PS/2-USB KVM Switch

CS82U / CS84U

User Manual



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EMC Information

FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT: This equipment has been tested and found to comply with the limits for a Class B digital service, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. Any changes or modifications made to this equipment may void the user's authority to operate this equipment. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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.

KCC Statement

유선 제품용 / B 급 기기 (가정용 방송 통신 기기)
이 기기는 가정용 (B 급) 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며 , 모든 지역에서 사용할 수 있습니다 .

RoHS

This product is RoHS compliant.

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	86-400-810-0-810
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 CS82U / CS84U package consists of:

- 1 CS82U / CS84U PS/2-USB KVM Switch
- 2 Custom KVM Cable sets (CS82U)
- 4 Custom KVM Cable Sets (CS84U)
- 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 CS82U / CS84U 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 CS82U / CS84U. 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 CS82U / CS84U 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 are provided.

Chapter 3, Basic Operation, explains the fundamental concepts involved in operating the CS82U / CS84U.

Chapter 4, Hotkey Operation, details all of the concepts and procedures involved in the Hotkey operation of your CS82U / CS84U installation.

Chapter 5, Keyboard Emulation, provides tables that list the PC to Mac and PC to Sun keyboard emulation mappings.

Chapter 6, The Firmware Upgrade Utility, explains how to upgrade the CS82U / CS84U's firmware with the latest available versions.

An Appendix, provides specifications and other technical information regarding the CS82U / CS84U.

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 CS82U / CS84U PS/2-USB KVM Switch is a desktop control unit that allows users to access two or four computers from a single KVM console (PS/2 or USB keyboard and mouse, and VGA monitor). The CS82U / CS84U comes with ATEN's patented Video DynaSync™ technology, which eliminates boot-up display problems and optimizes resolution, and features dual console keyboard and mouse ports, meaning any combination of PS/2 or USB keyboard and mouse can be used.

There are three convenient methods to access the computers: port selection pushbuttons located on the unit's front panel; hotkey combinations entered from the keyboard; and the very latest in mouse port-switching – simply double-click on the scroll wheel of a USB mouse to change ports.

The CS82U / CS84U PS/2-USB KVM Switch also permits each computer to access any peripherals connected to the mouse USB ports (when mouse emulation is turned off).

Setup is fast and easy; simply plug cables into their appropriate ports. There is no software to configure, no installation routines, and no incompatibility problems. Since the CS82U / CS84U intercepts keyboard input directly, it will work on multiple computing platforms.

There is no better way to save time and money than with a CS82U / CS84U installation. Since a single console manages all of the computers, the CS82U / CS84U setup: eliminates the expense of having to purchase separate console components for each computer; saves all the space those extra components would take up; saves on energy costs; and eliminates the inconvenience and wasted effort involved in constantly moving from one computer to another.

Features

- One PS/2-USB VGA console controls two (CS82U) or four (CS84U) VGA interface computers
- Computer selection via front panel pushbuttons, hotkeys, and mouse
- Multiplatform support – Windows 2000/XP/Vista/7, Linux, Mac, and Sun*
- Superior video quality – 2048 x 1536; DDC2B
- Video DynaSync™ – exclusive ATEN technology optimizes display resolution and eliminates boot-up display problems
- Supports widescreen resolutions
- Console mouse port emulation/bypass feature supports most mouse drivers and multifunction mice
- USB 1.1 mouse port can be used as a USB hub for USB peripheral sharing (when mouse emulation is turned off)
- Complete keyboard emulation for error-free booting
- Mac/Sun keyboard support and emulation*
- Multilingual keyboard mapping – supports English, Japanese, and French keyboards
- Gaming keyboard support
- Auto Scan Mode for monitoring all computers
- Firmware upgradable
- Non-powered

Note: 1. See *Hotkey Default Settings*, page 39, for full details.

