LCD KVMP Switch
CL5708 / CL5716
User Manual

FCC Information

This is an FCC 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.

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.

RoHS

This product is RoHS compliant.

SJ/T 11364-2006

The following contains information that relates to China.

部件名称	有毒有害物质或元素					
	铅	汞	镉	六价铬	多溴联苯	多溴二苯醚
电器部件	●	○	○	○	○	○
机构部件	○	○	○	○	○	○

○: 表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T
　11363-2006规定的限量要求之下。

●: 表示符合欧盟的豁免条款，但该有毒有害物质至少在该部件的
　某一均质材料中的含量超出SJ/T 11363-2006的限量要求。

✕: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超
　出SJ/T 11363-2006的限量要求。

User Information

Online Registration

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

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

Telephone Support

For telephone support, call this number:

International		886-2-8692-6959
China		86-10-5255-0110
Japan		81-3-5615-5811
Korea		82-2-467-6789
North America	ATEN TECH	1-888-999-ATEN
	ATEN NJ	1-732-356-1703
United Kingdom		44-8-4481-58923

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.

Package Contents

Basic Package

The basic CL5708 / CL5716 package consists of:

- 1 CL5708 / CL5716 KVMP Switch with standard Rack Mounting Kit
- 2 Custom KVM Cable Sets
- 1 5-in-1 USB / PS/2 Console Cable
- 1 Firmware Upgrade Cable
- 1 Power Cord (AC Power Models)
- 1 Grounding Wire
- 1 User Manual*
- 1 Quick Start Guide

Optional Equipment

Depending on any optional equipment that you may have purchased, one of the following may be included in your package:

- Standard Rack Mounting Kit - Long
- Easy-Installation Rack Mounting Kit - Short
- Easy-Installation Rack Mounting Kit - Long
- Fingerprint Identification Module

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.

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.

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* Features may have been added to the CL5708 / CL5716 since this manual was printed. Please visit our website to download the most up-to-date version of the manual.

Contents

About this Manual

This user manual is provided to help you get the most from your CL5708 / CL5716 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 CL5708 / CL5716 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 stage hookup to a complete 32-switch daisy chained operation are provided.

Chapter 3, Basic Operation, explains the fundamental concepts involved in operating the CL5708 / CL5716.

Chapter 4, OSD Operation, provides a complete description of the CL5708 / CL5716's on-screen display (OSD), 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 CL5708 / CL5716 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 CL5708 / CL5716's firmware with the latest available versions.

An Appendix, provides specifications and other technical information regarding the CL5708 / CL5716.

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	ATEN TECH	http://www.aten-usa.com
	ATEN NJ	http://www.aten.com

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Chapter 1
Introduction

Overview

The CL5708 / CL5716 Slideaway™ LCD KVMP Switch is an integrated LCD console and keyboard, video, and mouse (KVM) switch that offers secure access to 8 or 16 attached computers and mounts in only 1U of rack space. It features an independently retractable 17" LCD monitor and keyboard with built-in touchpad. An extra console port is provided on the rear panel to manage the LCD KVM switch from an external console (monitor, keyboard, and mouse) up to 20 meters away. For added convenience it also supports an external USB mouse.

The CL5708 / CL5716 supports both PS/2 and USB keyboards and mice for the connected computers, and the CL5708 / CL5716 supports USB peripheral devices to be used with the attached computers. A single CL5708 / CL5716 can control up to 8 or 16 computers. As many as 31 additional compatible KVM switches can be daisy chained together, so that up to 256 or 512 computers can all be controlled from a single keyboard, monitor, and mouse console. (See the Appendix for a list of compatible ATEN switches.)

The CL5708 / CL5716 is built on a modular design. The KVM section can be detached from the switch section for convenient maintenance and repair. A special feature of the CL5708 / CL5716 D and E models is their use of DC power instead of the AC power used by most switch products.

There are four models in the series as outlined in the following table:

Model	LCD Panel	KVM Ports	Power
CL5708D	17"	8	DC
CL5716D	17"	16	DC
CL5708M	17"	8	AC
CL5716M	17"	16	AC

Your CL5708 / CL5716 investment is protected by an included firmware upgrade utility. You can stay current with the latest functionality improvements by downloading firmware update files from our website as they become available, and using the utility to quickly and conveniently perform the upgrade.

Setup is fast and easy: plugging cables into their appropriate ports is all that is entailed. Because the CL5708 / CL5716 intercepts keyboard input directly, there is no software to configure, no need to get involved in complex installation routines, nor any need to be concerned with incompatibility problems. Access to any computer connected to the installation is easily accomplished either by entering hotkey combinations from the keyboard, or by means of a powerful, mouse driven, OSD (on-screen display) menu system. A convenient *Auto Scan* feature also permits automatic scanning and monitoring of the activities of all computers running on the installation one by one.

There is no better way to save time and money than with a CL5708 / CL5716 installation. By using the CL5708 / CL5716 with its sliding LCD console to manage your installation, you: eliminate the expense of having to purchase a separate keyboard, monitor, and mouse for each computer; save all the space those extra components would take up; save the space that a keyboard, monitor, and mouse would take with a standard KVM switch; save on energy costs; and eliminate the inconvenience and wasted effort involved in constantly moving from one computer to another.

Features

- Integrated KVM console with 17" LCD in a Slideaway™ housing
- Space saving technology – up to two consoles (one bus) control up to 8 or 16 computers
- Daisy chain up to 31 additional units – control up to 256 (CL5708) or 512 (CL5716) computers from a single console
- Dual Interface – supports computers with PS/2 or USB keyboards and mice
- USB port allows each computer to access USB peripherals[1]
- Multiplatform support – Windows 2000/XP/Vista, Linux, Mac, and Sun
- Supports multimedia USB keyboards for PC, Mac and Sun
- Auto PS/2 and USB interface detection
- Keyboard and mouse emulation (PS/2 and USB) for smooth switching and simultaneous booting of multiple computers even when the console focus is elsewhere
- Superior video quality – supports resolutions up to 1280 x 1024 @ 75 Hz
- No software required – convenient computer selection via mouse-driven, intuitive OSD (on-screen display) menus and hotkeys
- Auto-senses station's position on daisy chained installations; no need for manual dip switch setting; front panel led indicates station's position
- Port names automatically reconfigured when station sequence is changed
- Two level password security – authorized users view and control computers
- Supports one administrator and four user accounts with separate profiles
- Auto Scan mode enables continuous monitoring of user-selected computers
- Broadcast support – commands from the keyboard can be broadcast to all available computers on the installation
- Hot pluggable – add or remove computers without having to power down the switch
- Beeper on/off via hotkey and OSD
- Firmware upgrades to all the chained KVM switches at the same time via the daisy chain cable

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1. The USB peripheral function only works with USB cable set connections. It will not work with PS/2 cable set connections.

- Extra console port – manage computers from an external console (monitor, USB or PS/2 keyboard and mouse)
- Supports external USB mouse
- Conveniently located station and port selectors, each with two 7-segment LED displays to quickly switch to target computers
- Dedicated *Hotkey* mode and *OSD Invocation Keys* reduce the number of keystrokes and provide quick access to these functions
- OSD tree structure makes finding and managing computers easy
- Console lock – enables the console drawer to remain securely locked away when not in use
- OSD port list automatically expands when new stations are added
- Security – Administrator/User password authorization for enhanced security protection; Administrator access rights synchronized between master and slave stations
- OSD screen automatically adjusts to resolution changes
- Two types of logout: manual and timed
- Slideaway™ housing is slightly less than 1U with top and bottom clearance for smooth operation in 1U of rack space
- DDC emulation – video settings of each computer are automatically adjusted for optimal output to the monitor
- Standard 105-key keyboard
- Keyboard status restored when switching computers

Requirements

External Console

The following hardware components are required for the external console:

- A VGA, SVGA, or multisync monitor capable of displaying the highest resolution provided by any computer in the installation.
- A USB or PS/2 keyboard and mouse

Computers

The following equipment must be installed on each computer:

- A VGA, SVGA, or multisync video graphics card with an HDB-15 port.

  Note: The integrated LCD monitor's maximum resolution is 1280 x 1024 @ 75 Hz. Make sure that none of the computer resolution settings exceed the LCD monitor's maximum resolution.

- PS/2 mouse and keyboard ports (6-pin Mini-DIN), or at least one USB port.
- Direct support Sun USB systems; or, for Sun legacy systems, an ATEN CV130A Sun Console Converter.

