ATEN

KVM Switch
CS1308 / CS1316

User Manual

EMC Information

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

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

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

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

Achtung: Der Gebrauch dieses Geräts in Wohnumgebung kann Funkstörungen verursachen.

KCC Statement

유선 제품용 / A 급 기기 (업무용 방송 통신 기기)

이 기기는 업무용 (A 급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며 , 가정 외의 지역에서 사용하는 것을 목적으로 합니다 .

RoHS

This product is RoHS compliant.

警告使用者：此為甲類資訊技術設備，於居住環境中使用時，可能會造成射頻擾動，在此種情況下，使用者會被要求採取某些適當的對策。

KVM+ 多電腦切換器類產品

設備名稱 Equipment Name	8 埠 PS/2-USB VGA KVM 多電腦切換器	型號（型式） Type designa- tion (Type)	CS1308		
單元 Unit	限用物質及其化學符號 Restricted substances and its chemical symbols				
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
電纜線 Cable	–	○	○	○	○	○
印刷電路部件 PCBA	–	○	○	○	○	○
塑膠 / 其他部件 Plastic / Other parts	○	○	○	○	○	○
金屬部件 Metal parts	–	○	○	○	○	○

備考 1. 〝超出 0.1 wt %〞及 〝超出 0.01 wt %〞係指限用物質之百分比含量超出百分比含量基準值。
Note 1："Exceeding 0.1 wt %" and "exceeding 0.01 wt %" indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.
備考 2. 〝○〞係指該項限用物質之百分比含量未超出百分比含量基準值。
Note 2：" ○ " indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.
備考 3. 〝–〞係指該項限用物質為排除項目。
Note 3："–" indicates that the restricted substance corresponds to the exemption.

製造商：宏正自動科技股份有限公司
地址：新北市汐止區大同路二段 125 號三樓

最大操作環境溫度： 50ºC

最大額定電壓： DC 5.3V

D33866
RoHS

User Information

Online Registration

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

International	http://eservice.aten.com

Telephone Support

For telephone support, call this number:

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

User Notice

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

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

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

Package Contents

The CS1308 / CS1316 package consists of:

- 1 CS1308 / CS1316 KVM Switch with Rack Mount Kit
- 1 Console cable
- 1 Firmware Upgrade cable
- 1 Foot Pad set (4 pads)
- 1 Power Adapter (AC Models)
- 1 User Instructions*

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.

* Features may have been added to the CS1308 / CS1316 since this manual was published. Please visit our website to download the most up-to-date version of the manual.

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About this Manual

This user manual is provided to help you get the most from your CS1308 / CS1316 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 CS1308 / CS1316 system. Its purpose, features and benefits are presented, and its front and back panel components are described.

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

Chapter 3, Basic Operation, explains the fundamental concepts involved in operating the CS1308 / CS1316.

Chapter 4, OSD Operation, provides a complete description of the CS1308 / CS1316 OSD (on-screen display), and how to work with it.

Chapter 5, Keyboard Port Operation, details all of the concepts and procedures involved in the hotkey operation of your CS1308 / CS1316 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 CS1308 / CS1316 firmware with the latest available versions.

An Appendix, provides specifications and other technical information regarding the CS1308 / CS1316.

Conventions

This manual uses the following conventions:

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

Product Information

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

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

Chapter 1
Introduction

Overview

The CS1308 / CS1316 KVM switch allows access and control up to 256 computers from a single console (keyboard, mouse, and monitor). As many as 16 additional switches can be cascaded bringing the total number of connected computers to 256 computers that can be controlled from a single keyboard-monitor-mouse console. Additionally, the CS1308 / CS1316 features a compact design that allows installation in a 1U system rack.

Setup is fast and easy; plugging cables into their appropriate ports is all that is needed. The switch supports both USB and PS/2 connections for the console and computers. The CS1308 / CS1316 intercepts keyboard input directly, thus eliminating the need for any software configuration. Switching between computers can be easily accomplished either by manually pressing the front panel push button port LEDs, entering hotkey combinations from the keyboard, or via a menu driven multilingual on-screen display (OSD) system.

A convenient auto-scan feature permits automatic scanning and monitoring of activities on all connected computers. Lastly, the CS1308 / CS1316 offers benefits such as: a) managing multiple computers from a single console, b) eliminating the expense of having to purchase a separate keyboard, monitor, and mouse for each computer, c) space and energy costs savings, and d) helping create a greener environment by reducing the amount of waste.

Features

- A single console controls up to 256 computers
- Cascade to 2 levels – connect up to 16 switches
- Dual Interface – supports computers with PS/2 or USB keyboards and mice
- Multiplatform support – Windows 2000/XP/Vista, Linux, Mac, and Sun
- Supports USB keyboards for PC, Mac and Sun
- Auto PS/2 and USB interface detection
- USB or PS/2 keyboard and mouse emulation – computers boot even when the console focus is elsewhere
- Superior video quality – up to 2048 x 1536; DDC2B
- Convenient computer switching via front panel pushbuttons, hotkeys, or multilingual on-screen display (OSD) menu
- Two level password security - only authorized users view and control computers; up to four users and an administrator with a separate profile for each
- Auto Scan feature for monitoring user-selected computers
- Broadcast mode – operations simultaneously performed on all selected computers
- Hot pluggable – add or remove computers without having to power down the switch
- Buzzer on/off via hotkey and OSD
- Firmware upgradeable
- No software installation required
- Designed for desktop or rack mount (19" system rack, 1U)

Requirements

Console

The following hardware components are required for the KVM console:

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

Computers

The following hardware components are required for each computer:

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

Cables

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

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

Operating Systems

Supported operating systems are shown in the table, below:

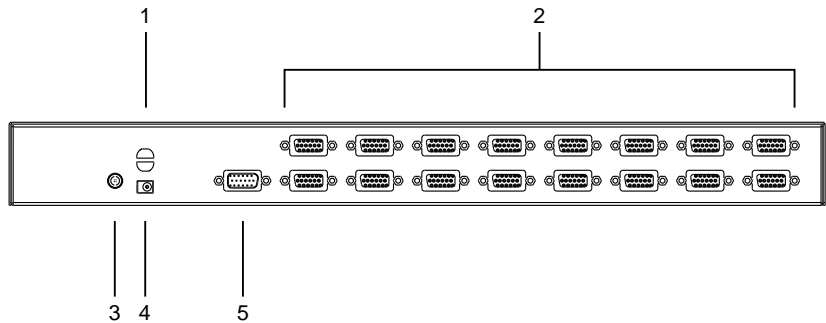| OS		Version
Windows		2000 and higher
Linux	RedHat	7.1 and higher
	SuSE	8.2 and higher
	Mandriva (Mandrake)	9.0 and higher
UNIX	AIX	4.3 and higher
	FreeBSD	4.2 and higher
	Sun	Solaris 8 and higher
Novell	Netware	5.0 and higher
Mac		OS 9 and higher