2. PC keyboard combinations emulate Mac/Sun keyboards; Mac/Sun keyboard work only with their own computers

Hardware Requirements

Console

- A VGA compatible monitor capable of the highest possible resolution
- A USB or PS/2 mouse
- A USB or PS/2 keyboard

Computers

The following equipment must be available on each computer:

- A VGA port

Note: The quality of the display is affected by the quality of the VGA display card. For best results, we recommend you purchase a high quality product.

- Type A USB ports or 6-pin Mini-DIN PS/2 ports

Cables

Only KVM cable sets which are specifically designed to work with this switch may be used to link to the computers. Two (CS82U) or four (CS84U) cable sets are provided with this package. To order further cable sets, please see table, below:

Connectors	Length	Part Number
USB, PS/2	1.2 m	2L-5301UP
USB, PS/2	1.8 m	2L-5302UP
USB, PS/2	3 m	2L-5303UP
USB	1.2 m	2L-5201U
USB	1.8 m	2L-5202U
USB	3 m	2L-5203U
USB	5 m	2L-5205U

Note: The quality of the display is affected by the quality and length of the cables. If you need additional cable sets, please contact your dealer to purchase the appropriate ones for your switch.

Operating Systems

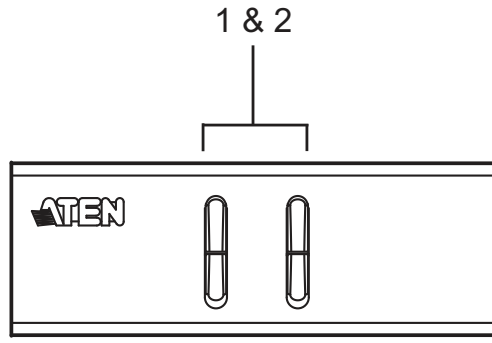
Supported operating systems are shown in the table, below:

OS		Version
Windows		2000 / XP / 2003 / 2008 / Vista / 7
Linux	RedHat	9.0 and higher
	SuSE	10 / 11.1 and higher
	Debian	3.1 / 4.0
	Ubuntu	7.04 / 7.10
UNIX	AIX	4.3 and higher
	FreeBSD	5.5 and higher
	Sun	Solaris 8 and higher
Novell	Netware	6.0 and higher
Mac		OS 9 to 10.6

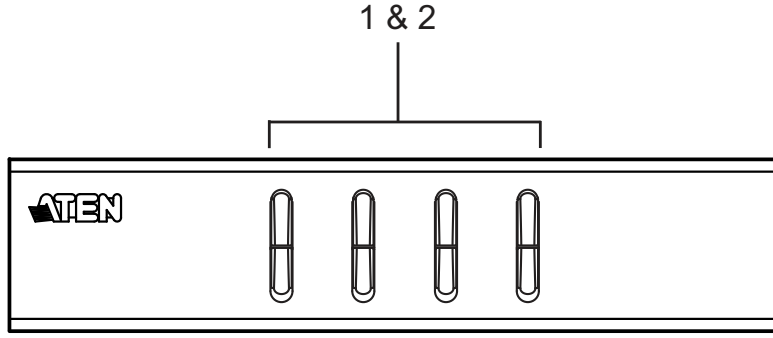
Note: Supports Linux Kernel 2.6 and higher.

