	
Overview	1
Features	2
Space Utility Optimization	2
Reliability and Operational Versatility	2
Installation Flexibility	3
Requirements	4
Computers	4
Cables	4
Operating Systems	4
Components	5
Front View	5
CL3108 Rear View	7
CL3116 Rear View	8
2. Hardware Setup	
Overview	9
Before you Begin	9
Standard Rack Mounting	10
Grounding	12
Single Level Installation	13
Cable Connection Diagrams	14
KVM Cable Installation Diagrams	14
Two Level Installation	15
3. Basic Operation	
Opening the Console	17
Closing the Console	19
Operating Precautions	20
Powering Off and Restarting	21
LCD OSD Configuration	22
The LCD Buttons	22

LCD Adjustment Settings	23
Hot Plugging	24
Hot Plugging KVM Ports	24
Port Selection	24
Manual Port Switching	24
Port ID Numbering	25

4. OSD Operation

OSD Overview	27
OSD Login	27
OSD Hotkey	27
Manufacturing Number	27
OSD Main Screen	28
OSD Main Screen Headings	28
OSD Navigation	29
OSD Functions	29
F1: GOTO	30
F2: LIST	30
F3: SET	31
F4: ADM	33
F5: SKP	36
F6: BRC	36
F7: AUTO SCAN	37
F8: LOUT	38

5. Keyboard Port Operation

Hotkey Port Control	39
Invoke Hotkey Mode	39
Number Lock and Minus Keys	39
Control and F12 Keys	40
Select the Active Port	40
Auto Scan Mode	41
Invoking Auto Scan:	41
Skip Mode	42
Computer Keyboard / Mouse Reset	43
Hotkey Beeper Control	43
Quick Hotkey Control	44
OSD Hotkey Control	44
Port OS Control	45
Set USB Speed	45
Restore Default Values	46
Hotkey Summary Table	47

6. Keyboard Emulation

Mac Keyboard	49
--------------------	----

Sun Keyboard	50
7. The Firmware Upgrade Utility	
Introduction	51
Downloading the Firmware Upgrade Package	51
Preparation	52
Starting the Upgrade	53
Upgrade Succeeded	55
Upgrade Failed	55
Firmware Upgrade Recovery	56
Appendix	
Safety Instructions	57
General	57
Rack Mounting	59
Technical Support	60
International	60
North America	60
Specifications	61
Connection Tables	63
CL3108 to Compatible 8-Port Switches	63
CL3108 to Compatible 16-Port Switches	63
CL3116 to Compatible 8-Port Switches	63
CL3116 to Compatible 16-Port Switches	63
Supported KVM Switches	64
OSD Factory Default Settings	65
Optional Rack Mounting	66
Easy Installation Kit Mounting	66
About SPHD Connectors	69
Troubleshooting	70
Limited Warranty	71
Index	73

About this Manual

This user manual is provided to help you get the most from your CL3108 / CL3116 system. It covers all aspects of installation, configuration and operation. An overview of the information found in the manual is provided below.

Chapter 1, Introduction, introduces you to the CL3108 / CL3116 system. Its purpose, features and benefits are presented, and its front and back panel components are described.

Chapter 2, Hardware Setup, describes how to set up your installation. The necessary steps – from a basic single level hookup to a complete 17-switch two level operation are provided.

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 how to work with it.

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 use this utility to upgrade the CL3108 / CL3116 firmware with the latest available versions.

An Appendix, provides specifications and other technical information regarding the CL3108 / CL3116.

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 the option (on a menu or dialog box, for example), that comes next. For example, Start → Run means to open the *Start* menu, and then select *Run*.
-  Indicates critical information.

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

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Chapter 1

Introduction

Overview

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

The CL3108 / CL3116 can control up to 8/16 computers; when 8/16 additional KVM switches are cascaded, a single CL3108 / CL3116 LCD KVM Switch can control up to 128/256 computers. To achieve greater operational efficiency, the CL3108 / CL3116 offers Broadcast mode, which the console spreads out the commands to all computers to perform operations simultaneously. Besides, the Auto scan mode fulfills the needs for continuous monitoring a specific group of computers, and establishing a reliable working environment for users.

To enhance information safety, the CL3108 / CL3116 provides two-level password security which restricts unauthorized users from viewing and controlling the computers. For added convenience, the CL3108 / CL3116 comes with an additional hot-pluggable USB mouse port that only supports HID device for keyboard and mouse.

As a feature-rich LCD KVM Switch, the CL3108 / CL3116 is aimed not just to achieve but exceed the requirements for space utility optimization, superior video quality, adaptive deployment, and operational versatility, and thus is ideal for control rooms with limited space in any industry.

Features

Space Utility Optimization

- ◆ Exclusive LED illumination light – designed by ATEN to illuminate the keyboard and touchpad to allow visibility in 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 high system rack
- ◆ Short-depth design allows you to work with your rack-mounting equipment in narrow spaces
- ◆ Console lock – enables the console drawer to remain securely locked away in position when not in use

Reliability and Operational Versatility

- ◆ Superior video quality – up to 1366 x 768; DDC2B
- ◆ Cascade up to 2 levels – CL3108 controls up to 128 computers or CL3116 controls up to 256 computers from a single console (With compatible KVM Switches: CS1308, CS1316)
- ◆ Dual Interface – supports computers with PS/2 or USB keyboards and mice
- ◆ 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 continuous 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 Easy Installation Rack Mounting Kit available*
- ◆ No software required
- ◆ Firmware upgradable
- ◆ Supports hot-plugging

Note: *The Easy Installation Rack Mounting Kit-Short, 2X-041G is sold separately. Contact your ATEN dealer for product information.

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 the connected devices or degrade overall performance. For optimum signal integrity and to simplify the layout use the high quality custom cable sets described below.

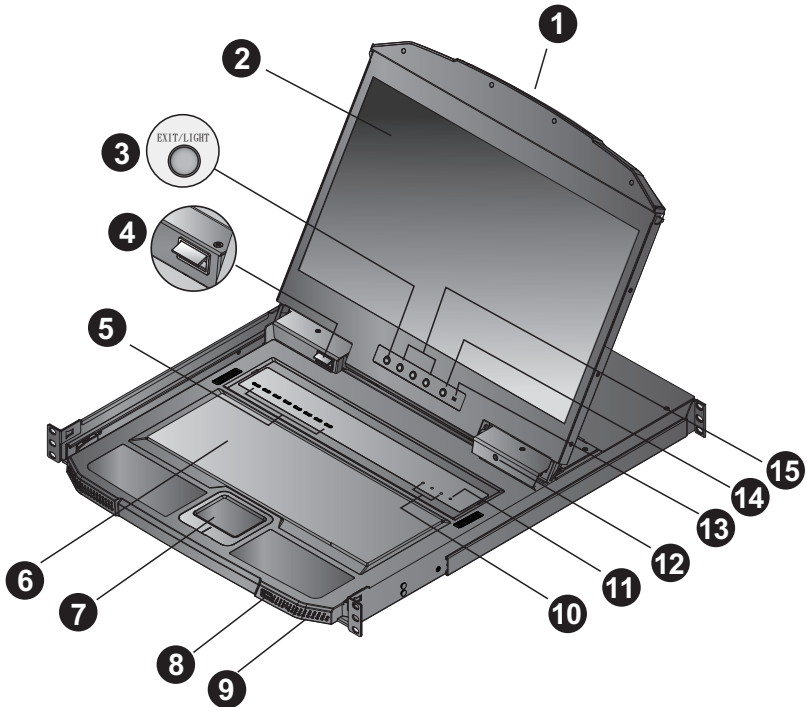
Function		Length	Part Number
KVM switch to computer	PS/2	1.2 m	2L-5201P
		1.8 m	2L-5202P
		3.0 m	2L-5203P
		6.0 m	2L-5206P
		1.8 m	2L-5702P
	USB	1.2 m	2L-5201U
		1.8 m	2L-5202U
		3.0 m	2L-5203U
		5.0 m	2L-5205U
	PS/2-USB	1.2 m	2L-5301UP
		1.8 m	2L-5302UP
3.0 m		2L-5303UP	