Components

Front View
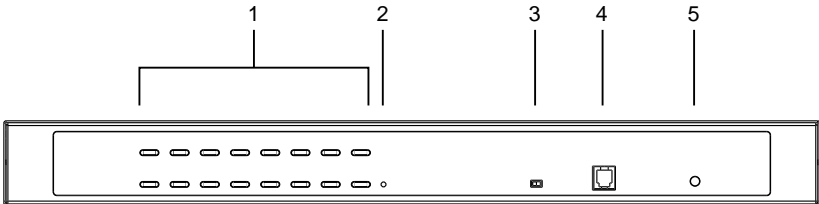
Note: The CS1316 is pictured above. The CS1308 / CS1308D front panel is the same as the CS1316, except that it has 8 KVM port LEDs instead of 16.

No.	Component	Description
1	Port LEDs	These port selection pushbuttons each contain 2 LEDs.
		◆ An orange LED indicates that a computer is connected to the corresponding port.
		◆ A green LED indicates that the computer connected to the corresponding port has focus.
		◆ Simultaneously pressing port LEDs 1 & 2 resets the console keyboard and mouse.
		◆ Simultaneously pressing port LEDs 7 & 8 on the CS1308 / CS1308D, or 15 & 16 on the CS1316, starts *Auto Scan* mode. See *F7: SCAN*, page 31.
2	Reset Button	Pressing in this button performs a system reset. When the system is reset, the CS1308 / CS1316 beeps, and then the KVM port LEDs flash in succession until the reset is completed. After the reset is completed you can login again.
		Note: This button is semi-recessed and must be pushed with a small object, such as the end of a paper clip or a ballpoint pen.
3	Firmware Upgrade Recovery Switch	During normal operation and while performing a firmware upgrade, this switch should be in the NORMAL position. If a firmware upgrade operation does not complete successfully, this switch is used to perform a firmware upgrade recovery. See *Firmware Upgrade Recovery*, page 50, for details.
4	Firmware Upgrade Port	The firmware upgrade cable that transfers the firmware upgrade data from the administrator's computer to the CS1308 / CS1316, plugs into this RJ-11 connector.
5	Power LED	Lights to indicate that the unit is receiving power.

Rear View

No.	Component	Description
1	Cable Tie Slot	If you want to use a cable tie to gather the cables together, you can run it through this slot to attach it to the unit.
2	KVM Ports	The cables that link to the computers plug in here.
		Note: The shape of these 15-pin connectors has been specifically modified so that only custom KVM cables designed to work with this switch can plug in. (See *Cables*, page 3, for details.) Do **NOT** attempt to use ordinary 15-pin VGA connector cables to link these ports to the computers.
3	Grounding Terminal	The grounding wire used to ground the CS1308 / CS1316 attaches here.
4	Power Jack	The power adapter cable plugs in here.
5	Console Port	The custom console cable set that is provided to attach the console monitor, keyboard, and mouse plugs in here.

Note: The CS1316 is pictured above. The CS1308 rear panel is the same as the CS1316, except that it has 8 KVM ports instead of 16.

Chapter 2
Hardware Setup

Overview

The CS1308 / CS1316 is a combo switch designed to work with USB and PS/2 interfaces. It utilizes custom KVM cables that serve as intermediaries between the switch and the connected computers. A separate custom KVM cable is required for each computer connection. Custom cables of various lengths are listed in the Cables section on page 5. Consult your dealer to find out which one fit your needs best.

Before You Begin

1. Important safety information regarding the placement of this device is provided on page 51. Please review it before proceeding.

2. To prevent damage to your installation from power surges or static electricity. It is important that all connected devices are properly grounded.

3. Make sure that the power to any device that you connect to the installation has been turned off. You must unplug the power cords of any computers that have the Keyboard Power On function.

Stacking and Rack Mounting

The CS1308 / CS1316 can be stacked on a desktop or rack mounted in 1U of rack space. The procedures are described in the following sections.

Note: 1. Allow at least 5.1 cm on each side for adequate ventilation and 12.7 cm at the rear for power cord and cable clearance.

2. The rack mount kit does not include cage nuts. If you need additional screws or cage nuts, contact your rack dealer.

3. For instructional purposes, the CS1316 is pictured in the diagrams that follow. However, the CS1308 is the same as the CS1316, except that it has 8 KVM ports instead of 16.

Stacking

The CS1308 / CS1316 can be placed on any level surface that can safely support its weight and the weight of the attached cables. Ensure that the surface is clean and free of materials that can block the exhaust vents or otherwise interfere with normal operation of the KVM switch. Peel the protective backing off of the foot pads, and affix them to the bottom panel of the CS1308 / CS1316 at the corners, as shown in the diagram below.
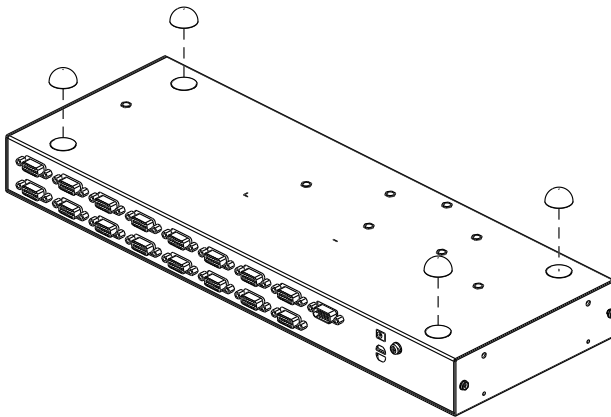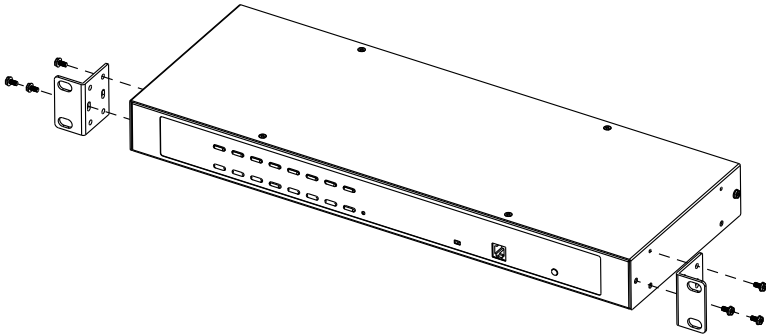
Rack Mounting – Front