Cables

Substandard cables may damage the connected devices or degrade overall performance. For optimum signal integrity and to simplify the layout, we strongly recommend that you use the high quality CS Custom Cable sets described below:

Function		Length	Part Number
KVM switch to KVM switch (Daisy chaining)		0.6 m 1.8 m	2L-1700 2L-1701
KVM switch to computer	PS/2	1.2 m 1.8 m 3.0 m 6.0 m 1.8 m	2L-5201P 2L-5202P 2L-5203P 2L-5206P 2L-5702P
	USB	1.2 m 1.8 m 3.0 m 5.0 m	2L-5201U 2L-5202U 2L-5203U 2L-5205U

<u>Operating Systems</u>

Supported operating systems are shown in the table, below:

OS		Version
Windows		2000 and higher
Linux	RedHat	7.1 and higher
	SuSE	9.0 and higher
	Mandriva (Mandrake)	9.0 and higher
UNIX	AIX	4.3 and higher
	FreeBSD	4.2 and higher
	Sun	Solaris 8 and higher
Novell	Netware	5.0 and higher
Mac		OS 9 and higher
DOS		6.22

Components

Front View
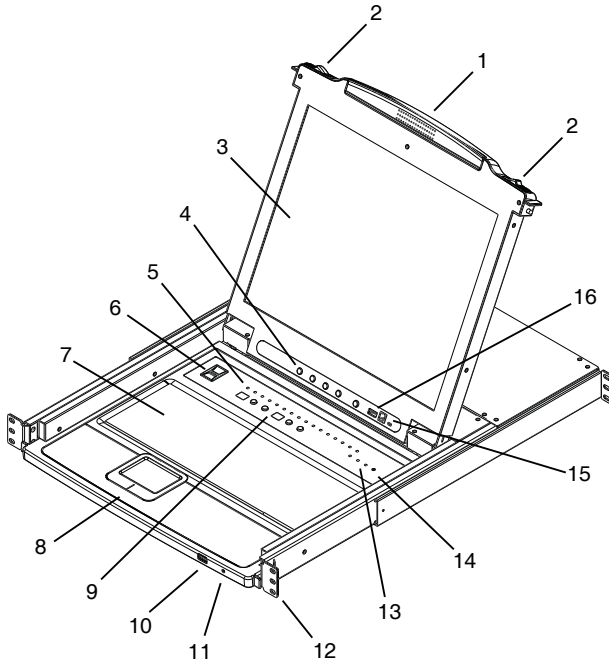
Note: The CL5716 is pictured in the diagrams of this chapter. However, the CL5708 is the same as the CL5716, except that it has 8 KVM ports.

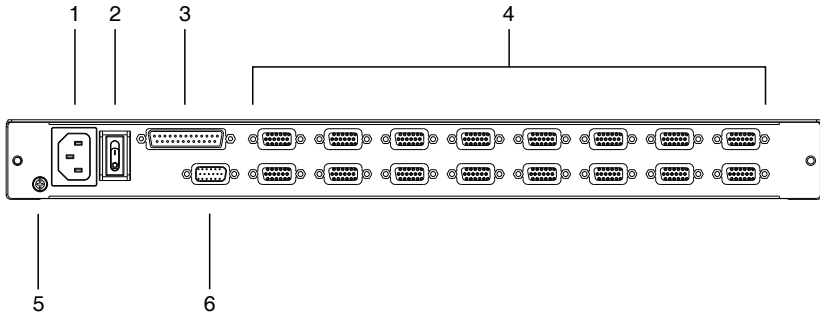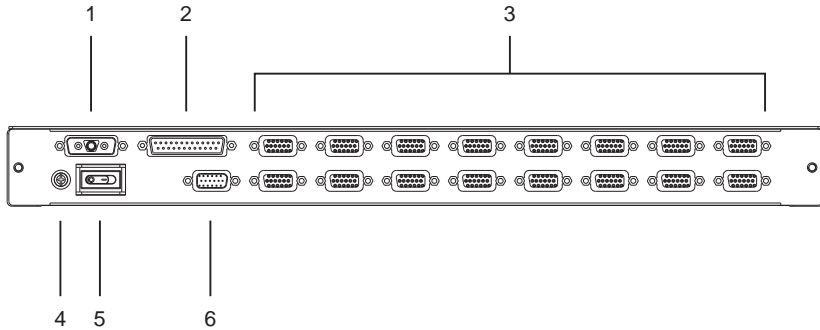| No.	Component	Description
1	Handle	Pull to slide the KVM module out; push to slide the module in (see item 2 in this table).
2	Slide Release	In order to slide the console out, you must first release it by sliding these tabs to the inside. See page 21 for details on sliding the console in and out.
3	LCD Display	After sliding the KVM module out, flip up the cover to access the LCD monitor.
4	LCD Controls	The LCD On/Off switch is located here, as well as buttons to control the position and picture settings of the LCD display. See page 25 for details.
5	Port LEDs	An **ON LINE** LED lights to indicate that the computer attached to its corresponding port is up and running.
6	Fingerprint Reader (Optional)	Use the fingerprint reader as an alternate means of logging in to the switch. See *SET USER LOGIN*, page 38.
7	Keyboard	Standard 105-key keyboard
8	Touchpad	Standard mouse touchpad
9	Station/Port Switches	Press the **UP** or **DOWN** buttons for the Port ID and Station ID to bring the KVM focus to the computer attached to the corresponding port. See *Manual Port Switching*, page 28.
10	External Mouse Port	A USB mouse port is provided for users who prefer to use an external mouse.
11	Power LED	Lights to indicate that the unit is receiving power.
12	Rack Mounting Brackets	The rack mount brackets located at each corner of the unit secure the chassis to a system rack.
13	Lock LEDs	Num Lock, Caps Lock, Scroll Lock LEDs are located here.
14	Reset Switch	Located to the right of the Lock LEDs. Press this recessed switch in with a small object to perform a system reset.
15	Firmware Upgrade Section	◆ **Firmware Upgrade Port:** The Firmware Upgrade Cable that transfers the firmware upgrade data from the administrator's computer to the CL5708 / CL5716 plugs into this RJ-11 connector. ◆ **Firmware Upgrade Switch:** During normal operation this switch should be in the NORMAL position. (See *The Firmware Upgrade Utility*, page 57 for firmware upgrading details.)
16	USB Port	The USB port is available to connect a USB 1.1 peripheral device (flash drive, CD-ROM drive, etc.) to the switch.

Rear View (AC Power)

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	Daisy Chain Port	When daisy chaining units, the cable plugs in here.
4	KVM Port Section	The cables that link to the computers plug in here.
		Note: The shape of these SPHD connectors has been specifically modified so that only KVM cables designed to work with this switch can plug in (see the *Cables* section on page 5, for details). Do **NOT** attempt to use ordinary 15 pin VGA connector cables to link these ports to the computers.
5	Grounding Terminal	The grounding wire used to ground the switch attaches here.
6	External Console Port	For flexibility and convenience, the CL5708 / CL5716 supports an independent, external, KVM console. The external console keyboard, monitor, and mouse cables plug in here.

Rear View (DC Power)

No.	Component	Description
1	Power Socket	The DC power cord plugs in here.
2	Daisy Chain Port	When daisy chaining units, the cable plugs in here.
3	KVM Port Section	The cables that link to the computers plug in here. **Note:** The shape of these SPHD connectors has been specifically modified so that only KVM cables designed to work with this switch can plug in (see the *Cables* section on p. 5, 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.
5	Power Switch	This standard rocker switch powers the unit on and off.
6	External Console Section	For flexibility and convenience, the CL5708 / CL5716 supports an independent, external, KVM console. The external console keyboard, monitor, and mouse cables plug in here.

Hardware Setup

Overview

For convenience and flexibility that allows mixing PS/2 and USB interfaces, the CL5708 / CL5716 design utilizes custom KVM cables that serve as intermediaries between the KVM switch and the connected computers.

A separate custom KVM cable is required for each computer connection. The custom KVM cables are listed in the *Cables* section on page 5. 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 63. Please review it before proceeding.

2. Make sure that the power to all devices connected to the installation are turned off. You must unplug the power cords of any computers that have the Keyboard Power On function.

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 76 for details.

Standard Rack Mounting

A standard rack mounting kit is provided with your CL5708 / CL5716. The kit enables the switch to be mounted in rack with a depth of 42.0–77.0 cm.

L Brackets

Side Mountng Brackets
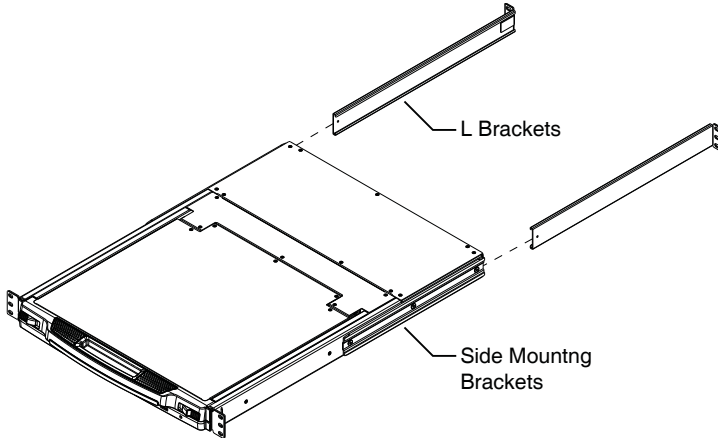
To rack mount the switch, do the following:

1. While one person positions the switch in the rack and holds it in place, the second person loosely screws the front brackets to the rack.
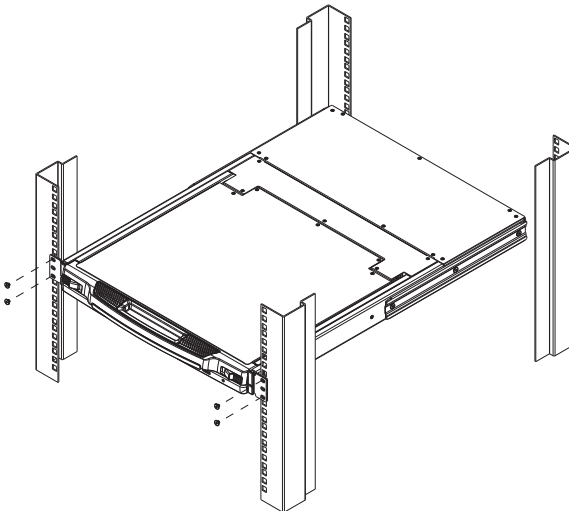
2. While the first person still holds the switch in place, the second person slides the L brackets into the switch's side mounting brackets, from the rear until the bracket flanges contact the rack, then screws the L brackets to the rack.
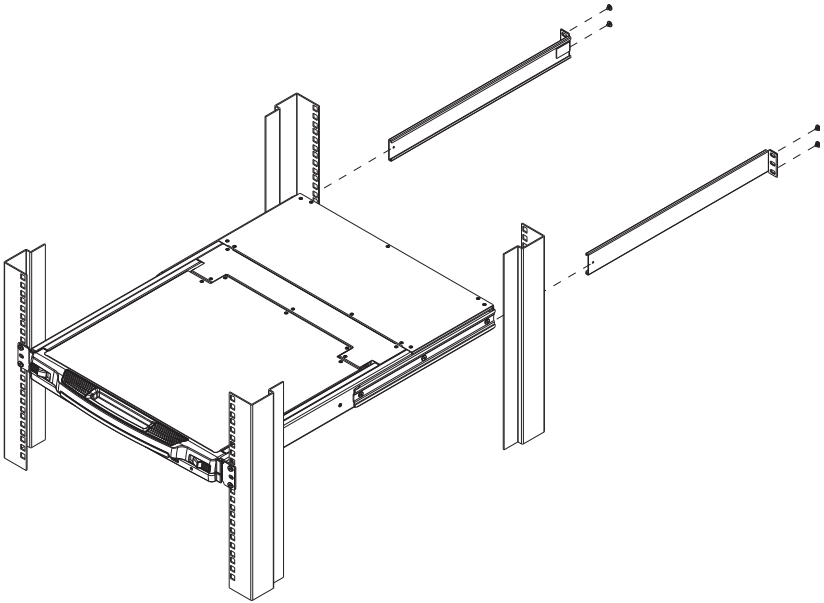
3. After the L brackets have been secured, tighten the front bracket screws.