Operating Systems

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

Components

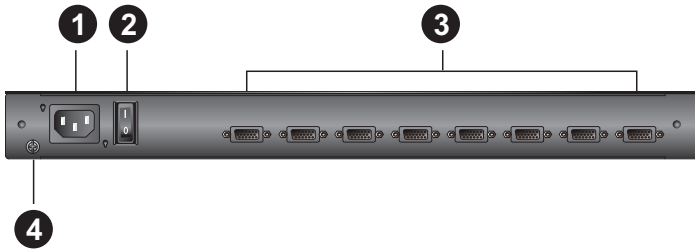
Front View



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.

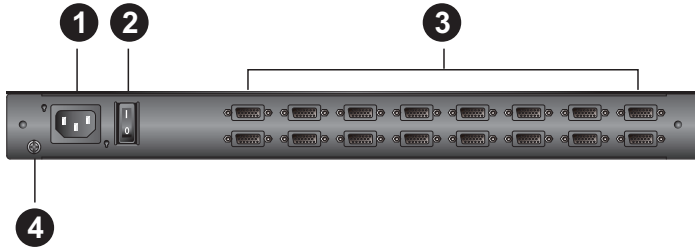
No.	Component	Description
1	Handle	Pull to slide the LCD module out; push to slide it in. See <i>Opening the Console / Closing the Console</i> , page 19 for sliding the console in and out.
2	LCD Display	After sliding the KVM module out, flip up the cover to access the LCD monitor by pressing the Handle, see <i>Handle</i> , page 6.
3	LED Illumination Light Pushbutton	Press the Exit/Light pushbutton for two seconds to turn the LED light ON or Off. (Default: Off)
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 Switch	Located to the right of the Lock LEDs. Press this recessed switch 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 <i>Firmware Upgrade Recovery</i> , page 56, for details.
14	LCD On / Off 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 <i>Cables</i> section on page 4, 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. 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 <i>Cables</i> section on page 4, 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.

Chapter 2

Hardware Setup

Overview

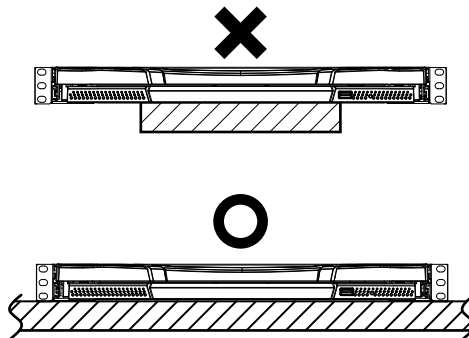
The CL3108 / CL3116 is a switch designed to work with USB and PS/2 interfaces. It utilizes custom KVM cables that serve as intermediaries between the switch and computers. A custom KVM cable is required for each computer. Custom cables of various lengths are listed on page 4. Consult your dealer to find out which custom KVM cables best fit your needs.

Before you Begin



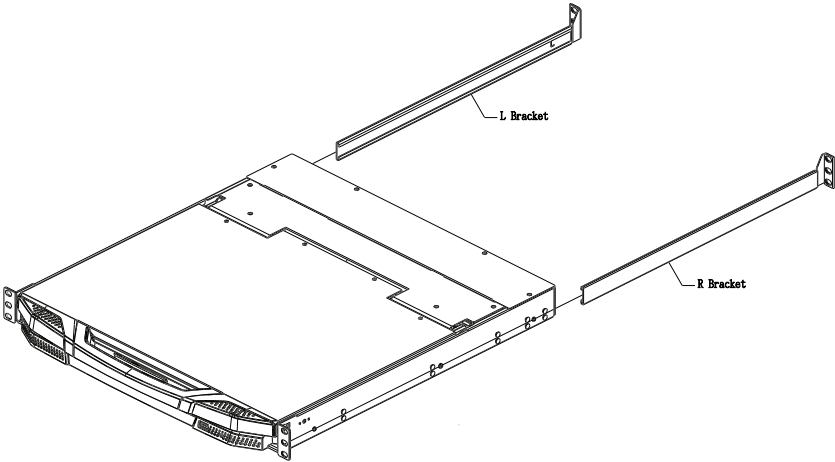
1. Important safety information regarding the placement of this device is provided on page 57. Please review it before proceeding.
2. Make sure that power to all the devices you will be connecting up has been turned off. You must unplug the power cords of any computers that have the Keyboard Power On 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 completely flat and firm surface before pulling the device in or out to prevent damage due to uneven force on the module.

Place on Flat Surface



Standard Rack Mounting

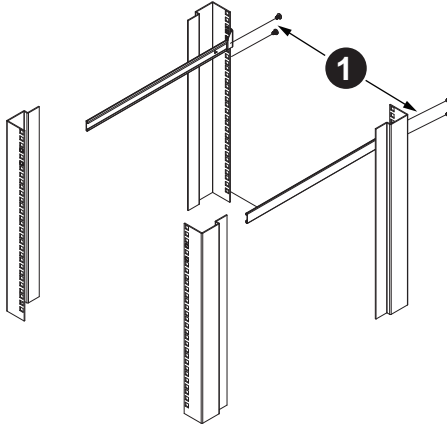
A standard rack mounting kit is provided with your CL3108 / CL3116 and can be mounted in 1U of rack space. The kit enables the switch to be mounted in rack with a depth of 42.0-72.0 cm. The installation procedures are described in the following sections. Below is an image of the parts included with your package that will be needed for rack installation.