1. Remove the screws from the left and right side panels near the front of the switch (2 screws total).
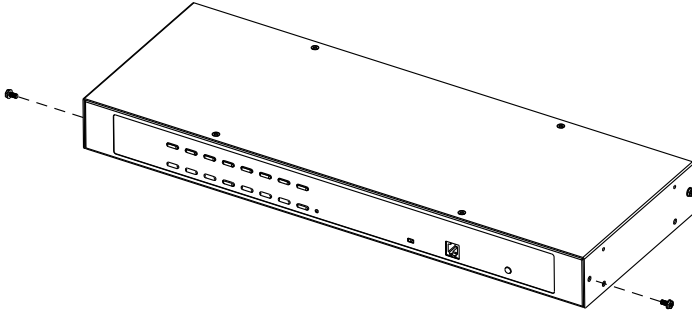
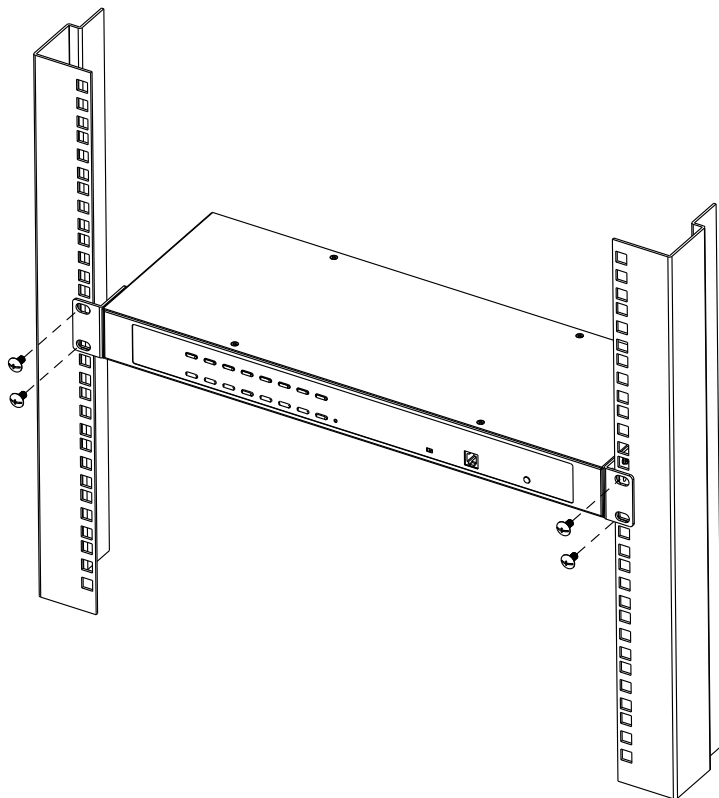2. Use the M3 x 8 Phillips hex head screws supplied with the rack mount kit to screw the rack mounting brackets onto the side panels near the front of the unit.

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3. Place the CS1308 / CS1316 in the rack. Position it so that the holes in the mounting brackets line up with the holes in the rack. Secure the mounting brackets to the front of the rack.

Rack Mounting – Rear

1. Remove 1 screws each from the left and right sides of the switch (2 screws total) near the rear of the unit.

2. Use the M3 x 8 Phillips head hex screws supplied with the rack mount kit to screw the rack mounting brackets into the sides at the rear of the unit.
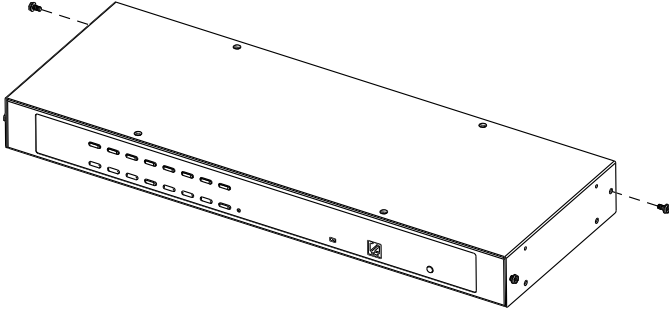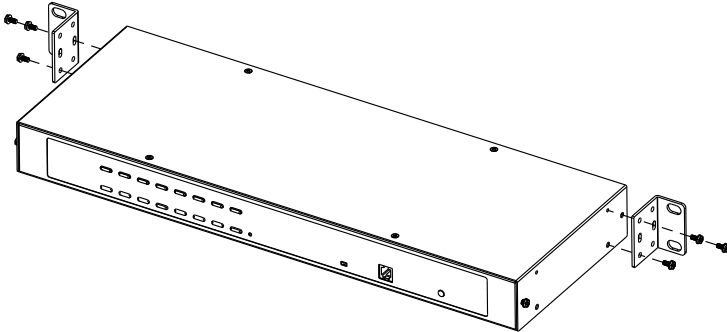
(Continues on next page.)