Grounding

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

Use a grounding wire to ground the CL5708 / CL5716 by connecting one end of the wire to the grounding terminal, and the other end of the wire to a suitable grounded object.

Single Level Installation

In a single level installation, there are no additional switches daisy chained from the first unit. To set up a single level installation, refer to the installation instructions and diagrams on the following pages (the numbers in the diagrams correspond to the numbers of the installation steps).

AC Power Models

1. Ground the unit.

2. If you choose to connect an external console to the CL5708 / CL5716, use the console cable provided to plug a keyboard, monitor, and mouse into the *Console Port*. See *Cabling Diagrams*, page 18.
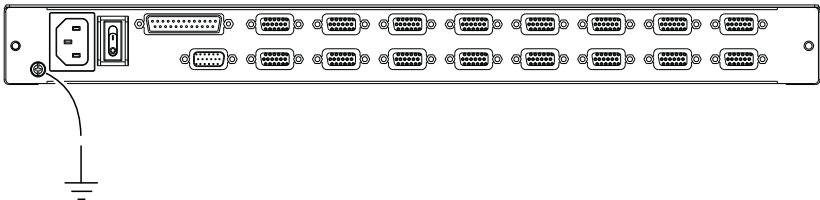
   > **Note:** 1. Using an external console is optional.
   >
   > 2. The maximum distance between the switch and the external monitor is 20 m.

3. For each of the computers you are installing, use a KVM cable set (as described in the *Cables* section on page 5), to connect any available KVM port to the computer's keyboard, video and mouse ports. See *KVM Cable Installation Diagrams*, page 18.

   > **Note:** The maximum distance between the switch and a computer is 10 m.

4. Plug the power cord into the CL5708 / CL5716 power socket and into a AC power source.

5. Power on the CL5708 / CL5716 (see *Powering Off and Restarting*, page 24 for details). After the CL5708 / CL5716 is powered on, power on the computers.

AC Power Installation Diagram

DC Power Models

1. Ground the unit.

2. If you choose to connect an external console to the CL5708 / CL5716, use the console cable provided to plug a keyboard, monitor, and mouse into the *Console Port*. See *Cabling Diagrams*, page 18.

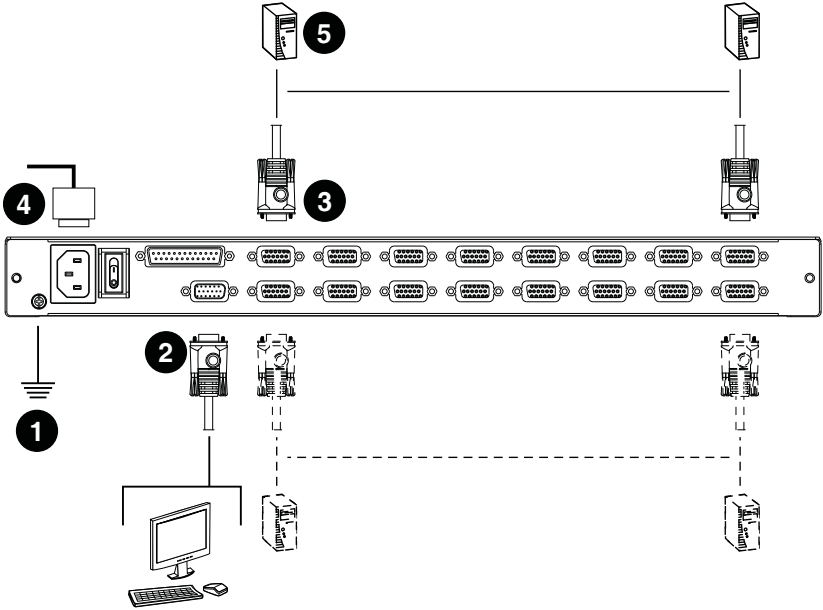   **Note:** 1. Using an external console is optional.

    2. The maximum distance between the switch and the external monitor is 20 m.

3. For each of the computers you are installing, use a KVM cable set (as described in the *Cables* section on page 5), to connect any available KVM port to the computer's keyboard, video and mouse ports. See *KVM Cable Installation Diagrams*, page 18.

    Note: The maximum distance between the switch and a computer is 10 m.

4. Plug the power cord into the CL5708 / CL5716 power socket and into a DC power source.

5. Power on the CL5708 / CL5716 (see *Powering Off and Restarting*, page 24 for details). After the CL5708 / CL5716 is powered on, power on the computers.

DC Power Socket

The DC Power Socket (located on the unit's rear panel) has its negative and positive pins arranged as shown in the diagram below:

DC Power Installation Diagram
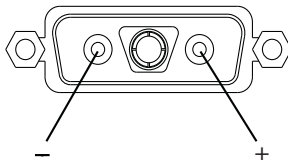
DC Power Installation Diagram
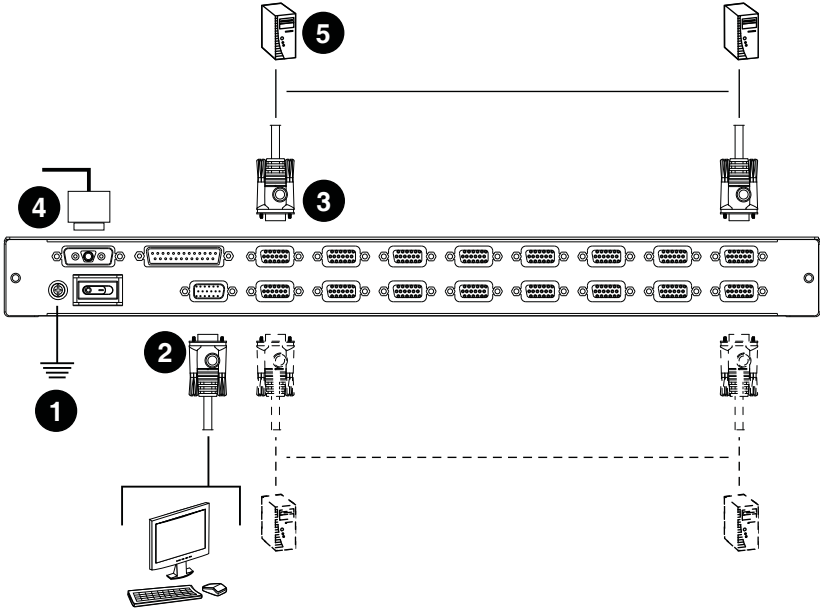
Cabling Diagrams

Use the following diagrams as a guide for attaching cables to an external console and/or computers you will be connecting to the CL5708 / CL5716.

Console Cable Installation Diagram

USB   VGA   PS/2
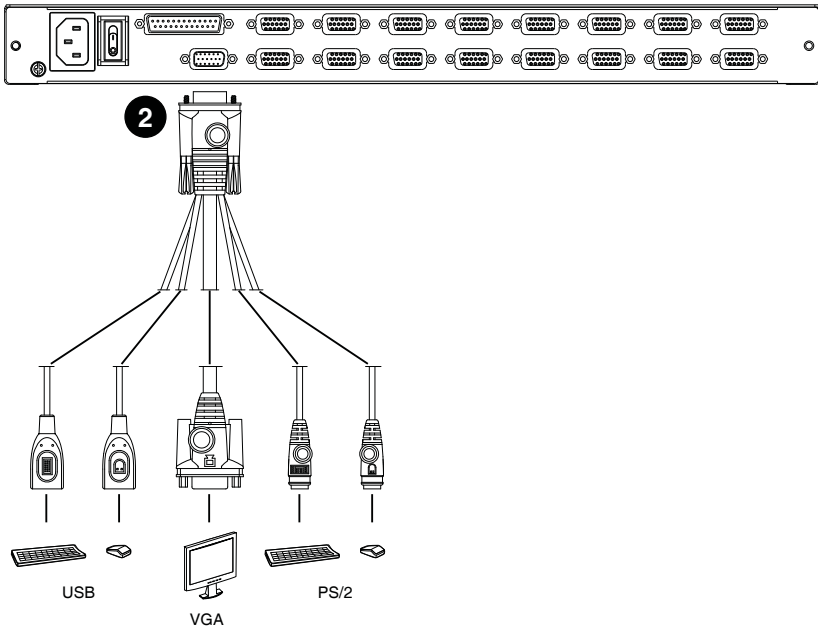
KVM Cable Installation Diagrams

USB KVM Cable Connection
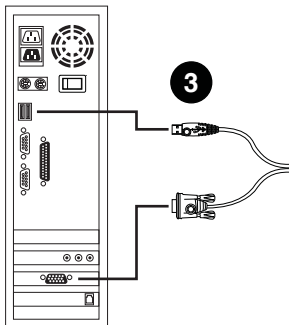
PS/2 KVM Cable Connection
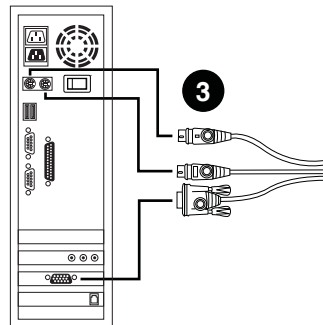
Daisy Chain Installations

To control even more computers, up to 31 compatible KVM switches can be daisy chained down from the CL5708 / CL5716 (see the Appendix for a list of compatible ATEN switches). In a complete installation, as many as 256 or 512 computers can be controlled from the CL5708 / CL5716. Tables showing the relation between the number of computers and the number of units needed to control them are provided on page 71 in the Appendix.