Components

CS82U Front View

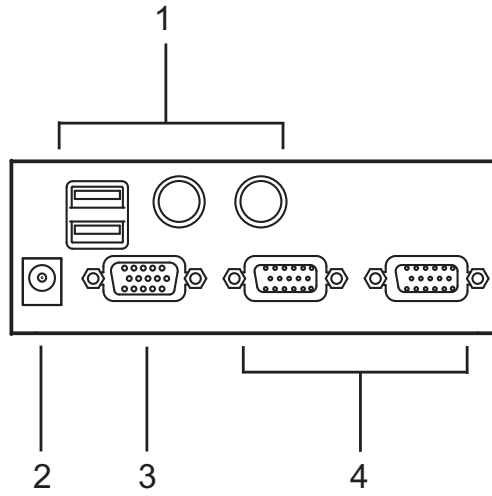


CS84U Front View

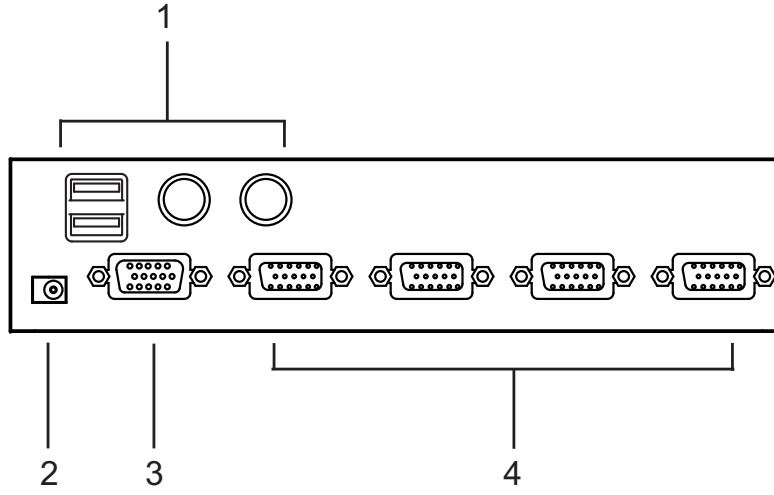


No.	Component	Description
1	Port Selection Pushbuttons	For manual port selection: ◆ Press and release a port selection pushbutton to bring the KVM focus to the computer attached to its corresponding port. The Port LED lights bright orange. ◆ Press and hold port selection pushbutton 1 and 2 for more than 2 seconds to start Auto Scan Mode, see page 18 for details. ◆ Press and release either port selection pushbutton (1 or 2) to stop Auto Scan Mode. The KVM focus goes to the computer attached to the corresponding port of the switch you pressed. ◆ Press port selection pushbuttons 3 and 4 simultaneously for 2 seconds to perform a keyboard and mouse reset (CS84U only).
2	Port LEDs	The Port LEDs are built into the Port Selection Switches. **KVM** ◆ Lights DIM ORANGE to indicate that the computer attached to the corresponding port is up and running (On Line). ◆ Flashes to indicate that Firmware Upgrade mode is in effect. ◆ Changes to BRIGHT ORANGE to indicate that the computer attached to its corresponding port is the one that has the KVM focus (Selected). ◆ Flashes to indicate that the computer attached to its corresponding port is being accessed under Auto Scan mode.

CS82U Rear View



CS84U Rear View



No.	Component	Description
1	Console Keyboard and Mouse Ports	The cables from your USB or PS/2 console keyboard and USB or PS/2 console mouse plug in here. Each connector is marked with an appropriate icon to indicate itself.
2	Power Jack	If you choose to use external power, the power adapter cable plugs into this jack.
3	Console Monitor Port	The cable from your VGA console monitor plugs into this port.
4	KVM Port Section	The custom KVM cable sets that link the CS82U / CS84U to your computers plug in here. Each KVM port section is comprised of a single female SPHD-18 port, which incorporates both the USB, PS/2 and VGA connection.

Note: 1. Use of a power adapter (DV 5V) is optional, and requires a separate purchase.

2. The shape of the 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 computer.

Chapter 2
Hardware Setup



1. Important safety information regarding the placement of this device is provided on page 33. 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 power to all the devices you will be installing has been turned off. You must unplug the power cords of any computers that have the Keyboard Power On function.

Cable Connections

To set up your CS82U / CS84U installation, refer to the installation diagram on the following page (the numbers in the diagrams correspond to the steps, below), and do the following:

1. Plug your keyboard and mouse into the USB or PS/2 console ports located on the unit's rear panel.
2. Plug your console monitor into the VGA console port located in the unit's rear panel and power on the monitor.
3. Using the custom KVM cable set (provided with this package), plug the custom SPHD connector into any available socket in the KVM port section of the switch
4. At the other end of the cable, plug the USB or PS/2 and VGA connectors into their respective ports on the computer.