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3. Place the KVM switch in the rack. Position it so that the holes in the mounting brackets line up with those in the rack. Secure the mounting brackets to the rear of the rack.
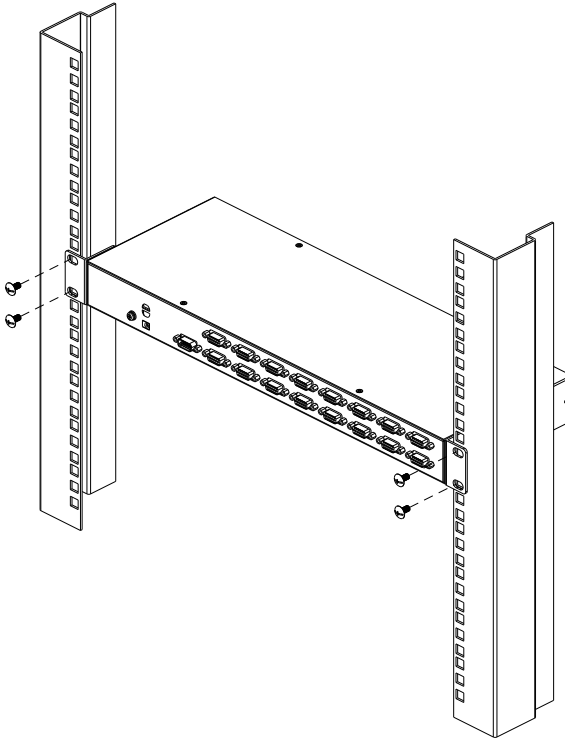
Grounding

To prevent damage to your installation it is important that all devices are properly grounded. Use a grounding wire to ground the CS1308 / CS1316 by connecting one end of the wire to the grounding terminal, and the other end of the wire to a suitable grounded object.
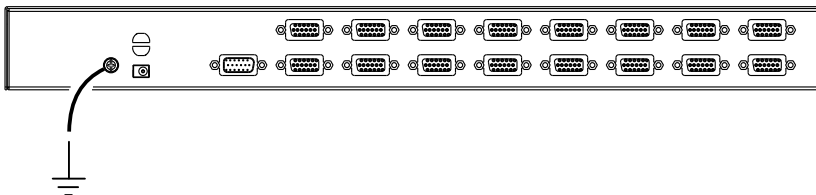
Single Level Installation

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

1. Ground the CS1308 / CS1316 and make sure that power has been turned off to all the computers you will be connecting up.

2. Using the console cable provided, connect a keyboard, mouse, and monitor to the CS1308 / CS1316 console port. Refer to the *Cable Connection Diagrams* on the following page.

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

4. Plug the power adapter cable into the CS1308 / CS1316 power jack, then plug the power adapter into an AC power source.

5. Power on the computers.

> **Note:** Make sure the computers and devices that the CS1308 / CS1316 connects to are also properly grounded.

Single Level Installation Diagram
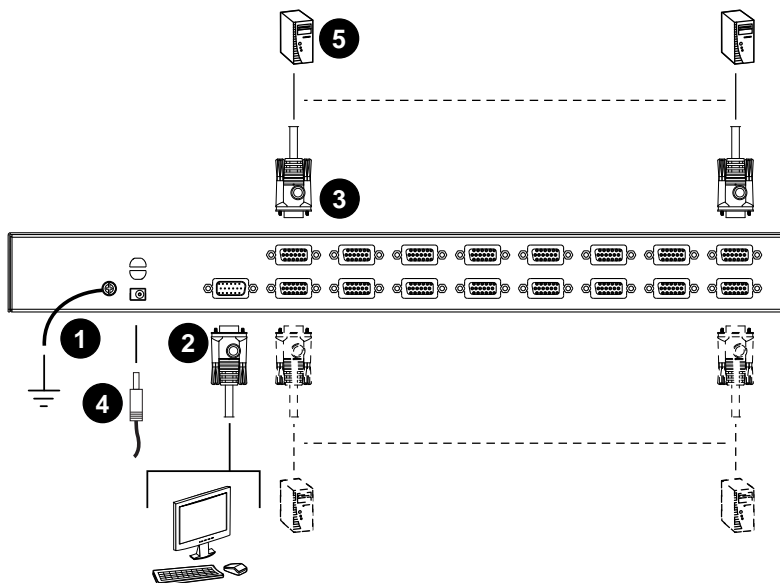
Note: The numbers in the diagram correspond to the numbered steps above.

* Contact your KVM switch dealer for ordering information.
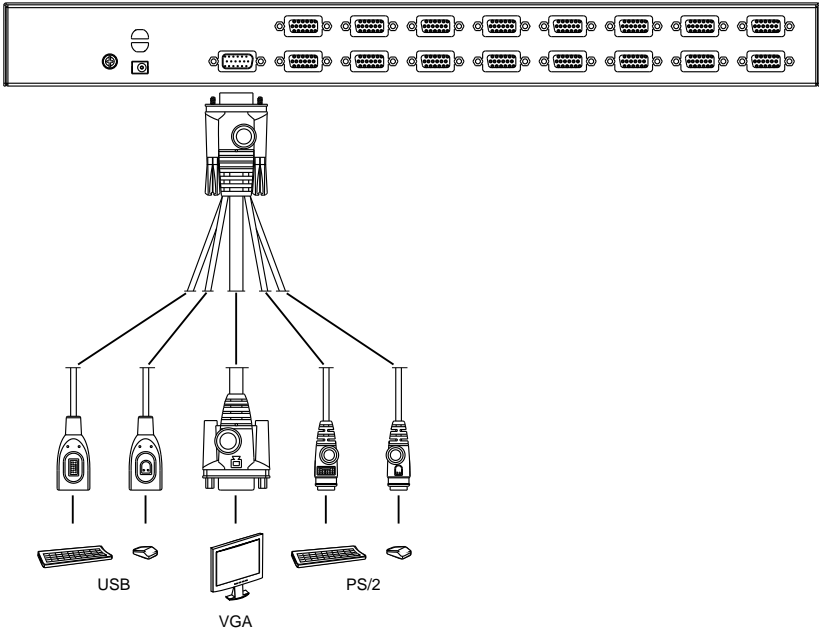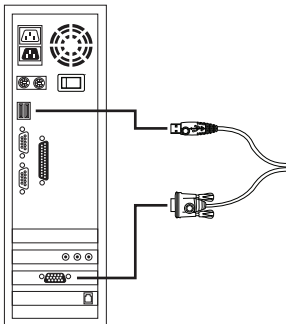
Cable Connection Diagrams
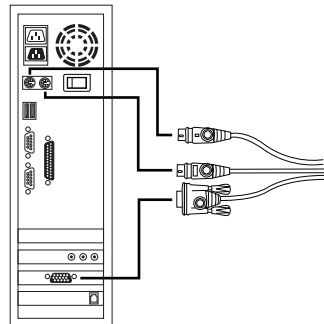
Console Cable Installation Diagram

USB

VGA

PS/2

KVM Cable Installation Diagrams

USB KVM Cable Connection

PS/2 KVM Cable Connection

Two Level Installation

To control even more computers, up to 16 additional switches can be cascaded from the first CS1308 / CS1316. As many as 256 computers can be controlled from a single console in a complete installation. Tables showing the relation between the number of computers and the number of CS1308 / CS1316 units needed to control them are provided on page 56 in the Appendix.