To set up a daisy chain installation, first make sure that power to all the devices you will be connecting have been turned off. Then, refer to the daisy chain installation diagram on page 20, as you do the following:

1. Use a daisy chain cable set (described in the *Cables* section, page 5), to connect the *Chain Out* port of the CL5708 / CL5716 to the *Chain In* port of the first slave switch (first station out to second station in, second station out to third station in, etc.).

2. Use compatible KVM cable sets to connect any available KVM port on the daisy chained switch to the keyboard, video and mouse ports of the computers you are installing. See *KVM Cable Installation Diagrams*, page 18.

   Note: The maximum distance between the switch and a computer is 10 m.

3. Repeat the above steps for any additional units you wish to add to the chain.

4. Power up the installation according to the following procedure:

   a) Power on the CL5708 / CL5716.

   b) Power on each station on the installation in turn (second station, then third station, etc.).

      In each case, wait for the station ID to be ascertained and displayed on the current station before powering on the next one.

   c) After all the stations are turned on, power on the computers.

Note: 1. The maximum distance between any two stations is 15 m.

2. The total maximum distance from the first station to the last station is 100 m, regardless of the number of stations in the chain.

Daisy Chain Installation Diagram

CHAIN OUT

CL5708 / CL5716

CHAIN OUT

CHAIN IN

COMPATIBLE
SWITCH

CHAIN OUT

CHAIN IN

COMPATIBLE
SWITCH

TO NEXT
STATION
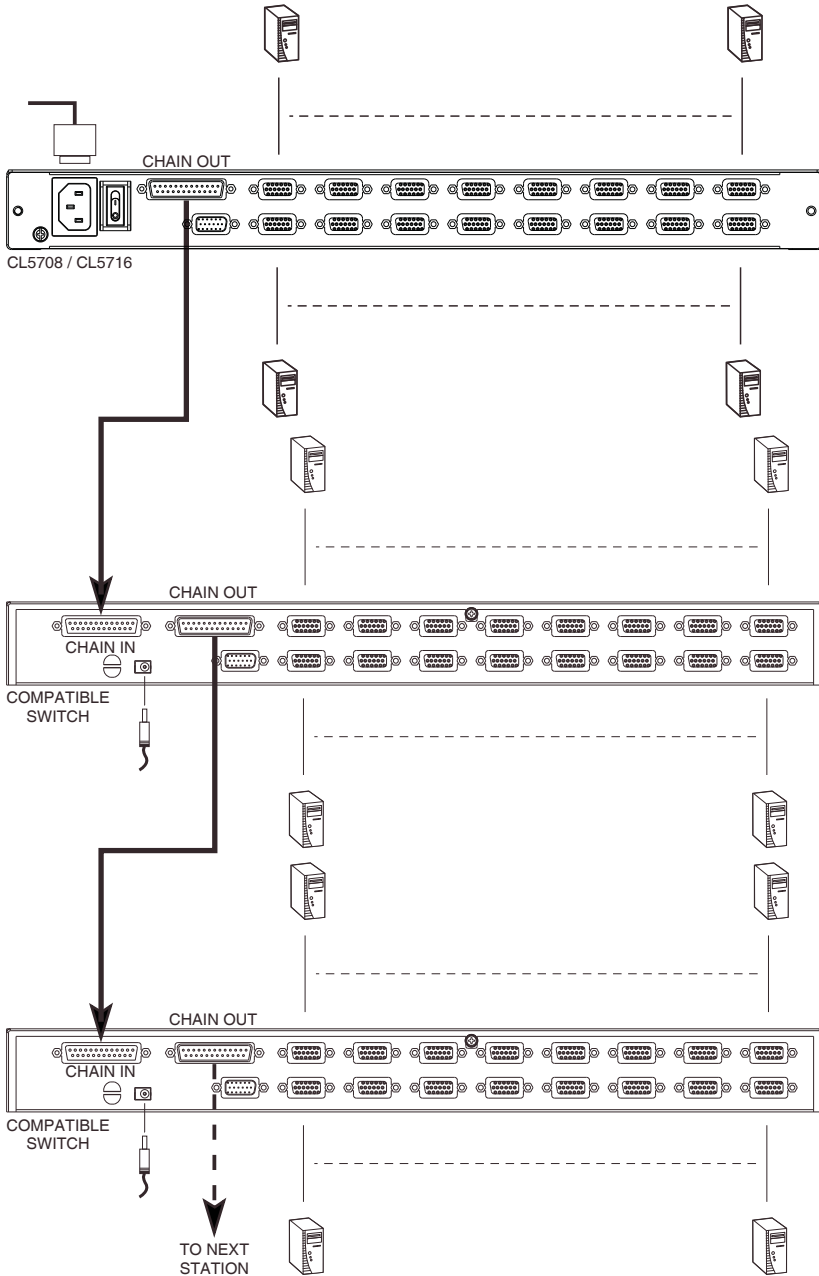
Basic Operation

Opening the Console

The CL5708 / CL5716'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 pushing the catches on the unit's front panel toward the center of the switch.
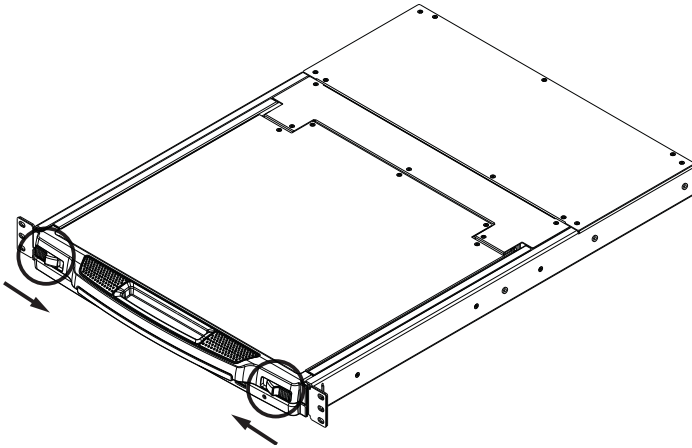
Closing the Console

To slide the console module back in, close the cover and do the following:

1. Pull the safety catches on the unit's side rails toward you and push the module in until it stops.

2. Release the catches; pull the module slightly toward you; then push it all the way in.
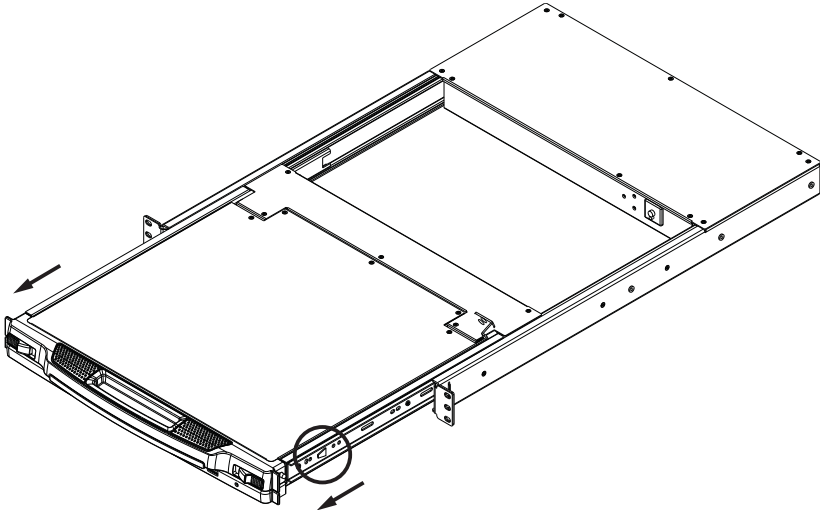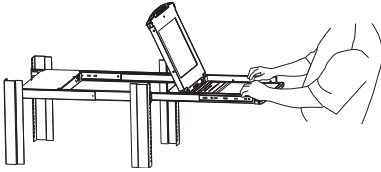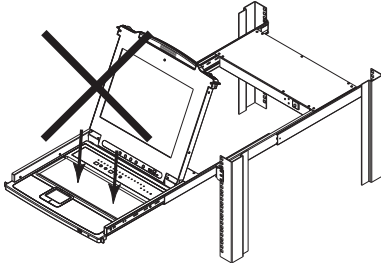
Note: The reason for the two step procedure is to minimize the chances of you pinching your fingers when sliding the module in.

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.

	Right! Rest your hands and arms lightly on the keyboard module as you work.
	Wrong! ◆ **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 CL5708 / CL5716, do the following before restarting it:

1. Shut down all the computers that are attached to the CL5708 / CL5716.

Note:	Unplug the power cords of any computers that have the *Keyboard Power On* function. Otherwise, the CL5708 / CL5716 will still receive power from the computers.