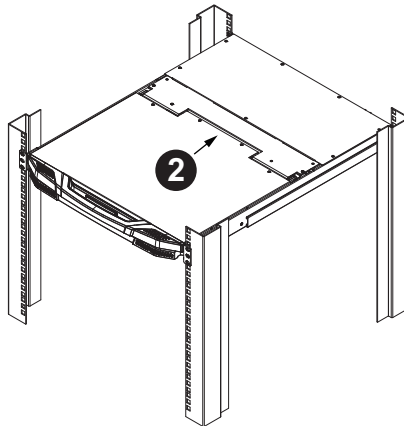
-
- Note:**
1. It takes two people to mount the switch: one to hold it in place, the other to screw it in.
 2. The standard rack mounting kit does not include screws or cage nuts. If you need additional screws or cage nuts, contact your rack dealer.
 3. Allow at least 5.1 cm on each side for proper ventilation, and at least 12.7 cm at the back for the power cord and cable clearance.
 4. Optional mounting kits – including single person Easy Installation kits – are available with a separate purchase. See *Optional Rack Mounting*, page 66 for details.
-

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

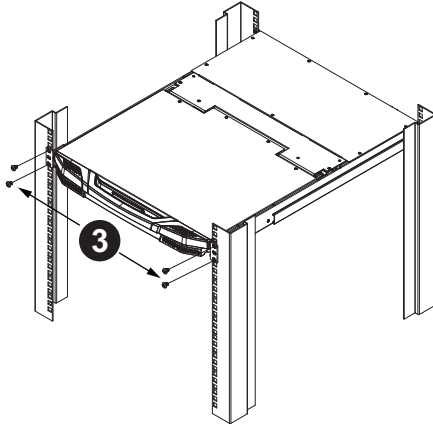
1. Attach the left and right mounting brackets to the back of the rack, installing four screws in the tabs to secure them in place.



2. Two people to insert the CL3108 / CL3116, by sliding its left and right side bars into the mounting brackets.



3. While one person hold the weight of the CL3108 / CL3116, have a second person to install four screws in the front tabs to secure the module to the front of the rack.



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

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.

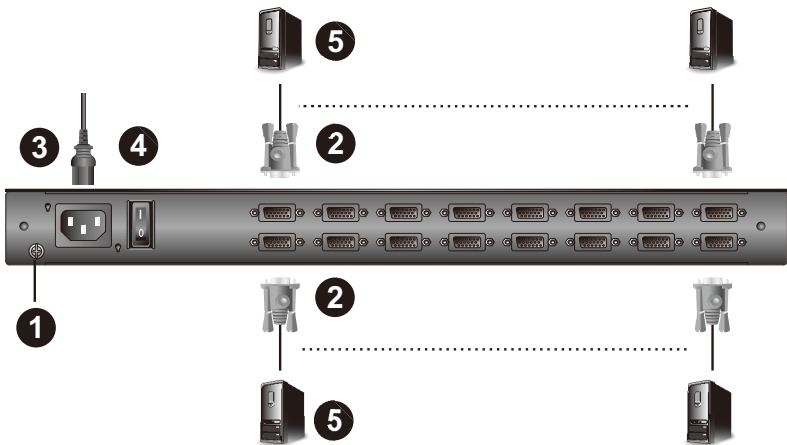
Single Level Installation

In a single level installation, there are no additional switches cascaded from the first unit. To set up a single 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 CL3108 / CL3116 and make sure that power has been turned off to all the computers you will be connecting.
2. Use KVM cable sets* (as described in the *Cables* section on page 4), 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



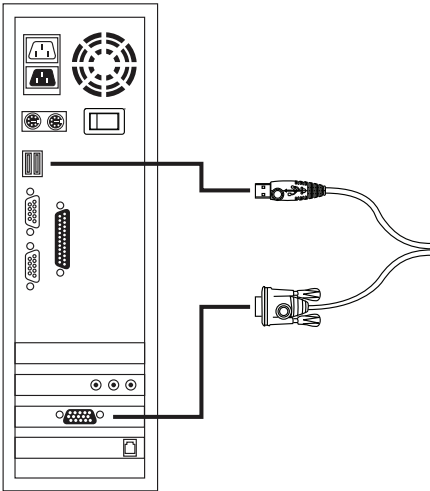
Note: The numbers in the diagram correspond to the numbered steps above.

* Contact your KVM dealer for ordering information.

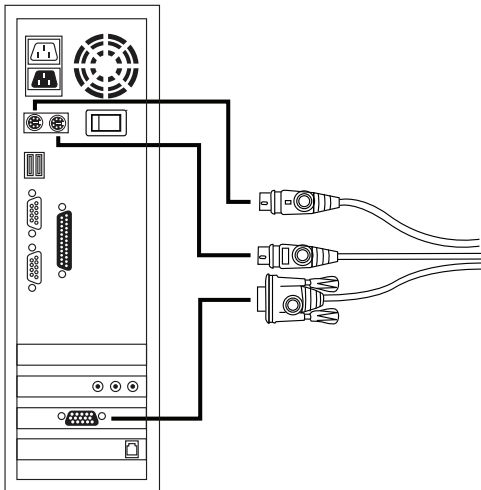
Cable Connection Diagrams

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 cascade 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.

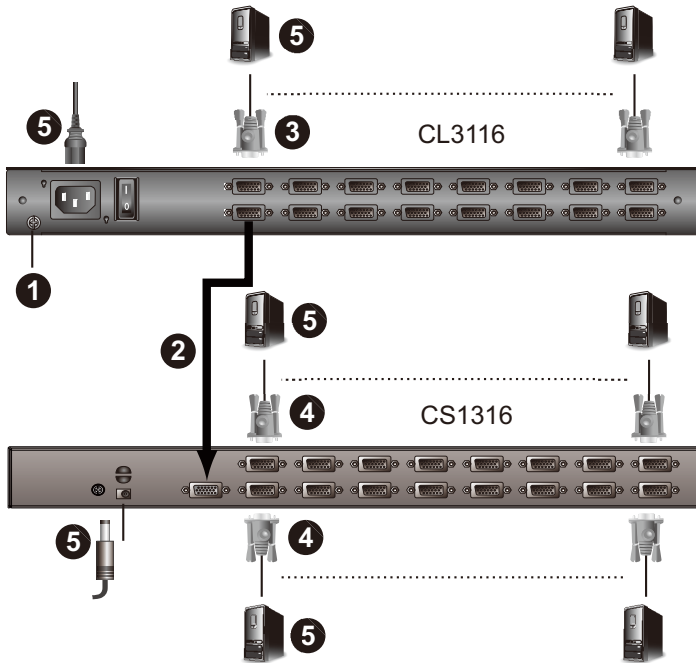
To set up a two level installation, do the following:

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 master CL3108 / CL3116 and make sure that power has been turned off to all the computers you will be connecting up.
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 4), 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 slave units be powered on first. After they are all on, the master 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