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

1. Ground the primary CS1308 / CS1316 and make sure that power has been turned off to all the computers you will be connecting up.

2. Using the console cable provided, connect a keyboard, mouse, and monitor to the CS1308 / CS1316 console port. Refer to the *Cable Connection Diagrams* on the following page.

3. Using a KVM cable, connect any available KVM port on the primary CS1308 / CS1316 to the console port on the secondary CS1308 / CS1316.

4. Use KVM cable sets (described in the *Cables* section, page 3), to connect any available KVM port on the CS1308 / CS1316 installation to the keyboard, video and mouse ports of the computers you are installing.

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

6. The Power On sequence requires that all Second Stage units be powered on first. After they are all on, the First Stage units must be powered on next. Only after all the switches have been powered on in this sequence, can the computers be powered on.

> **Note:** Make sure the computers and devices that the CS1308 / CS1316 connects to are also properly grounded.

Two Level Installation Diagram
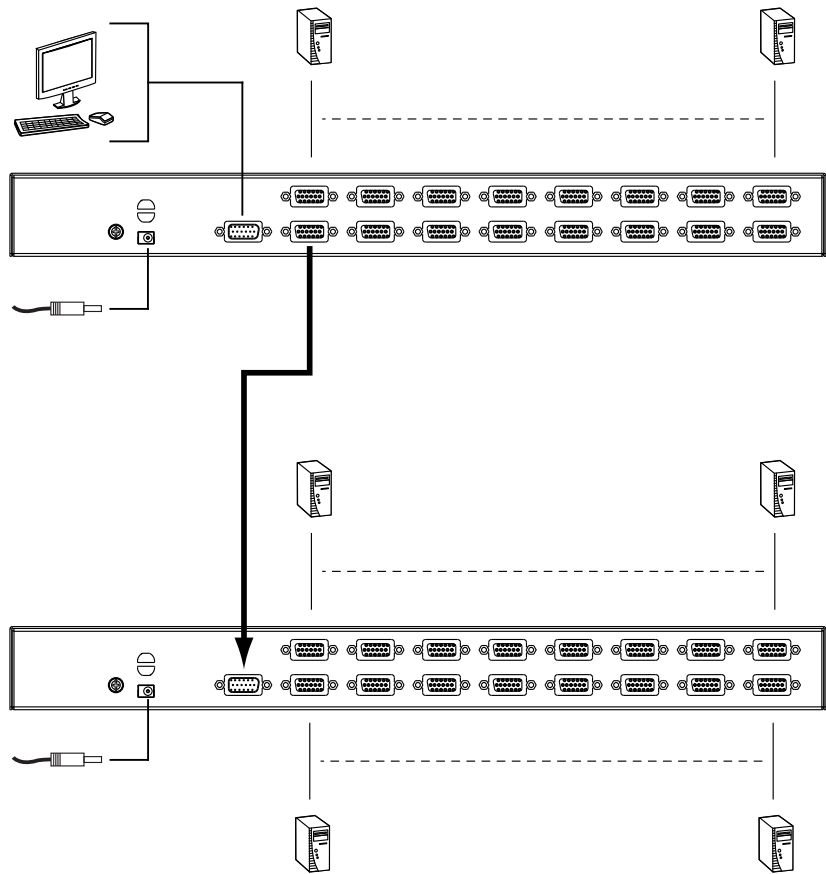
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Chapter 3
Basic Operation

Hot Plugging

The CS1308 / CS1316 supports *hot plugging* – components can be removed and added back into the installation by unplugging their cables from the ports without the need to shut the unit down. In order for hot plugging to work properly, the procedures described below must be followed:

Hot Plugging KVM Ports

In order for the OSD menus to correspond to KVM port changes, you must manually reconfigure the OSD to reflect the new port information. See the *F3 SET* (page 25) and *F4 ADM* (page 27), functions for details.

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

Hot Plugging Console Ports

The keyboard, monitor, and mouse can all be hot plugged. When hot plugging the 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 computers on the installation must be shut down for 10 seconds, then restarted following the power up sequence described under Step 6 on page 16.

   Note: If, after hot plugging there is no response to keyboard and/or mouse input, perform a *Keyboard and Mouse Reset* by simultaneously pressing the 1 and 2 front panel port LEDs.

Port Selection

The CS1308 / CS1316 provides three port selection methods to access the computers on the installation: Manual, an OSD (on-screen display) menu system, and Hotkeys. See Chapter 4, *OSD Operation* and Chapter 5, *Keyboard Port Operation* for more information.

Manual Port Switching

Use the front panel pushbutton switches to manually switch to a port.

Port ID Numbering

Each port on a CS1308 / CS1316 installation is assigned a unique *Port ID*. You can directly access any computer on any level of the installation by specifying the Port ID that the computer is connected to – either with the OSD (see *OSD Operation*, page 21), or with the Hotkey port selection method (see *Keyboard Port Operation*, page 33).

◆ A computer attached to a primary unit has a two digit Port ID (from 01–08 for the CS1308; from 01–16 for the CS1316), that corresponds to the KVM port number that it is connected to.

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

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

Powering Off and Restarting

If it becomes necessary to power off a CS1308 / CS1316, do the following before restarting it:

1. Unplug the CS1308 / CS1316 from its power source.

2. Shut down all the computers that are attached to it.

   Note: Unplug the power cords of any computers that have the *Keyboard Power On* function. Otherwise, the CS1308 / CS1316 will still receive power from the computers.

3. Wait 10 seconds, then plug the CS1308 / CS1316 back in.

4. Power on the computers.

Note: If there are stations cascaded down from the primary CS1308 / CS1316, all the cascaded stations and the computers attached to them must be shut down as well.

Chapter 4
OSD Operation

OSD Overview

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

Manufacturing Number

The "MFG Number" (Manufacturing Number) is an internal serial number used by ATEN's factory and technical support staff to identify products. This number does not affect products' warranty. If your product requires after-sales services, you may provide the MFG Number to ATEN's sales or technical support staff to identify the product and model number.

OSD 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. 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 console monitor while also viewing the display of any port on the CS1308 / CS1316 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 25). 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:

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 27, for details).