2. Unplug the CL5708 / CL5716 from its power source.

3. Wait 10 seconds, then plug the CL5708 / CL5716 back in.

4. After the CL5708 / CL5716 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	◆ 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.

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.

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*, page 25

Hot Plugging

The CL5708 / CL5716 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, however, the procedures described below must be followed:

Changing Station Positions

You can change a station's position by simply disconnecting it from its master and reconnecting it to another switch in the chain. In order for the OSD menus to correspond to the change, the station IDs must be reset in the OSD. See *RESET STATION IDS*, page 41, for details.

Hot Plugging KVM Ports

You can add or remove computers by plugging/unplugging them into/from a switch's KVM ports. In order for the OSD menus to correspond to the change, however, you must manually reconfigure the OSD to reflect the new Port information. See *F3: SET*, page 36, and *F4: ADM*, page 38, for details.

Note: If the computer's Operating System does not support hot plugging, this function may not work properly.

Hot Plugging External Console Ports

The external keyboard, monitor, mouse and front panel mouse connections can all be hot plugged. When hot plugging a mouse:

◆ You may unplug and replug the mouse (to reset the mouse, for example), as long as you use the same mouse.

◆ If you plug in a different mouse, all the stations and all the computers on the installation must be shut down for 10 seconds, then restarted following the power up sequence described under Step 5 on page 19.

Port Selection

The CL5708 / CL5716 provides three port selection methods to access the computers on the installation: Manual, an OSD (on-screen display) menu system, and Hotkeys. Manual port switching is discussed below. See Chapter 4, *OSD Operation* and Chapter 5, *Keyboard Port Operation* for more information.

Manual Port Switching

Use the **UP** and **DOWN** Port ID / Station ID selection buttons located on the keyboard module (page 8) to switch KVM focus to any port on the installation. Continually pressing any button cycles through the list of available ports/stations.

Port ID Numbering

Each KVM port on the installation is assigned a unique Port ID. The Port ID is made up of two parts: a *Station Number*, and a *Port Number*:

◆ The *Station Number* is a two digit number of the switch's position in the daisy chain sequence. This number is displayed on the front panel station ID LED.

◆ The *Port Number* is a two digit number of the port on the CL5708 / CL5716 station that a computer is connected to. This number is displayed on the front panel port ID LED.

◆ When keying in a Port ID number, the station number precedes the port number.

◆ Station and port numbers from 1–9 are padded with a preceding zero, so they become 01–09.

For example, a computer attached to **Port 6** of **Station 12** would have a Port ID of: **12-06**.

USB Peripheral Devices

The front panel USB port is available to connect a USB peripheral device (flash drive, CD-ROM drive, printer, etc.) to the CL5708 / CL5716. Any computer connected to the CL5708 / CL5716 can access the USB peripheral on a one-at-a-time basis. The peripheral device is available to computers connected to the CL5708 / CL5716 on the same level only, and is not available to computers connected to daisy chained switches.

The USB peripheral device is automatically detected on target computers when switching ports on the CL5708 / CL5716. For example, when switching from a computer connected to port 1 to a computer connected to port 2, the peripheral device automatically disconnects from the computer on port 1 and connects to the computer on port 2.

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OSD Operation

OSD Overview

The OSD (on-screen display) 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 password. If this is the first time that the OSD is used, or if the password function has not been set, simply press **[Enter]**. The OSD main screen displays in 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. However, if the password function has been set, you must provide an appropriate administrator/user password in order to access the OSD.

OSD Hotkey

You can display the OSD on the LCD or an external console monitor while also viewing the display of any port on the CL5708 / CL5716 by pressing the **[Scroll Lock]** key twice.

Note: You can optionally change the OSD hotkey to the Ctrl key, in which case you would press **[Ctrl]** twice (see *OSD Hotkey*, page 36). With this method, you must press the same [Ctrl] key.

OSD Main Screen

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

```
F1:GOTO  F3:SET  F5:SKP  F7:SCAN
F2:LIST  F4:ADM  F6:BRC  F8:LOUT
ADMINISTRATOR
 LIST:ALL
 SN--PN  QV  ☼   NAME
 01
    ─01  ◄        ASUS  P4P800
    ─02           APPLE  G5
    ─03  ◄        SUN  BLADE150
    ─04           MSI  NEO2
    ─05           IBM  SERVER
    ─06           HP  G4
    ─07           DELL  GX620
```

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 39, 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

The table below describes the OSD Main Screen headings.

Heading	Description
SN--PN	This column lists the port ID numbers (station number - port number) 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 40), 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 40), 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 39), that match the name or port ID pattern, regardless of the current list settings (see *F2 LIST*, page 35, 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 ACCESSIBLE PORTS*, page 39).
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 40), 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 which hotkey activates the OSD function: **[Scroll Lock] [Scroll Lock]** or **[Ctrl] [Ctrl]**. Since the [Ctrl] key combination may conflict with programs running on the computers, the default is the [Scroll Lock] combination.
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. 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;Scan	Determines how long the focus dwells on each port as it cycles through the selected ports in Auto Scan mode (see *F7 SCAN*, page 44). Key in a value from 1–255 seconds, then press **[Enter]**. Default is 5 seconds; a setting of 0 disables the SCAN function.

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Setting	Function
SCAN–SKIP MODE	Selects which computers will be accessed under skip mode (see *F5 SKP*, page 42), and Auto Scan mode (see *F7 SCAN*, page 44. Choices are: **ALL** - All the ports which have been set accessible (see *SET ACCESSIBLE PORTS*, page 39); **QUICK VIEW** - Only those ports which have been set accessible and have been selected as quick view ports (see *SET QUICK VIEW PORTS*, page 40); **POWERED ON** - Only those ports which have been set accessible and are powered on; **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. **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 40, 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 occurs with programs running on the computers.
HOTKEY	Sets the keyboard shortcut for invoking *Hotkey Mode* (see page 45). Choices are: **[NUM LOCK] + [-]** (minus) (default), and **[CTRL] + [F12]**.
OSD LANGUAGE	Sets the language used in the OSD. Choices are: English, German, Japanese, Simplified Chinese and Traditional Chinese.
TOUCHPAD	Enables / disables the touchpad.

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	Use this function to set login mode, usernames, passwords and fingerprints for the administrator and users.
	SET USERNAME AND PASSWORD
	◆ Usernames and passwords for one administrator and four users can be set.
	◆ 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).
	◆ For each individual, key in the username and password, confirm the password, then press **[Enter]**.
	◆ To modify or delete a previous username and/or password, use the backspace key to erase individual letters or numbers. Press **[Enter]** when done.
	◆ Usernames and passwords are not case sensitive. Usernames are displayed in capital letters in the OSD.
	SET FINGERPRINT*
	Selecting this option initializes the fingerprint reader to record fingerprints used in place of a username and password when logging in. Although up to 10 fingers can be scanned for each user account, a maximum of 20 can be stored in the KVM, depending on the size of the fingerprint data file.

* Available on models with fingerprint reader.

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Setting	Function
SET USER LOGIN (continued)	**To record a fingerprint**: 1. Select an item from the list and double-click it, or move the highlight bar to it and press **[Enter]**. 2. Swipe the selected finger across the reader 3 times as directed. 3. Once the fingerprint is successfully recorded, you have the option of recording another. **Note:** ◆ Pressing F1 will delete the highlighted fingerprint from memory. ◆ Pressing F2 will delete all fingerprints for the current user from memory. ◆ Pressing F3 will edit the name of the highlighted fingerprint. ◆ Pressing F5 will delete the highlighted fingerprint name. SET LOGIN MODE* Use this function to set user login mode to PASSWORD OR FINGERPRINT (either username and password or just fingerprint can be used to login) or PASSWORD + FINGERPRINT (username, password, and then fingerprint must all be used to login). ◆ In PASSWORD + FINGERPRINT mode, if the subsequent fingerprint does not match the previously entered username, user will not be able to login. This mode provides better access security.
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.
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.

* Available on models with fingerprint reader.

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Setting	Function
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; 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 75) 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 44); or an invalid entry is made on an OSD menu. The default is **Y**.
SET QUICK VIEW PORTS	This function lets the administrator select which ports to include as quick view ports. ◆ 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. ◆ If one of the quick view options is chosen for the LIST view (see *F2 LIST*, page 35), 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 *SCAN/SKIP MODE*, page 37), only a port that has been selected here will be auto-scanned. The default has no ports selected for quick view.

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Setting	Function
RESET STATION IDS	If you change the position of one of the stations in the daisy chain, the OSD settings will no longer correspond to the new location. This function directs the OSD to rescan the station positions of the entire installation and updates the OSD so that the OSD station information corresponds to the new physical layout.
	Note: Only the station numbers get updated. Except for the port names, all administrator settings (such as SET ACCESSIBLE PORTS, SET QUICK VIEW PORTS, etc.) must be input again for all of the computers affected by the change.
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).
	To set the port operating system:
	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	In order to upgrade the CL5708 / CL5716 firmware (see page 57), you must first enable Firmware Upgrade mode with this setting.
	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]**.
	Choices are: AUTO (default), ENGLISH (US), ENGLISH (UK), GERMAN (GER.), GERMAN (SWISS), FRENCH, HUNGARIAN, ITALIAN, JAPANESE, KOREAN, RUSSIAN, SPANISH, SWEDISH and TRADITIONAL CHINESE.
SET CONSOLE MODE	This setting selects which consoles (internal/external) are enabled:
	0 – Both consoles enabled **1 –** LCD console only **2 –** External console only
	Use the spacebar to cycle to the choice you want. The default is 0.