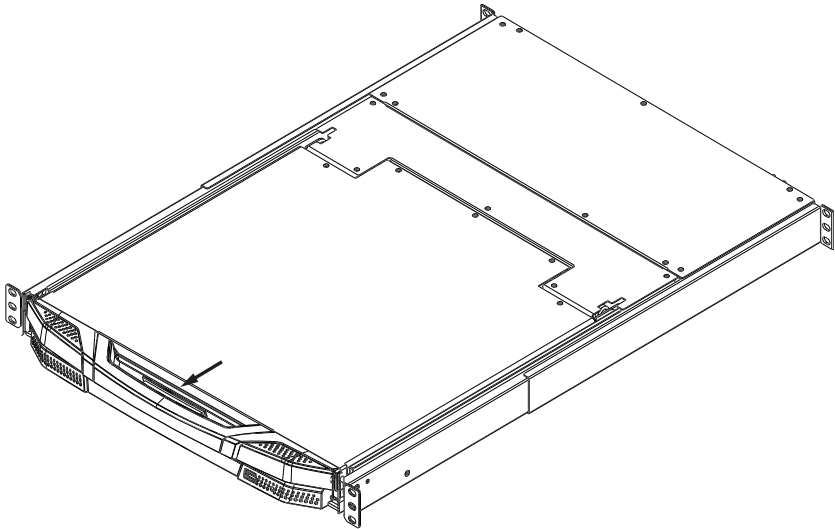
Opening the Console

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

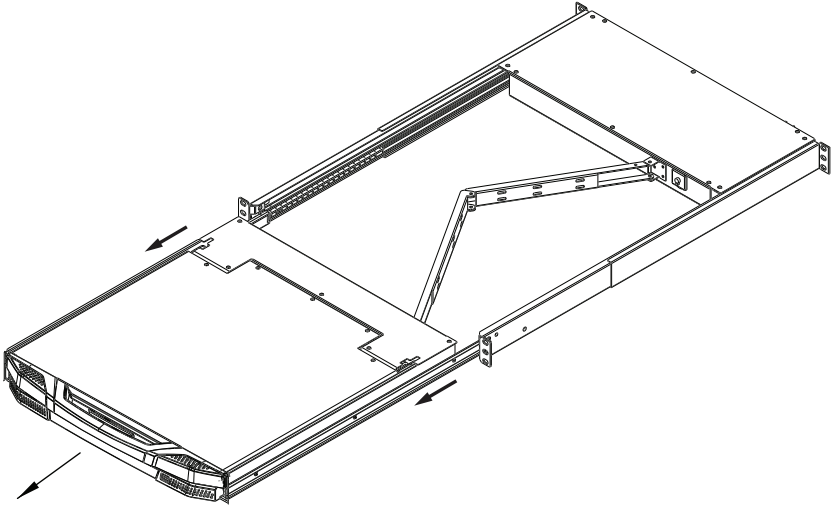
Note: As a safety precaution, to keep the console from accidentally sliding out, the console is locked into the In position. Before you can pull the console module out, you must release it by pulling the Release Bar on the unit's front panel toward the center of the switch.

To slide the console module out, do the following:

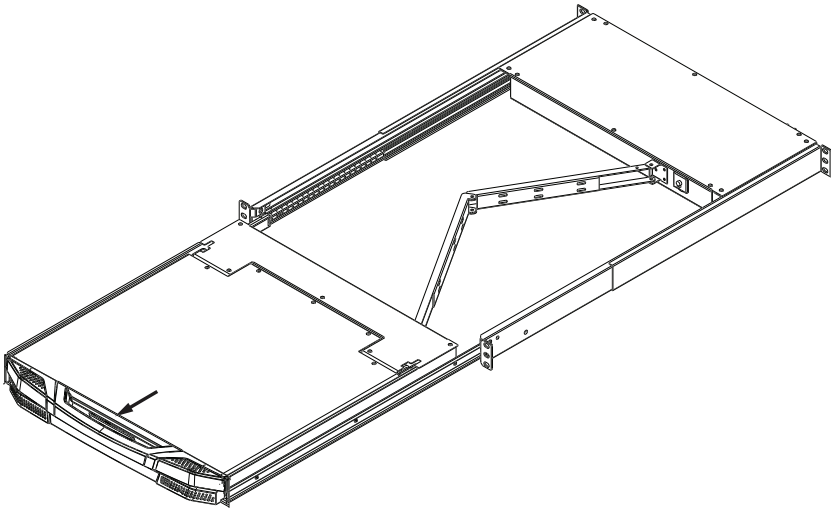
1. Pull on the Release Bar on the handle.



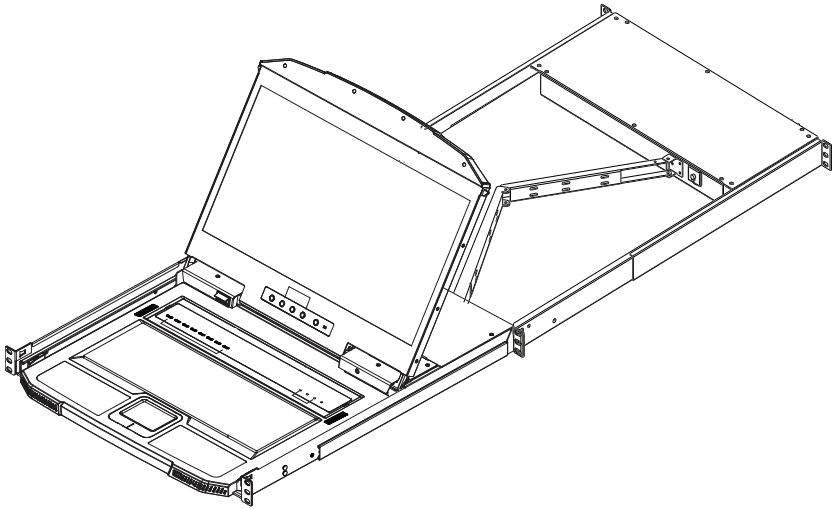
2. Slide the module all the way out until it automatically locks in place.



3. Open the cover by pulling the Release Bar on the handle as pictured below.



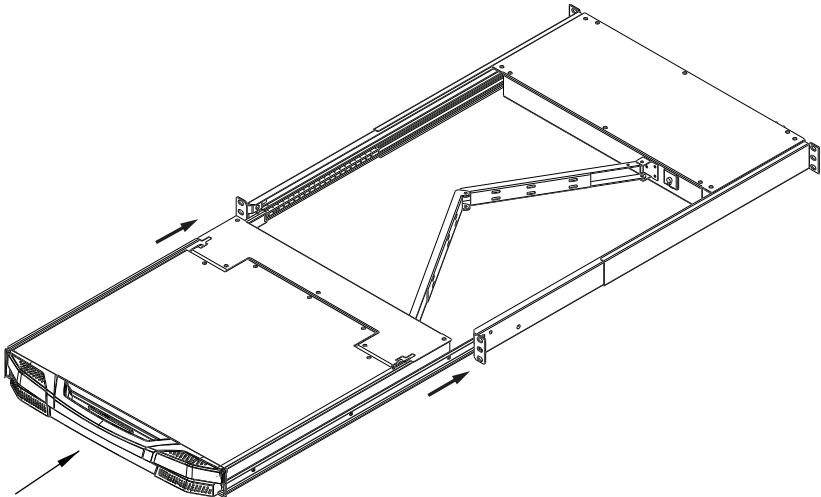
4. Below picture is what the CL3108 / CL3116 looks like when it is opened up.