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

OSD Main Screen Headings

PN	This column lists the port ID numbers for all the KVM ports on the installation. The simplest method to access a particular computer is move the highlight bar to it, then press **Enter**.
QV	If a port has selected for quick view scanning (see *Set Quick View Ports*, page 29), 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 28), 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 27), that match the name or port ID pattern, regardless of the current list settings (see *F2 LIST*, page 24, for details).

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

F2: LIST

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

Choice	Meaning
ALL	Lists all of the ports on the installation that have been set accessible by the administrator for the current logged in user.
QUICK VIEW	Lists only the ports that have been selected as quick view ports (see *SET QUICK VIEW PORTS*, page 29).
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 29), 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	Determines how long the focus dwells on each port as it cycles through the selected ports in Auto Scan mode (see *F7 SCAN*, page 31). 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 30), and Auto Scan mode (see *F7 SCAN*, page 31. Choices are: **ALL** - All the ports which have been set accessible (see *SET ACCESSIBLE PORTS*, page 27); **QUICK VIEW** - Only those ports which have been set accessible and have been selected as quick view ports (see *SET QUICK VIEW PORTS*, page 29); **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 29, for details).
SCREEN BLANKER	If there is no input from the console for the amount of time set with this function, the screen is blanked. Key in a value from 1–30 minutes, then press **[Enter]**. The default setting of 0 disables this function.
HOTKEY COMMAND MODE	Enables / disables the hotkey command function in case a conflict with programs running on the computers occurs.
HOTKEY	Sets the keyboard shortcut for invoking *Hotkey Mode* (see page 33). Choices are: **NUM LOCK +** - (minus) (default), and **CTRL + F12**.
OSD LANGUAGE	Sets the language used in the OSD. Choices are: English (default), German, Japanese, Simplified Chinese and Traditional Chinese.

F4: ADM

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

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

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

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Setting	Function
SET LOGOUT TIMEOUT	If there is no input from the console for the amount of time set with this function, the user is automatically logged out. A login is necessary before the console can be used again.
	This enables other users to gain access to the computers when the original user is no longer accessing them, but has forgotten to log out. To set the timeout value, key in a number from 1–180 minutes, then press **[Enter]**. The default setting of 0 disables this function.
	Note: This feature does not function if Set Login Mode is disabled. See *SET LOGIN MODE*, page 29.
EDIT PORT NAMES	To help remember which computer is attached to a particular port, every port can be given a name. This function allows the administrator to create, modify, or delete port names.
	To edit a port name:
	1. Click the port, or use the navigation keys to move the highlight bar to it, then press **[Enter]**.
	2. Key in the new port name, or modify/delete the old one. The maximum number of characters allowed for the port name is 12. Legal characters include:
	◆ All alpha characters: **A**–**Z**
	◆ All numeric characters: **0**–**9**
	◆ *** ( ) + : - , ? . /** and **Space**
	Case does not matter; the OSD displays the port name in all capitals no matter how they were keyed in.
	3. When you have finished editing, press **[Enter]** to have the change take effect. To abort the change, press **[Esc]**.
RESTORE DEFAULT VALUES	This function is used to undo all changes and return the setup to the original factory default settings (see *OSD FACTORY DEFAULT SETTINGS*, page 57) 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 31); or an invalid entry is made on an OSD menu. The default is **Y**.

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Setting	Function
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. When a port is deselected, the icon disappears.
	◆ If one of the quick view options is chosen for the LIST view (see *F2 LIST*, page 24), 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 26), only a port that has been selected here will be auto-scanned.
	The default has no ports selected for quick view.
SET OPERATING SYSTEM	This function allows the administrator to define the operating system for the computer connected to each KVM port. The default is WIN (PC compatible).
	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 CS1308 / CS1316 firmware (see page 45), 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 LOGIN MODE	This function allows the administrator to request users to login or not. When the login dialog box is disabled, the system disables the login/logout function. If the system is re-started, the login/logout function remains disabled.

F5: SKP

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

- The selection of computers to be available for skip mode switching is made with the *Scan–Skip* mode setting under the **F3: SET** function (see page 25).

- When you are in skip mode:

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

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

  Note: When you skip, you only skip to the previous or next available computer that is in the *Scan–Skip* mode selection (page 26).

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

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

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

F6: BRC

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

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

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

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

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

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 26).

◆ The amount of time that each port displays for is set with the *Scan Duration* setting under the **F3: SET** function (see page 25). 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 35, 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 CS1308 / CS1316 provides the following hotkey port control features:

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

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

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

Invoke Hotkey Mode

All hotkey operations begin by invoking *Hotkey* mode.[1] There are two possible keystroke sequences used to invoke *Hotkey* mode, though only one can be operational at any given time:

Number Lock and Minus Keys

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

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

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

        [Num Lock] + [-]

---

1. Make sure that the *Hotkey Command Mode* function is enabled and that you key in the appropriate *Hotkey*. See page 26 for details.

Control and F12 Keys

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

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

3. Release the **Ctrl** key:

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

When *Hotkey* mode is active:

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

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

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

Select the Active Port

Each KVM port is assigned a port ID (see *Port ID Numbering*, page 20). 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 25 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 26, for information regarding accessible ports.)
→	Skips to the next accessible port.

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

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

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

Computer Keyboard / Mouse Reset

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

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

2. Press **[F5].**

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

Hotkey Beeper Control

The beeper (see Activate Beeper, page 28) 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 26) 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 25) can be toggled between [Scroll Lock], [Scroll Lock] and [Ctrl], [Ctrl]. To toggle the *OSD Hotkey*, key in the following hotkey combination:

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

2. Press **[T]**.

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

Port OS Control

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

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

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

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

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

Set USB Speed

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

1. Invoke Hotkey mode (see *Invoke Hotkey Mode* on page 33).

2. Press **[F11]**

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

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

4. Press **[Enter]**.

Restore Default Values

This administrator only hotkey restores the CS1308 / CS1316 default values. See *RESTORE DEFAULT VALUES*, page 28. 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 28.
	[PN] [Enter]	Switches access to the computer that corresponds to that port ID.
	[F11] [F] [Enter]	Set the selected KVM port to full speed USB
	[F11] [L] [Enter]	Set the selected KVM port to low speed USB
	[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.

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Chapter 6
Keyboard Emulation

Mac Keyboard

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

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

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

Sun Keyboard

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

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

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

Chapter 7
The Firmware Upgrade Utility

Introduction

The purpose of the Windows-based Firmware Upgrade Utility is to provide an automated process for upgrading all CS1308 / CS1316 switches in an installation. The program comes as part of a Firmware Upgrade Package that is specific for each device.