F5: SKP

Clicking the **F5** field or pressing **[F5]** invokes Skip 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 36).

◆ 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

   press [↑] to switch to the last computer on the previous station in the list

   press [↓] to switch to the first computer on the next station 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 37).

◆ 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 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.

F7: 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 37).

◆ The amount of time that each port displays for is set with the *Scan Duration* setting under the **F3: SET** function (see page 36). 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 48, 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 CL5708 / CL5716 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] + [-]

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.

---

1. Make sure that the *Hotkey Command Mode* function is enabled and that you key in the appropriate *Hotkey*. See page 37 for details.

Select the Active Port

Each KVM port is assigned a port ID (see *Port ID Numbering*, page 27). 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 37 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.

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 37, for information regarding accessible ports.)
→	Skips to the next accessible port.
↑	Skips to the last accessible port of the previous station.
↓	Skips to the first accessible port of the next station.

   - 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 system reset. For more information see *Reset Switch*, page 8.

Hotkey Beeper Control

The beeper (see Activate Beeper, page 40) 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 37) 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 36) 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.

Restore Default Values

This administrator only hotkey restores the CL5708 / CL5716 default values. See *RESTORE DEFAULT VALUES*, page 40. 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

[Num Lock] + [-] or [Ctrl] + [F12]	[A] [Enter] or [Q] [Enter]	Invokes *Auto Scan* mode. When *Auto Scan* 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.
	[B]	Toggles the beeper on or off.
	[Esc] or [Spacebar]	Exits hotkey mode.
	[F1]	Set Operating System to Windows
	[F2]	Set Operating System to Mac
	[F3]	Set Operating System to Sun
	[F5]	Performs a keyboard / mouse reset on the target computer.
	[H]	Toggles the *Quick Hotkey* invocation keys between [Ctrl] + [F12] and [Num Lock] + [-].
	[R] [Enter]	This administrator only hotkey restores the switch's default values. See *RESTORE DEFAULT VALUES*, page 40.
	[SN][PN] [Enter]	Switches access to the computer that corresponds to that port ID.
	[T]	Toggles the *OSD Hotkey* between [Ctrl] [Ctrl] and [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.
	[↑]	Invokes *Skip* mode and skips from the current port to the last accessible port of the previous station.
	[↓]	Invokes *Skip* mode and skips from the current port to the first accessible port of the next station.

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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.

The Firmware Upgrade Utility

Introduction

The purpose of the Windows-based firmware upgrade utility is to provide an automated process for upgrading the CL5708 / CL5716 and compatible adapter cable firmware. 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 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 switch.
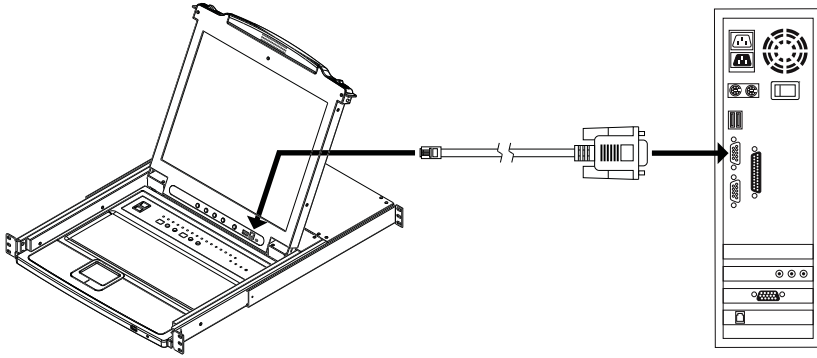
> **Note:** On a daisy chained installation, the chained stations will automatically receive the upgrade via the daisy chain cables.

2. Shut down all the computers, but not the stations, on the KVM installation.

3. From your KVM switch console, login to the OSD as the administrator (see page 31) and select the **F4 ADM** function.

4. Scroll down to FIRMWARE UPGRADE. Press **[Enter]**, then press **[Y]** to invoke *Firmware Upgrade* mode (see page 41.).

Note: During *Firmware Upgrade* mode, the port LEDs will flash on and off.

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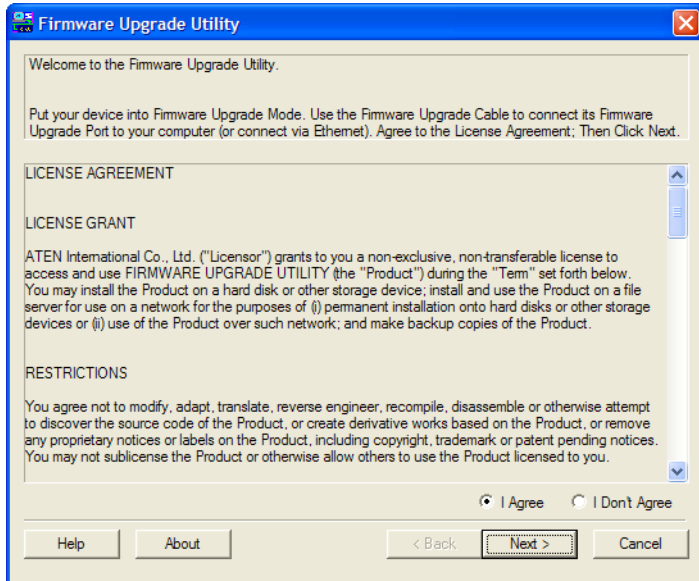
> **Note:** The screens shown in this section are for reference only. The wording and layout of the actual screens put up by the *Firmware Upgrade Utility* may vary slightly from these examples.

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:
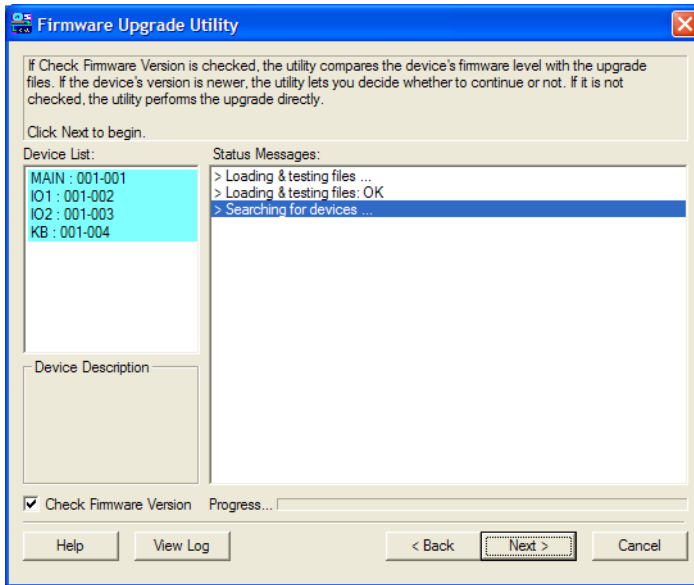
4. Click **Next** to perform the upgrade.

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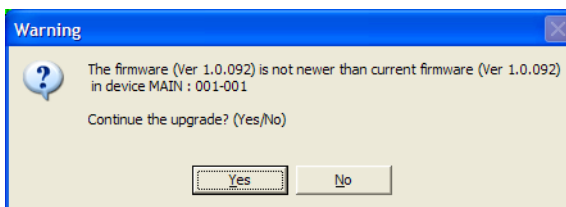
If you didn't enable *Check Firmware Version*, the utility installs the upgrade files without checking whether they are a higher level, or not.

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:
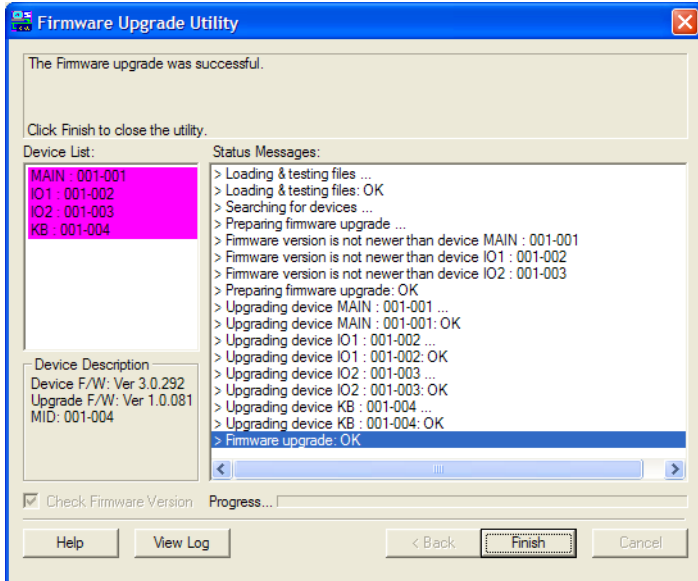
Click **Finish** to close the firmware upgrade utility.

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 switch. If it is part of a daisy chain, disconnect it from the chain.

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 switch back on and repeat the upgrade procedure.

5. After the switch has been successfully upgraded, power it off, and slide the *Firmware Upgrade Recovery Switch* back to the **Normal** position.

6. If the switch is part of a daisy chain, replace it in the chain.

7. Power the switch back on.

Appendix

Safety Instructions

General

- 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.

(Continues on next page.)

(Continued from previous page.)

- 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.

- Do not connect the RJ-11 connector marked "UPGRADE" to a public telecommunication network.

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.

- Use caution when pressing the device rail release latches and sliding a device into or out of a rack; the slide rails can pinch your fingers.