Note: If you are using a combo console – USB mouse and PS/2 keyboard, for example – plug in both the USB and PS/2 connectors.

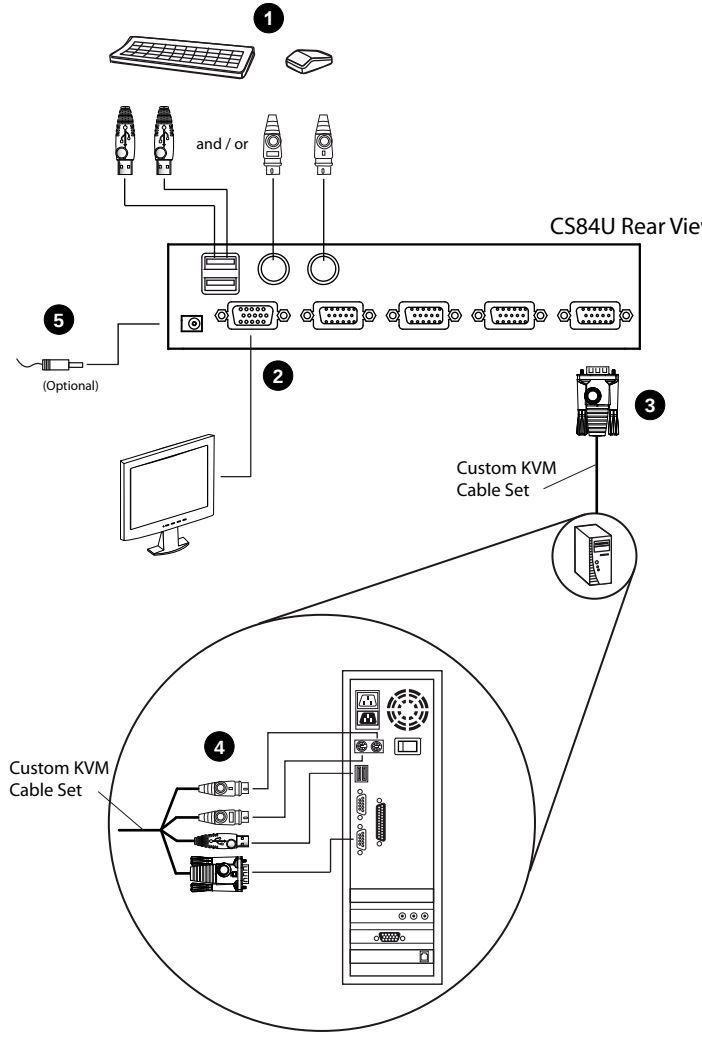
5. If you choose to use external power, plug the power adapter into an AC power source, then plug power adapter cable into the switch's Power Jack.

Note: The power adapter should be DC 5V (positive inside / negative outside)

6. Power on the computers.

Note: Make sure the computers and devices that the CS82U / CS84U connects to are also properly grounded.

Installation Diagram



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Chapter 3
Basic Operation

Overview

There are three convenient methods to access the computers: Manual – which involves pressing the port selection pushbuttons located on the unit's front panel; Mouse – which involves clicking the scroll wheel of the USB mouse; and Hotkey – which involves entering combinations from the keyboard. Hotkey port selection is discussed in the next chapter.

Manual Switching

For manual port selection:

- Press and release a port selection pushbutton to bring the KVM focus to the computer attached to its corresponding port. The Port LED lights bright orange.
- Press and hold port selection pushbutton 1 and 2 for more than 2 seconds to start Auto Scan Mode, see page 18 for details.
- Press and release either port selection pushbutton (1 or 2) to stop Auto Scan Mode. The KVM focus goes to the computer attached to the corresponding port of the switch you pressed.
- Press port selection pushbuttons 3 and 4 simultaneously for 2 seconds to perform a keyboard and mouse reset (CS84U only).