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

Downloading the Firmware Upgrade Package

To download the firmware upgrade package:

1. From a computer that is not part of your KVM installation go to our 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.
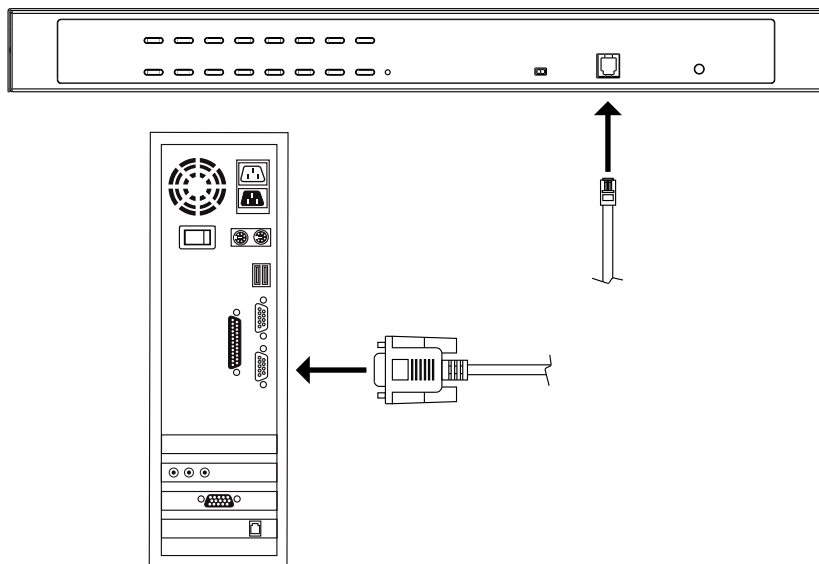

2. Shut down all the computers on the KVM installation.

3. From your KVM switch console, login to the OSD as the administrator (see p. 21) and select the **F4 ADM** function.

4. Scroll down to FIRMWARE UPGRADE. Press **[Enter]**, then press **[Y]** to invoke *Firmware Upgrade* mode (see p. 29.)

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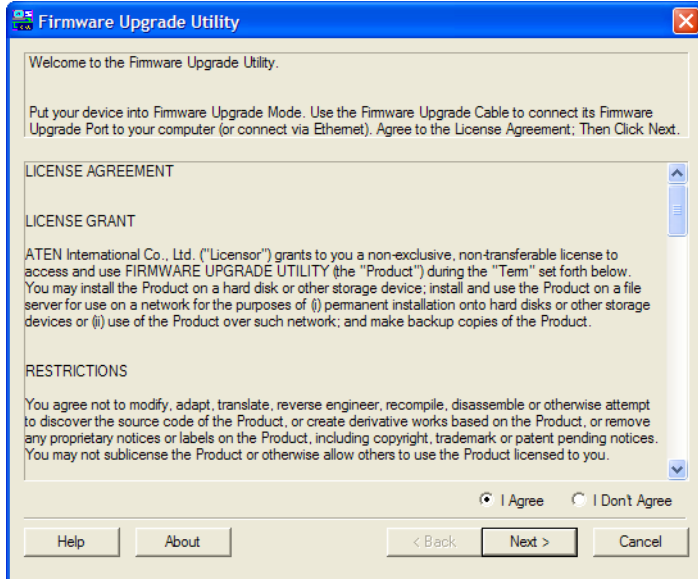
   Note: The screens shown in this section are for reference only. The wording and layout of the actual screens put up by the *Firmware Upgrade Utility* may vary slightly from these examples.

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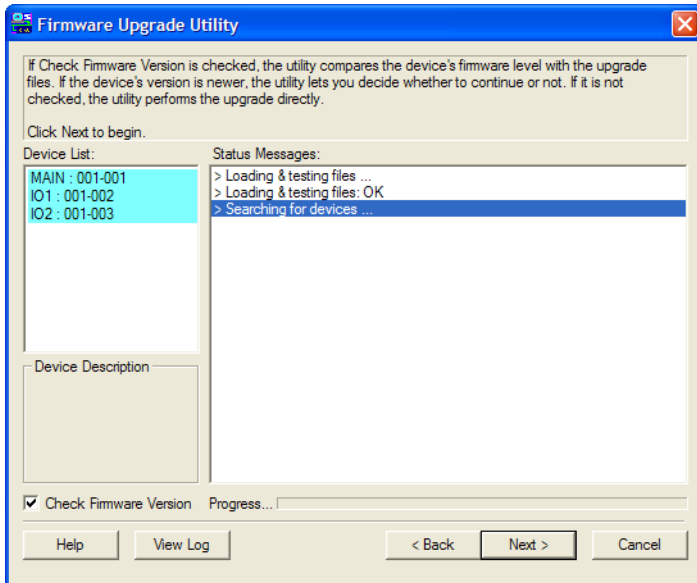
4. Click **Next** to perform the upgrade.

   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.
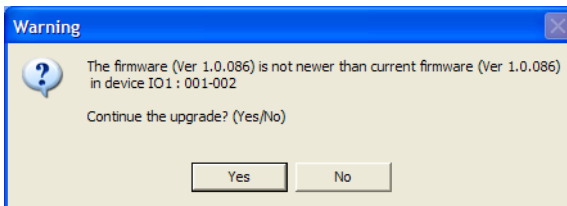

   If you didn't enable *Check Firmware Version*, the Utility installs the upgrade files without checking whether they are a higher level, or not.

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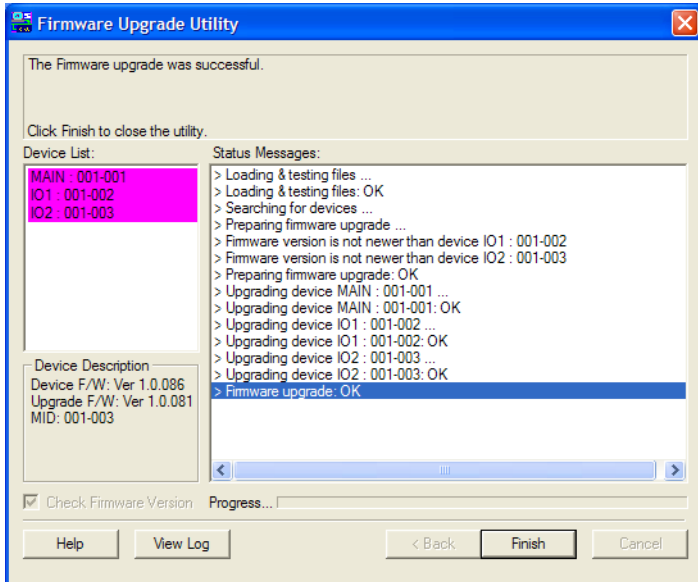
Click **Finish** to close the *Firmware Upgrade Utility*.