- After a device is inserted into the rack, carefully extend the rail into a locking position, and then slide the device into 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		ATEN TECH	support@aten-usa.com
		ATEN NJ	sales@aten.com
Online Support	Technical Support	ATEN TECH	http://www.aten-usa.com/support
		ATEN NJ	http://support.aten.com
	Troubleshooting Documentation Software Updates	ATEN TECH	http://www.aten-usa.com
		ATEN NJ	http://www.aten.com
Telephone Support		ATEN TECH	1-888-999-ATEN
		ATEN NJ	1-732-356-1703

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			CL5708D
Computer Connections	Direct		8
	Max		256 (via daisy chain)
Port Selection			OSD, Hotkeys, Pushbuttons
Connectors	External Console Port		1 x SPHD-18 (Male)
	External Mouse Port		1 x USB Type-A (Female)
	KVM Ports		8 x SPHD-15 (Female)
	Daisy Chain Port		1 x DB-25 (Male)
	FW Upgrade		1 x RJ-11 (Female)
	Power		1 x 3W3
	USB Port		1 x USB Type-A (Female)
Switches	Reset		1 x Semi-recessed Pushbutton
	Power		1 x Rocker Switch
	Firmware Upgrade		1 x Switch
	LCD Adjust		4 x Pushbutton
	LCD On/Off		1 x LED Pushbutton (Orange)
	Port Selection		2 x Pushbutton
	Station Selection		2 x Pushbutton
LEDs	On Line		8 (Orange)
	Port ID		2 x 7-segment LED Display (Yellow)
	Station ID		2 x 7-segment LED Display (Yellow)
	Power		1 (Dark Green)
	Lock	Num	1 (Green)
		Caps	1 (Green)
		Scroll	1 (Green)
Emulation	Keyboard / Mouse		PS/2, USB
Video			1280 x 1024 @ 75 Hz; DDC2B
Scan Interval (OSD Select)			1–255 sec.
Power Consumption			DC48V; 27W
Environment	Operating Temp.		0–40º C
	Storage Temp.		-20–60º C
	Humidity		0–80% RH, Noncondensing
Physical Properties	Housing		Metal + Plastic
	Weight		13.77 kg
	Dimensions (L x W x H)		63.40 x 48.00 x 4.40 cm

Function		CL5716D
Computer Connections	Direct	16
	Max	512 (via daisy chain)
Port Selection		OSD, Hotkeys, Pushbuttons
Connectors	External Console Port	1 x SPHD-18 (Male)
	External Mouse Port	1 x USB Type-A (Female)
	KVM Ports	16 x SPHD-15 (Female)
	Daisy Chain	1 x DB-25 (Male)
	FW Upgrade	1 x RJ-11 (Female)
	Power	1 x 3W3
	USB 1.1 Hub	1 x USB Type-A (Female)
Switches	Reset	1 x Semi-recessed pushbutton
	Power	1 x Rocker Switch
	Firmware Upgrade	1 x Switch
	LCD Adjust	4 x Pushbutton
	LCD On/Off	1 x LED Pushbutton (Orange)
	Port Selection	2 x Pushbutton
	Station Selection	2 x Pushbutton
LEDs	On Line	16 (Orange)
	Port ID	2 x 7-segment LED Display (Yellow)
	Station ID	2 x 7-segment LED Display (Yellow)
	Power	1 (Dark Green)
	Lock	Num	1 (Green)
		Caps	1 (Green)
		Scroll	1 (Green)
Emulation	Keyboard / Mouse	PS/2, USB
Video		1280 x 1024 @ 75 Hz; DDC2B
Scan Interval (OSD Select)		1–255 sec.
Power Consumption		DC48V; 27W
Environment	Operating Temp.	0–40° C
	Storage Temp.	-20–60° C
	Humidity	0–80% RH, Noncondensing
Physical Properties	Housing	Metal + Plastic
	Weight	14.00 kg
	Dimensions (L x W x H)	63.40 x 48.00 x 4.40 cm

Function		CL5708M
Computer Connections	Direct	8
	Max	256 (via daisy chain)
Port Selection		OSD, Hotkeys, Pushbuttons
Connectors	External Console Port	1 x SPHD-18 (Male)
	External Mouse Port	1 x USB Type-A (Female)
	KVM Ports	8 x SPHD-15 (Female)
	Daisy Chain	1 x DB-25 (Male)
	FW Upgrade	1 x RJ-11 (Female)
	Power	1 x 3-prong AC Socket
	USB 1.1 Hub	1 x USB Type-A (Female)
Switches	Reset	1 x Semi-recessed Pushbutton
	Power	1 x Rocker Switch
	Firmware Upgrade	1 x Switch
	LCD Adjust	4 x Pushbutton
	LCD On/Off	1 x LED Pushbutton (Orange)
	Port Selection	2 x Pushbutton
	Station Selection	2 x Pushbutton
LEDs	On Line	8 (Orange)
	Port ID	2 x 7-segment LED Display (Yellow)
	Station ID	2 x 7-segment LED Display (Yellow)
	Power	1 (Dark Green)
	Lock	Num	1 (Green)
		Caps	1 (Green)
		Scroll	1 (Green)
Emulation	Keyboard / Mouse	PS/2, USB
Video		1280 x 1024 @ 75 Hz; DDC2B
Scan Interval (OSD Select)		1–255 sec.
I/P Rating		100–240 VAC, 50/60 Hz, 1 A
Power Consumption		120V, 27.5W / 230V, 28W
Environment	Operating Temp.	0–40° C
	Storage Temp.	-20–60° C
	Humidity	0–80% RH, Noncondensing
Physical Properties	Housing	Metal + Plastic
	Weight	13.77 kg
	Dimensions (L x W x H)	63.40 x 48.00 x 4.40 cm

Function		CL5716M
Computer Connections	Direct	16
	Max	512 (via daisy chain)
Port Selection		OSD, Hotkeys, Pushbuttons
Connectors	External Console Port	1 x SPHD-18 (Male)
	External Mouse Port	1 x USB Type-A (Female)
	KVM Ports	16 x SPHD-15 (Female)
	Daisy Chain	1 x DB-25 (Male)
	FW Upgrade	1 x RJ-11 (Female)
	Power	1 x 3-prong AC Socket
	USB 1.1 Hub	1 x USB Type-A (Female)
Switches	Reset	1 x Semi-recessed Pushbutton
	Power	1 x Rocker Switch
	Firmware Upgrade	1 x Switch
	LCD Adjust	4 x Pushbutton
	LCD On/Off	1 x LED Pushbutton (Orange)
	Port Selection	2 x Pushbutton
	Station Selection	2 x Pushbutton
LEDs	On Line	16 (Orange)
	Port ID	2 x 7-segment LED Display (Yellow)
	Station ID	2 x 7-segment LED Display (Yellow)
	Power	1 (Dark Green)
	Lock	Num	1 (Green)
		Caps	1 (Green)
		Scroll	1 (Green)
Emulation	Keyboard / Mouse	PS/2, USB
Video		1280 x 1024 @ 75 Hz; DDC2B
Scan Interval (OSD Select)		1–255 sec.
I/P Rating		100–240 VAC, 50/60 Hz, 1 A
Power Consumption		120V, 27.5W / 230V, 28W
Environment	Operating Temp.	0–40º C
	Storage Temp.	-20–60º C
	Humidity	0–80% RH, Noncondensing
Physical Properties	Housing	Metal + Plastic
	Weight	14.00 kg
	Dimensions (L x W x H)	63.40 x 48.00 x 4.40 cm

Connection Tables

The following tables indicate the relationship between the number of units and the number of computers that they control on a daisy chained installation.

CL5708 to Compatible 8-Port Switches

No.	Computers	No.	Computers	No.	Computers	No.	Computers
1	1–8	9	65–72	17	129–136	25	193–200
2	9–16	10	73–80	18	137–144	26	201–208
3	17–24	11	81–88	19	145–152	27	209–216
4	25–32	12	89–96	20	153–160	28	217–224
5	33–40	13	97–104	21	161–168	29	225–232
6	41–48	14	105–112	22	169–176	30	233–240
7	49–56	15	113–120	23	177–184	31	241–248
8	57–64	16	121–128	24	185–192	32	249–256

CL5708 to Compatible 16-Port Switches

No.	Computers	No.	Computers	No.	Computers	No.	Computers
1	1–8	9	121–136	17	249–264	25	377–392
2	9–24	10	137–152	18	265–280	26	393–408
3	25–40	11	152–168	19	281–296	27	409–424
4	41–56	12	169–184	20	297–312	28	425–440
5	57–72	13	185–200	21	313–328	29	441–456
6	73–88	14	201–216	22	329–344	30	457–472
7	89–104	15	217–232	23	345–360	31	473–488
8	105–120	16	233–248	24	361–376	32	489–504

CL5716 to Compatible 8-Port Switches

No.	Computers	No.	Computers	No.	Computers	No.	Computers
1	1–16	9	73–80	17	137–144	25	201–208
2	17–24	10	81–88	18	145–152	26	209–216
3	25–32	11	89–96	19	153–160	27	217–224
4	33–40	12	97–104	20	161–168	28	225–232
5	41–48	13	105–112	21	169–176	29	233–240
6	49–56	14	113–120	22	177–184	30	241–248
7	57–64	15	121–128	23	185–192	31	249–256
8	65–72	16	129–136	24	193–200	32	257–264

CL5716 to Compatible 16-Port Switches

No.	Computers	No.	Computers	No.	Computers	No.	Computers
1	1–16	9	129–144	17	257–272	25	385–400
2	17–32	10	145–160	18	273–288	26	401–416
3	33–48	11	161–176	19	289–304	27	417-432
4	49–64	12	177–192	20	305–320	28	433–448
5	65–80	13	193–208	21	321–336	29	449–464
6	81–96	14	209–224	22	337–352	30	465–480
7	97–112	15	225–240	23	353–368	31	481–496
8	113–128	16	241–256	24	369–384	32	497–512

Supported KVM Switches

The table below lists KVM switches that are compatible with the CL5708 / CL5716 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
Daisy Chain	ATEN	ACS1208A	8 Port PS/2 KVM Switch
		ACS1216A	16 Port PS/2 KVM Switch
		CS1708	8 Port USB KVM Switch
		CS1716	16 Port USB KVM Switch
		CS1708A	8 Port USB / PS/2 KVM Switch
		CS1716A	16 Port USB / PS/2 KVM Switch

Please keep in mind the following limitations when installing more than one KVM switch:

- The maximum distance between the CL5708 / CL5716 and the last switch in the daisy chain cannot exceed 100 meters, regardless of the number of switches in the daisy chain.