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 30kg. Failure to heed the information below can result in damage to the keyboard module.

	<p>Right!</p> <p>Rest your hands and arms lightly on the keyboard module as you work.</p>
	<p>Wrong!</p> <ul style="list-style-type: none">◆ DO NOT lean your body weight on the keyboard module.◆ 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 that have the 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 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	<ul style="list-style-type: none"> ◆ 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	<ul style="list-style-type: none"> ◆ 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	<ul style="list-style-type: none"> ◆ Push this button to turn the LCD monitor on and off. The button lights when the LC monitor is off. <p>Note:The light only indicates that the monitor is off, not the attached KVM switch.</p>

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 <i>Adjust Color</i> 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. 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 a master 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 slave unit has a four digit Port ID.

The first two digits represent the KVM port number on the master 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 master unit.

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Chapter 4

OSD Operation

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.

To go into OSD, press the OSD Hotkey twice.

OSD Hotkey

The default Hotkey is **[Scroll Lock]**. You can change the Hotkey to the **[Ctrl]** key should you wish to, refer to *Hotkey Summary Table* on page 47 for more information.

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]**. The OSD main screen will display under administrator mode. In this mode, you have administrator privileges, with access to all administrator and user functions, and can set up operations (including password authorization) as you like.

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

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.


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 <i>Set Quick View Ports</i> , 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 <i>Edit Port Names</i> , 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	<p>Selects which hotkey activates the OSD function:</p> <p>[Scroll Lock] [Scroll Lock] or [Ctrl] [Ctrl].</p> <p>Since the [Ctrl] key combination may conflict with programs running on the computers, the default is the [Scroll Lock] combination.</p>
PORT ID DISPLAY POSITION	<p>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.</p> <p>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.</p>
PORT ID DISPLAY DURATION	<p>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.</p>
PORT ID DISPLAY MODE	<p>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).</p>
SCAN DURATION	<p>Determines how long the focus dwells on each port as it cycles through the selected ports in Auto Scan mode (see <i>F7 SCAN</i>, 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.</p>

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Setting	Function
SCAN-SKIP MODE	<p>Selects which computers will be accessed under skip mode (see <i>F5 SKP</i>, page 36), and Auto Scan mode (see <i>F7 SCAN</i>, page 37). Choices are:</p> <p>ALL - All the ports which have been set accessible (see <i>SET ACCESSIBLE PORTS</i>, page 33);</p> <p>QUICK VIEW - Only those ports which have been set accessible and have been selected as quick view ports (see <i>SET QUICK VIEW PORTS</i>, page 35);</p> <p>POWERED ON - Only those ports which have been set accessible and are powered on;</p> <p>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.</p> <hr/> <p>Note:The quick view choices only show up on the administrator's screen, since only he has Quick View setting rights (see <i>SET QUICK VIEW PORTS</i>, page 35, for details).</p>
SCREEN BLANKER	<p>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.</p>
HOTKEY COMMAND MODE	<p>Enables / disables the hotkey command function in case a conflict with programs running on the computers occurs.</p>
HOTKEY	<p>Sets the keyboard shortcut for invoking <i>Hotkey Mode</i> (see page 39). Choices are: NUM LOCK + - (minus) (default), and CTRL + F12.</p>
TOUCHPAD	<p>Enables / disables the touchpad function.</p>
OSD LANGUAGE	<p>Sets the language used in the OSD. Choices are: English (default), German, Japanese, Simplified Chinese and Traditional Chinese.</p>

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	<p>This function is used to set usernames and passwords for the administrator and users:</p> <ol style="list-style-type: none"> 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. <hr/> <p>Note: Usernames and passwords are not case sensitive. Usernames are displayed in capital letters in the OSD.</p>
SET ACCESSIBLE PORTS	<p>This function allows the administrator to define user access to the computers on the installation on a port-by-port basis.</p> <p>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.</p> <hr/> <p>Note:</p> <ul style="list-style-type: none"> ◆ 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.

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Setting	Function
SET LOGOUT TIMEOUT	<p>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.</p> <p>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.</p> <hr/> <p>Note: This feature does not function if Set Login Mode is disabled. See <i>SET LOGIN MODE</i>, page 35.</p>
EDIT PORT NAMES	<p>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.</p> <p>To edit a port name:</p> <ol style="list-style-type: none"> Click the port, or use the navigation keys to move the highlight bar to it, then press [Enter]. 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: <ul style="list-style-type: none"> ◆ All alpha characters: A–Z ◆ All numeric characters: 0–9 ◆ * () + : - , ? . / and Space <p>Case does not matter; the OSD displays the port name in all capitals no matter how they were keyed in.</p> When you have finished editing, press [Enter] to have the change take effect. To abort the change, press [Esc].
RESTORE DEFAULT VALUES	<p>This function is used to undo all changes and return the setup to the original factory default settings (see <i>OSD FACTORY DEFAULT SETTINGS</i>, page 65) except for the port name list, username and password information, which are saved.</p>
CLEAR THE NAME LIST	<p>This function clears the port name list.</p>
ACTIVATE BEEPER	<p>Choices are Y (on), or N (off). When activated, the beeper sounds whenever a port is changed; when activating the Auto Scan function (see <i>F7 SCAN</i>, page 37); or an invalid entry is made on an OSD menu. The default is Y.</p>

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Setting	Function
SET QUICK VIEW PORTS	<p>This function lets the administrator select which ports to include as quick view ports.</p> <ul style="list-style-type: none"> ◆ 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]. ◆ 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. ◆ If one of the quick view options is chosen for the LIST view (see <i>F2 LIST</i>, page 30), only a port that has been selected here will display on the list. ◆ If one of the quick view options is chosen for auto-scanning (see <i>SCAN/SKIP MODE</i>, page 32), only a port that has been selected here will be auto-scanned. <p>The default has no ports selected for quick view.</p>
SET OPERATING SYSTEM	<p>This function allows the administrator to define the operating system for the computer connected to each KVM port. The default is WIN (PC compatible).</p> <p>To set the port operating system:</p> <ol style="list-style-type: none"> 1. From the list, select the port for which you wish to set the computer's operating system. 2. Set the operating system by pressing [Spacebar] to cycle through WIN, MAC, SUN, or OTHER. 3. Press [Esc] to exit. The operating system you selected is assigned to the KVM port.
FIRMWARE UPGRADE	<p>In order to upgrade the CL3108 / CL3116 firmware (see page 52), you must first enable Firmware Upgrade mode with this setting.</p> <p>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.</p>
SET KEYBOARD LANGUAGE	<p>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].</p> <p>Choices are: AUTO (default), ENGLISH (UK), ENGLISH (US), GERMAN (GER.), GERMAN (SWISS), FRENCH, HUNGARIAN, ITALIAN, JAPANESE, KOREAN, RUSSIAN, SPANISH, SWEDISH, and TRADITIONAL CHINESE.</p>
SET LOGIN MODE	<p>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.</p>

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.