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.

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 one of the cascaded switches, plug it back into the installation.

7. Power the switch back on.

Appendix

Safety Instructions

General

- This product is for indoor use only.

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

- Follow all warnings and instructions marked on the device.

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

- Do not use the device near water.

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

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

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

- Never spill liquid of any kind on the device.

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

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

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

- 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.

- 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.

- ◆ 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.

Technical Support

International

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

- For telephone support, see *Telephone Support*, page iv:

North America

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

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

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

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

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

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

- Any other information you feel may be of help.

Specifications

Function			CS1308	CS1316
Computer Connections	Direct		8	16
	Max.		64 (via cascade)	256 (via cascade)
Port Selection			OSD, Hotkey, Pushbutton	
Connectors	Console Ports	Keyboard	1 x SPHD-15 Male (Yellow)	
		Video		
		Mouse		
	KVM Ports	Keyboard	8 x SPHD-15 Female (Yellow)	16 x SPHD-15 Female (Yellow)
		Video		
		Mouse		
	F/W Upgrade		1 x RJ11 Female (Black)	
	Power		1 x DC Jack	
Switches	Port		8 x Pushbutton	16 x Pushbutton
	F/W Upgrade		1 x Slide	
LEDs	On Line		8 (Orange)	16 (Orange)
	Selected		8 (Green)	16 (Green)
	Power		1 (Dark Green)	
Emulation	Keyboard / Mouse		PS/2, USB	
Video			2048 x 1536; DDC2B	
Scan Interval			1–255 Seconds	
Power Consumption			DC 5.3 V; 5 W	DC 5.3 V; 6.6 W
Environment	Operating Temp.		0–50ºC	
	Storage Temp		-20–60ºC	
	Humidity		0–80% RH, Noncondensing	
Physical Properties	Housing		Metal	
	Weight		1.89 kg	2.10 kg
	Dimensions (L x W x H)		43.30 x 16.00 x 4.40 cm	

Connection Tables

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

CS1308 to Compatible 8-Port Switches

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

CS1308 to Compatible 16-Port Switches

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

CS1316 to Compatible 8-Port Switches

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

CS1316 to Compatible 16-Port Switches

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

Supported KVM Switches

The table below lists KVM switches that are compatible with the CS1308 / CS1316 and the type of expansion that they use. (KVM switches listed below are sold separately. Contact your dealer for details.)

Expansion Type	Brand	Model	Name
Cascade	ATEN	CS1308	8 Port USB / PS/2 KVM Switch
		CS1316	16 Port USB / PS/2 KVM Switch
		CS1754	4 Port USB / PS/2 KVM Switch
		CS1758	8 Port USB / PS/2 KVM Switch

Restoring Factory Default Settings

You can restore the factory default settings (listed on the next page) for the CS1308 / CS1316. With this procedure, the administrator and all user accounts are removed from the system. All port names and setting are also removed.

Note: A jumper cap is required when performing this procedure.

1. Unplug the CS1308 / CS1316 power adapter.

2. Remove the cover of the CS1308 / CS1316.

3. Depending on the CS1308 / CS1316, place a jumper cap over pins 1-2 of the J10 / J20 jumper on the mainboard.

CS1308:
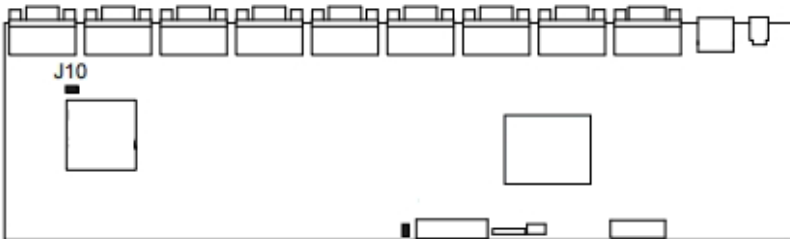
CS1316:
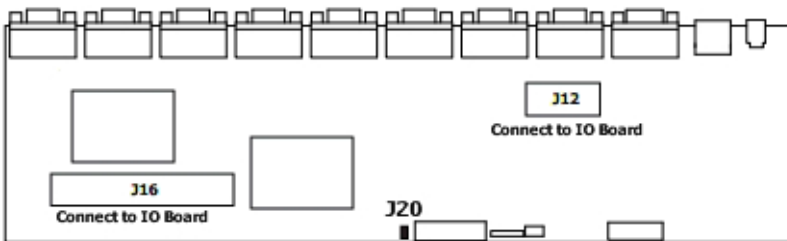
4. Plug in the CS1308 / CS1316 power adapter. The following directions appear on the KVM console screen:

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

5. Unplug the power adapter again.

6. Remove the jumper cap from pins 1-2 of the J17 / J20 jumper in terms of the CS1308 / CS1316 mainboard.

7. Replace the cover on the KVM switch.

8. Plug in the CS1308 / CS1316 power adapter.

9. You should now use the default username and password to log in to the CS1308 / CS1316.

OSD Factory Default Settings

The factory default settings are as follows:

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

About SPHD Connectors

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

Troubleshooting

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

In addition, updating the product's firmware may solve problems that have been discovered and resolved since the prior version was released. If your product is not running the latest firmware version, we strongly recommend that you upgrade. See *The Firmware Upgrade Utility*, page 45, for upgrade details.

Symptom	Possible Cause	Action
Erratic behavior.	Unit not receiving enough power.	Check that the power adapter that was supplied with the unit is plugged in and functioning properly.
Mouse and/or Keyboard not responding.	Improper mouse and/or keyboard reset.	Unplug the cable(s) from the console port(s), then plug it/them back in.

Limited Warranty

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

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

To learn more about our warranty policies, please visit our website:

http://www.aten.com/global/en/legal/policies/warranty-policy/

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