- The maximum distance between any two KVM switches in the daisy chain cannot exceed 15 meters.

Clear Login Information

If you are unable to perform an Administrator login (because the Username and Password information has become corrupted, or you have forgotten it), you can clear the login information with the following procedure.

1. Power off the switch and remove the top cover from the unit chassis.

2. Short the jumper labeled *Default Password* on the switch's main board
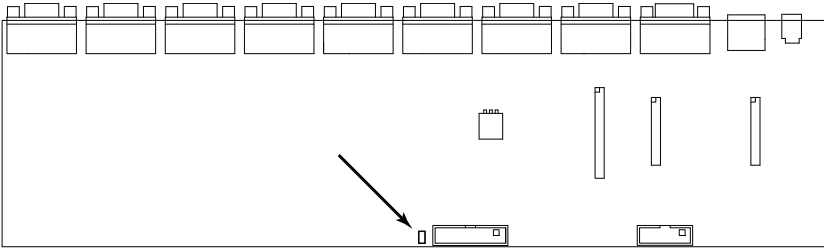
3. Power on the switch.

   When you power the switch on, the following message appears on the LCD display:

   ```
   USERNAME AND PASSWORD INFORMATION HAS BEEN CLEARED.
   PLEASE POWER OFF THE SWITCH, REMOVE THE JUMPER, CLOSE
   THE CASE, THEN RESTART.
   ```

4. After you start back up, the OSD login function acts exactly the way it did the first time the switch was run (see *OSD Overview*, page 31) and you can reset passwords for the Administrators and Users.

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 the 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

For convenience and flexibility, three optional rack mounting kits are available:

◆ A long bracket standard rack mounting kit for 68.0–110.0 cm racks;

◆ A short bracket Easy-Installation rack mount kit for 52.0–70.0 cm racks;

◆ A long bracket Easy-Installation rack mount kit for 68.0–110.0 cm racks.

Standard - Long

To install the long bracket standard rack mount kit, simply replace the short L brackets on the standard rack mount kit with the long ones, and mount the switch according to the instructions given for *Standard Rack Mounting*, page 12.

Easy Installation

With an *Easy-Installation*, kit, one person can mount the switch. To install the *Easy-Installation* kit, do the following:

1. Remove the standard L brackets, and the side mounting brackets from both sides of the switch.
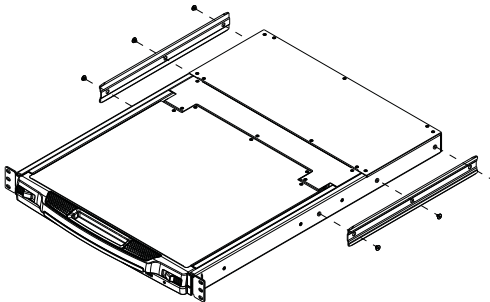
2. Attach the left and right *easy-installation* mounting rails to the inside of the rack. The flange that supports the switch will be to the inside.

Rear Flange
Slide Bar

LEFT
RAIL

Rear Attachment
Sliding Bracket

Support
Flange

Rear Flange

RIGHT
RAIL
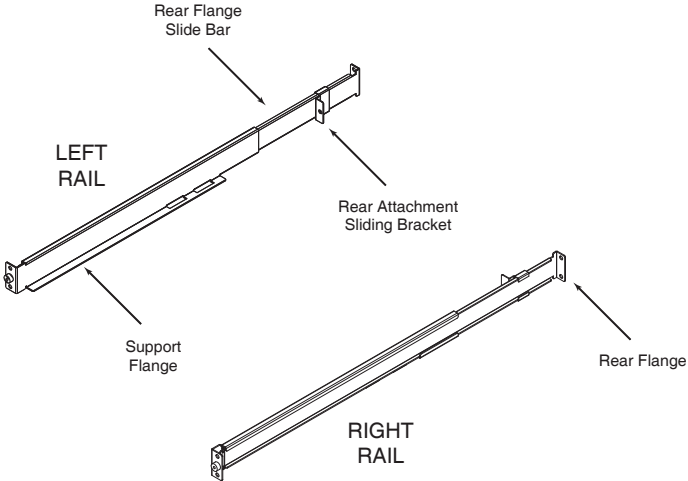
a) Screw the front flanges to the rack first.

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.
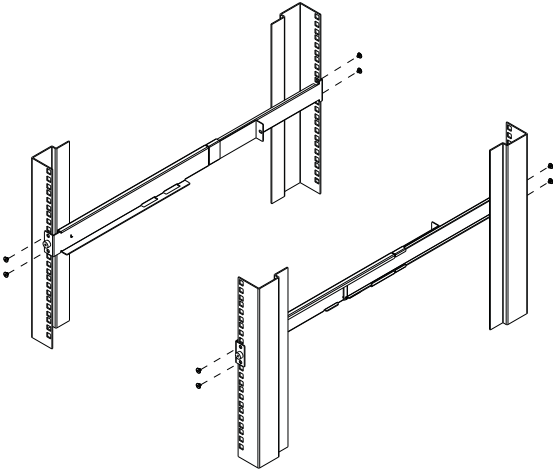
(Continues on next page.)

(Continued from previous page.)

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

M4 x 6
Phillips Head Screw
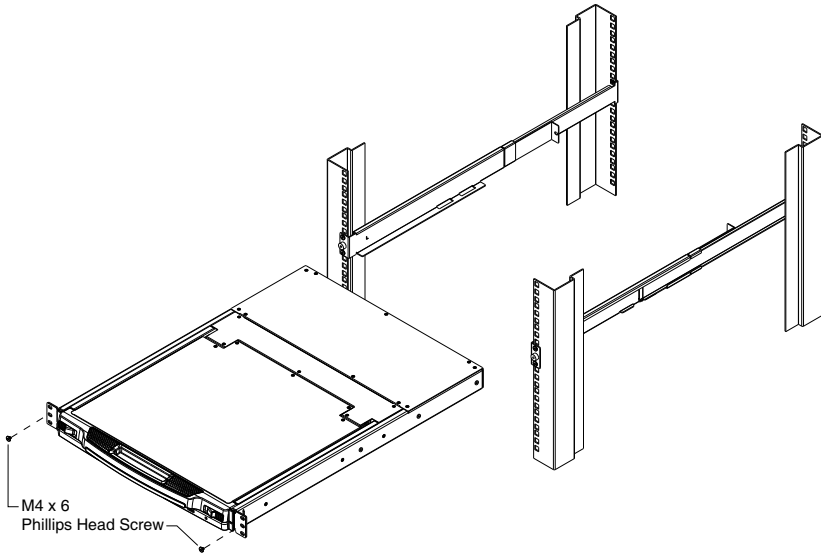
4. Slide the rear attachment sliding brackets along the slide bars until they contact the rear of the switch, then use the screws supplied with this package to attach the bars to the rear of the switch (tighten the screws all the way).

M4 x 6
Phillips Head Screw
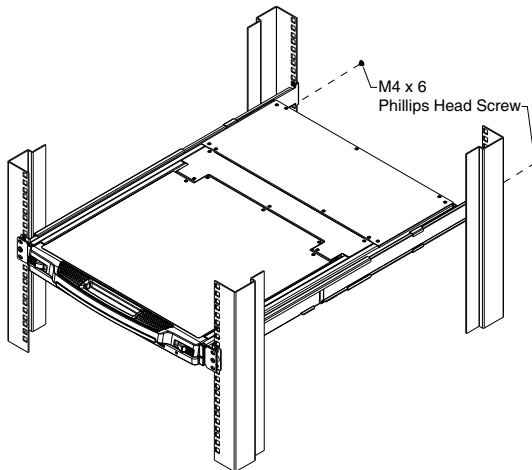
5. Slide the switch open and closed a couple of times to be sure that it is properly aligned and operating smoothly. (See p. 21 for opening and closing procedures.)

6. After determining that the switch is properly lined up and operating correctly, finish up by fully tightening down the partially tightened front attachment screws inserted in step 3.

Troubleshooting

Overview

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 57, for upgrade details.

Problem	Solution
There are ghost images on the external monitor.	The distance between the external console and the CL5708 / CL5716 is too great. The maximum VGA cable distance should not exceed 20m and, in some cases, may need to be shorter. Replace the VGA cable with one of an appropriately short length.

Keyboard Invocation Keys

Two dedicated keys are provided on the keyboard module to make it easy to invoke Hotkey mode and the OSD, as shown in the diagram, below:

KVM OSD   **KVM Hotkey**

Note: These keys are toggles. Press them once to invoke the feature, press them again to exit.

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.

Limited Warranty

IN NO EVENT SHALL THE DIRECT VENDOR'S LIABILITY EXCEED THE PRICE PAID FOR THE PRODUCT FROM DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE PRODUCT, DISK, OR ITS DOCUMENTATION.

The direct vendor makes no warranty or representation, expressed, implied, or statutory with respect to the contents or use of this documentation, and especially disclaims its quality, performance, merchantability, or fitness for any particular purpose.

The direct vendor also reserves the right to revise or update the device or documentation without obligation to notify any individual or entity of such revisions, or update. For further inquiries, please contact your direct vendor.

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