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- 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.
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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.¹ There are two possible keystroke sequences used to invoke *Hotkey* mode, though only one can be operational at any given time:

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] + [-]

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

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 <i>Scan/Skip Mode</i> , 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 6.

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 [Scroll Lock], [Scroll Lock] and [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]	Activate OSD mode. Click [Esc] to close the OSD and go back to the normal PC operation.
[Num Lock] + [-] or [Ctrl] + [F12]	[A] / [a] [Enter]	Invokes <i>Auto Scan</i> mode. The KVM focus cycles from port to port at 5-second intervals. Auto Scan duration could be adjusted via OSD menu. When <i>Auto Scan</i> mode is in effect, [P] or left-click pauses auto-scanning. 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 <i>Quick Hotkey</i> invocation keys between [Ctrl] + [F12] and [Num Lock] + [-].
	[R] / [r] [Enter]	This administrator only hotkey restores the switch's default values. See <i>RESTORE DEFAULT VALUES</i> , 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 <i>OSD Hotkey</i> between [Ctrl] [Ctrl] and [Scroll Lock] [Scroll Lock].
	[←]	Invokes <i>Skip</i> mode and skips from the current port to the first accessible port previous to it.
	[→]	Invokes <i>Skip</i> mode and skips from the current port to the next accessible port.









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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:

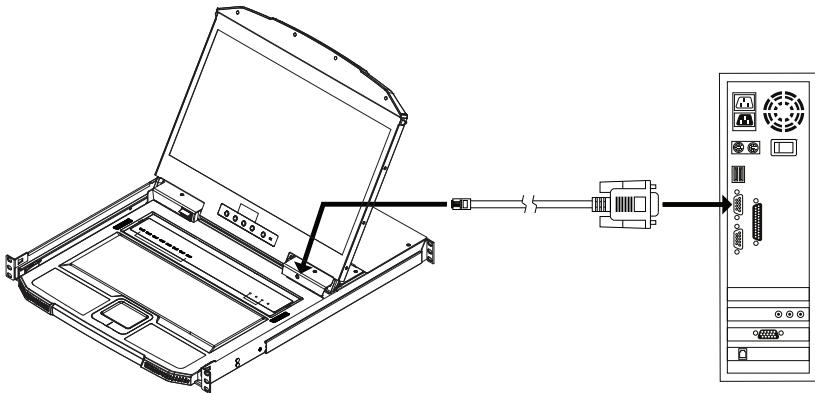
1. From a computer that is not part of your KVM installation go to our ATEN website and choose the model name that relates to your device. A list of available firmware upgrade packages appears.
2. Choose the firmware upgrade package that you wish to install (usually the most recent) and download it to 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 Recovery Switch to Normal position for upgrade.



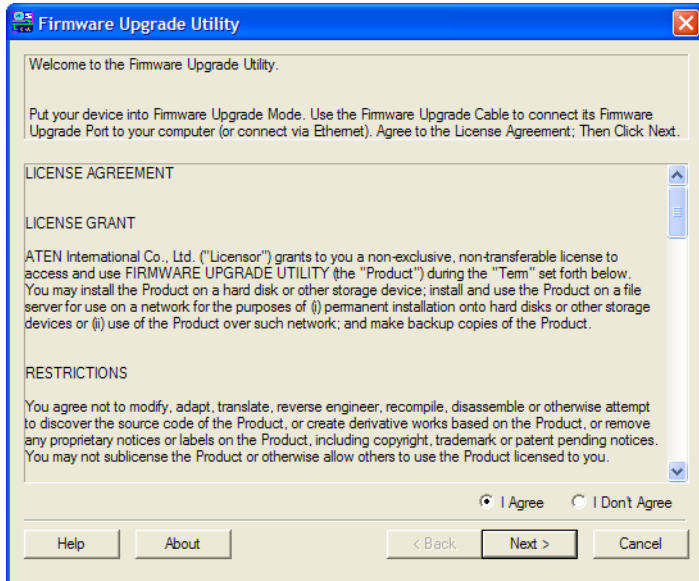
2. Shut down all the computers on the KVM installation.
3. From your KVM switch console, login to the OSD as the administrator (see page 27) and select the **F4 ADM** function.
4. Scroll down to FIRMWARE UPGRADE. Press **[Enter]**, then press **[Y]** to invoke *Firmware Upgrade* mode (see page 35)

Starting the Upgrade

To upgrade the firmware:

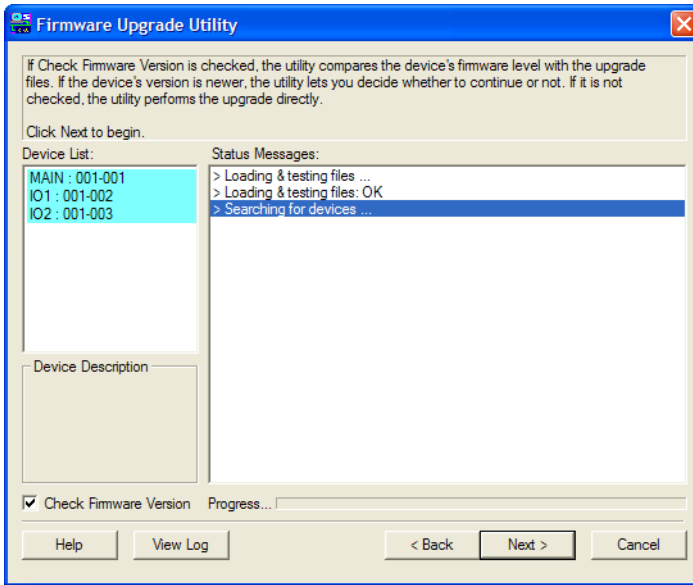
1. Run the downloaded firmware upgrade package file either by double-clicking the file icon, or by opening a command line and entering the full path to it.

The *Firmware Upgrade Utility* welcome screen appears:



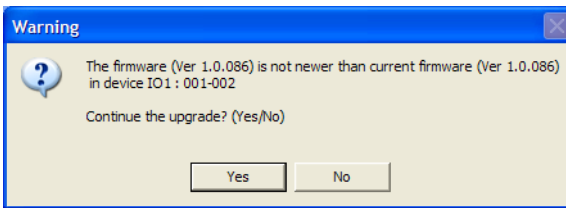
Note: The screens shown in this section are for reference only. The wording and layout of the actual screens put up by the Firmware Upgrade Utility may vary slightly from these examples.

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.

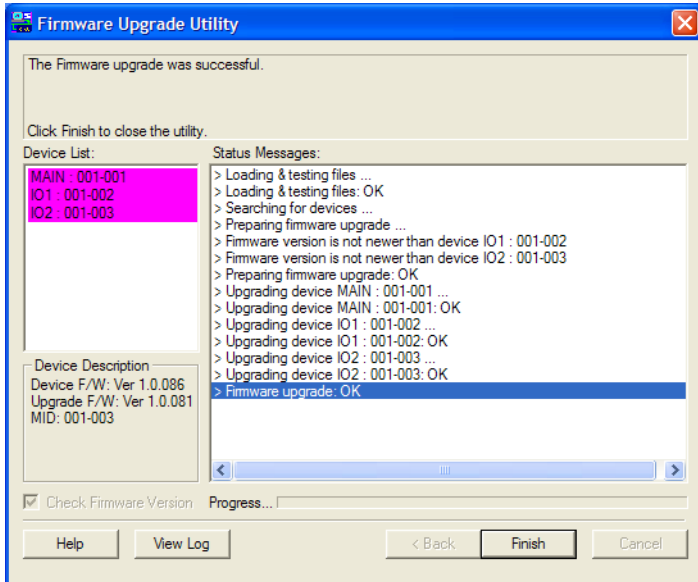


If you didn't enable *Check Firmware Version*, the Utility installs the upgrade files without checking whether they are a higher level, or not.

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 *Upgrade Succeeded* screen doesn't appear, it means that the upgrade failed to complete successfully. See the next section, *Firmware Upgrade Recovery*, for how to proceed.

Firmware Upgrade Recovery

There are three conditions that call for firmware upgrade recovery:

- ◆ When a firmware upgrade is manually aborted.
- ◆ When the mainboard firmware upgrade fails.
- ◆ When the I/O firmware upgrade fails.

To perform a firmware upgrade recovery, do the following:

1. Power off the CL3108 / CL3116.
2. Connect the *Firmware Upgrade Cable* to its *Firmware Upgrade Port*.
3. Slide the *Firmware Upgrade Recovery Switch* to the **Recover** position.
4. Power the CL3108 / CL3116 back on and repeat the upgrade procedure.
5. After the CL3108 / CL3116 has been successfully upgraded, power it off, and slide the *Firmware Upgrade Recovery Switch* back to the **Normal** position.
6. If the CL3108 / CL3116 is one of the cascaded switches, plug it back into the installation.
7. Power the CL3108 / CL3116 back on.

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 @ 60Hz		
Panel Spec	LCD Module	18.5" TFT-LCD		
	Resolution	1366 x 768 @ 60Hz		
	Response Time	5 ms		
	Viewing Angle	170° (H), 160° (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 100-240V; 50-60 Hz; 1 A	
Power Consumption		AC 110V:14.1W:70BTU	AC 220V:14.9W:74BTU
Environment	Operating Temp.	0–40°C	
	Storage Temp	-20–60°C	
	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 table below lists KVM switches that are compatible with the CL3108 / CL3116 and the type of expansion that they use. (KVM switches listed below are sold separately. Contact your dealer for details.)

Expansion Type	Brand	Model	Name
Cascade	ATEN	CS1308	8 Port USB / PS/2 KVM Switch
		CS1316	16 Port USB / PS/2 KVM Switch

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

Optional Rack Mounting

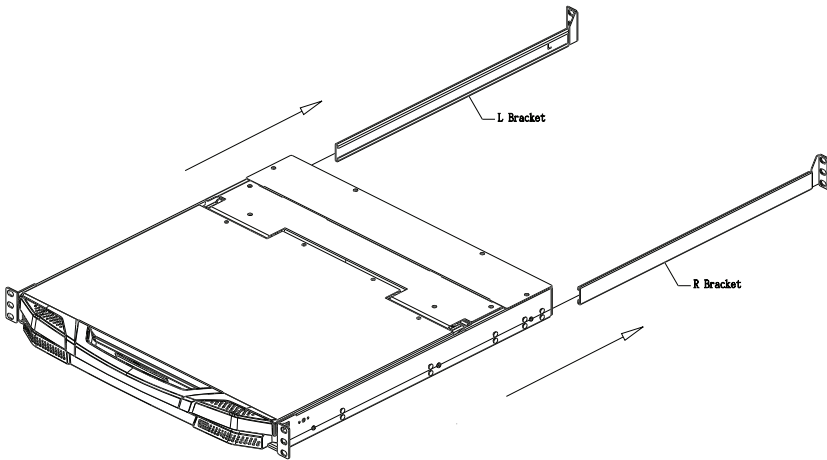
Easy Installation Kit Mounting

Other than the standard mounting kit, two optional rack mounting kits for the CL3108 / CL3116 are available as shown in the following table:

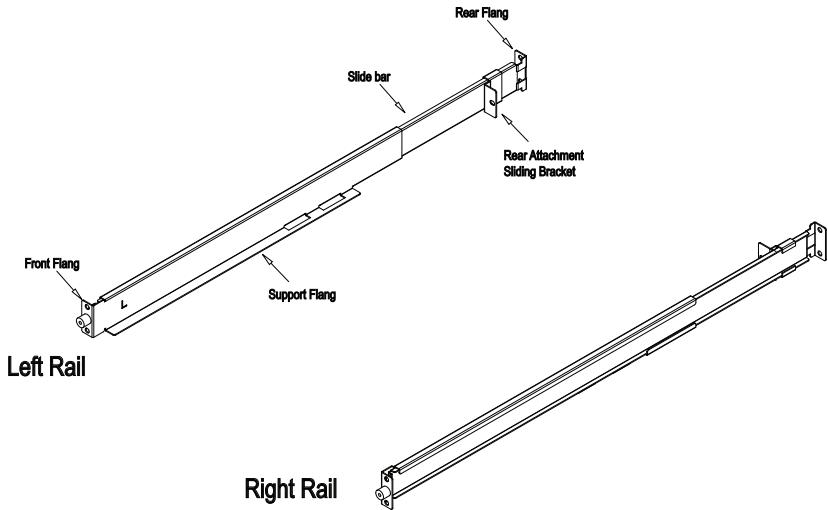
Bracket Type	Depth (cm)
Easy Installation – Short (2X-041G)	57.0—70.0

While it takes two people to perform a standard installation, with an *Easy-Installation* kit, one person can mount the CL3108 / CL3116. To install the *Easy-Installation* kit, do the following:

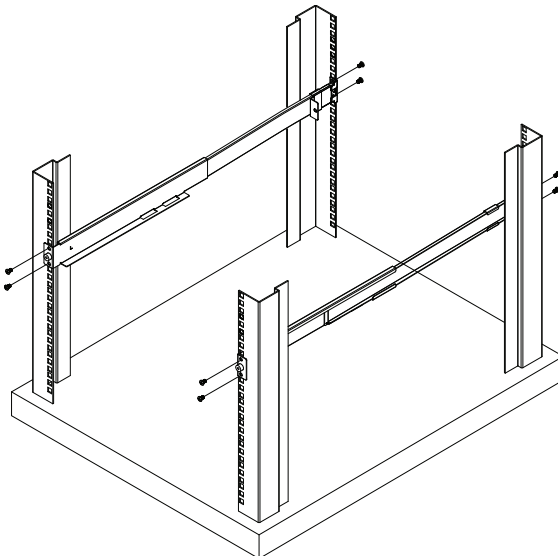
1. Remove the right and left standard sliding brackets from both sides of the CL3108 / CL3116.



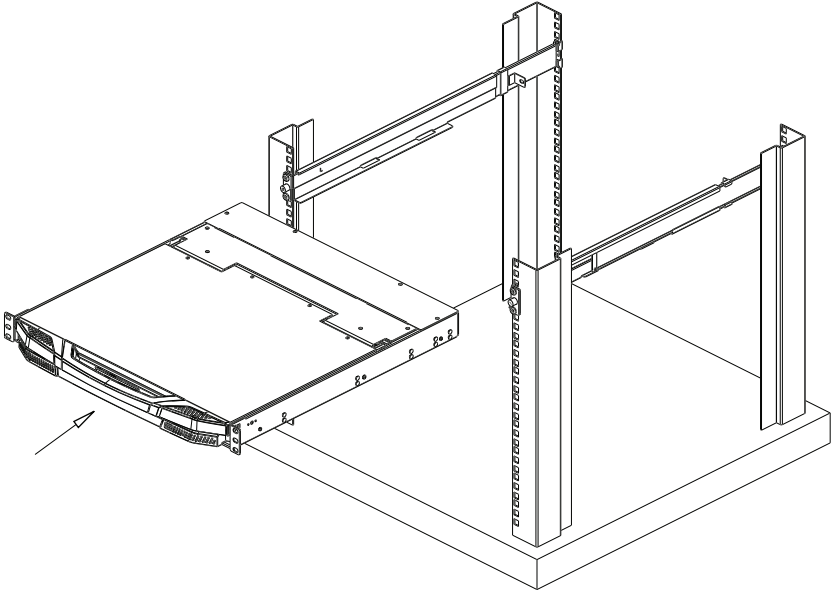
2. Attach the left and right *easy-installation* mounting rails to the inside of the rack. The flange that supports the CL3108 / CL3116 will be to the inside.



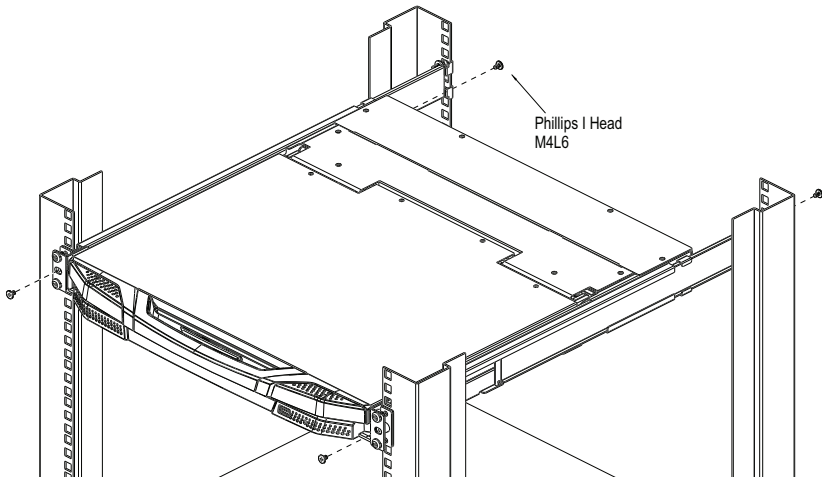
- a) Screw the front flanges to the rack first.
- b) Slide the bars with the rear flanges toward the rack until the flanges make contact with the rack, then screw the rear flanges to the rack.



- Slide the CL3108 / CL3116 onto the support flanges. Use the screws supplied with this package to loosely attach the front of the CL3108 / CL3116 to the front of the rack (only tighten the screws part way).



- Slide the rear attachment sliding brackets along the slide bars until they contact the rear of the CL3108 / CL3116, then use the screws supplied with this package to attach the bars to the rear of the CL3108 / CL3116 (tighten the screws all the way).



5. Slide the CL3108 / CL3116 open and closed a couple of times to be sure that it is properly aligned and operating smoothly. (See p. 17 for opening and closing procedures.)
6. After determining that the CL3108 / CL3116 is properly lined up and operating correctly, finish up by fully tightening down the partially tightened front attachment screws inserted in step 3.

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 defective, 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/>

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Index

A

- Activate Beeper 34
- ADM 33
- Auto Scanning 37
 - Invoking Auto Scan 41
 - Pausing Auto Scan 41
 - Scan Duration 31
 - Stopping 41

B

- Beeper
 - Activate 34
 - Control 43
 - Hotkey Control 43, 44

BRC 36

Broadcast Mode 36

C

- AC Power Rear view 7
 - Front view 5
- Clear the Name List 34
- Closing the console 19
- Components 5
- computer connection tables 63
- Console
 - Closing 19
 - Opening 17
- console cable installation 14

D

desktop mounting 10

E

Edit Port Names 34

F

- F1: GOTO 30
- F2: LIST 30
- F3: SET 31
- F4: ADM 33
- F5: SKP 36
- F6: BRC 36
- F7: SCAN 37
- F8: LOUT 38
- factory default settings 65
- Firmware upgrade
 - OSD setting 35
 - port 52

recovery 56

Front View 5

G

- GOTO 30
- Grounding 12

H

- hardware requirements
 - cables 4
 - computers 4
 - consoles 4
- Hot Plugging
 - KVM ports 24
- Hotkey
 - Beeper Control 43, 44
 - Command Mode 32
 - OSD 31
 - Selecting the Active Port 40
 - Summary Table 47

- Hotkey Mode
 - exiting 40
 - invoking 39
- Hotkey Port Control 39

I

- Installation
 - single level 13
 - two level 15
- Invoking Hotkey Mode 39

K

- Keyboard Emulation
 - Mac 49
 - Sun 50
- KVM adapter cables 4

L

- LCD
 - Adjustment settings 23
- LIST 30
- Logout 38
- Logout Timeout 34
- LOUT 38

M

- mounting
 - rack 10

O

- Online
 - Registration iii

Opening the console 17

Operating precautions 20

Optional rack mounting 66

OSD

factory default settings 65

Functions 29

Hotkey 31

Logout 38

Main Screen 27, 28

Main Screen Headings 28

Navigation 29

Overview 27

Password 27

P

Password 27

Pause 37

Port ID

Display Duration 31

Display Mode 31

Display Position 31

Numbering 25

Port Names 34

Port Selection 24

Manual 24

ports

quick view 35

set operating system 35

Powering Off 21

Q

quick view ports 35

R

Rack mounting

Optional 66

rack mounting 10

safety information 59

Rear View

AC power 7

Requirements

OS Support 4

Restarting 21

Restore Default Values 34

RoHS ii

S

safety instructions

general 57

rack mounting 59

SCAN 37

Scan Duration 31

SCAN/SKIP MODE 32

Screen Blanker 32

Selecting the Active Port 40

SET 31

Accessible Ports 33

Logout Timeout 34

Quick View Ports 35

single level installation 13

Skip Mode 36, 42

Specifications 61

stacking 10

T

Technical Support 60

Telephone support iii

Timeout 34

Troubleshooting 70

two level installation 15

U

User Notice, iii