Mouse Port-switching

The CS82U / CS84U supports the very latest in mouse port-switching – simply double-click the scroll wheel of your USB mouse to cycle through the ports.

Note: 1. This featured is only supported by USB 3-key scroll wheel mice.

2. The default setting is disabled

3. This feature is only supported when Mouse Emulation is enabled. See *Mouse Port-switching*, page 23, for details.

Powering Off and Restarting

If it becomes necessary to power off the CS82U / CS84U unit, before starting it back up you must do the following:

1. Shut down all the computers that are attached to the switch.
2. Unplug the switch's power adapter cable.
3. Wait 10 seconds, then plug the switch's power adapter cable back in.
4. After the switch is up, power on the computers.

Port ID Numbering

Each KVM port section on the CS82U / CS84U switch is assigned a port number. (1 or 2 for the CS82U; 1 to 4 for the CS84U). The port numbers are marked on the rear panel of the switch (see page 7 for details).

The Port ID of a computer is derived from the KVM port number it is connected to. For example, a computer connected to KVM port 2 has a Port ID of 2.

The Port ID is used to specify which computer gets the KVM focus with the Hotkey port selection method (see page 17 for details).

Alternative Manual Port Selection Settings

When Hotkey Setting Mode has been activated, pressing [S] will invoke the alternative front panel pushbutton manual port selection functions as follows (see page 23, also):

- Press a port selection pushbutton once to bring the KVM focus to the computer attached to its corresponding port.
- Press and hold port selection pushbuttons 1 and 2 for more than 2 seconds to start Auto Scan Mode, see page 18 for details.
- Press port selection pushbuttons 3 and 4 simultaneously for 2 seconds to perform a keyboard and mouse reset (CS84U only).

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Chapter 4
Hotkey Operation

The CS82U / CS84U provides an extensive, easy-to-use, hotkey function that makes it convenient to control and configure your KVM installation from the keyboard.

Port Switching

All port switches begin with tapping the **Scroll Lock** key twice. The tables below describe the actions that each combination performs.

Note: If using the Scroll Lock key conflicts with other programs running on the computer, the **Ctrl** key can be used, instead. See *Alternate Port Switching Keys*, page 20 for details.

Cycling Through the Ports

Hotkey	Action
[Scroll Lock] [Scroll Lock] [Enter]	Brings the **KVM** focus from the port that currently has the KVM focus to the next port on the installation (1 to 2; 2 to 1 for the CS82U; 1 to 2; 2 to 3; 3 to 4; 4 to 1 for the CS84U).

Going Directly to a Port

Hotkey	Action
[Scroll Lock] [Scroll Lock] [n] [Enter]	Brings the **KVM** focus to the computer attached to the port corresponding to the specified Port ID.

Note: The **n** stands for the computer's Port ID number (1, 2, 3, or 4). See ?$paratext>? on page 14. Replace the **n** with the appropriate Port ID when entering hotkey combinations.

Auto Scanning

The CS82U / CS84U's Auto Scan feature automatically cycles the KVM focus through the computer ports at regular intervals. This allows you to monitor the computer activity without having to take the trouble of switching from port to port manually. See the table below for details.

Hotkey	Action
[Scroll Lock] [Scroll Lock] [A] [Enter]	Invokes Auto Scan. The KVM focus cycles from port to port at **5 second intervals**. Five second intervals is the Default setting.
[Scroll Lock] [Scroll Lock] [A] [Enter] [n]	The KVM focus cycles from port to port at **n** second intervals. Replace the **n** with a number between 1 and 4 when entering this hotkey combination to set the number of seconds that the CS82U / CS84U should dwell on a port before moving on to the next, as follows: **1** = 3 seconds **2** = 5 seconds (default) **3** = 10 seconds **4** = 20 seconds

Note: 1. 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.

2. Although the video focus switches from port to port, the keyboard and mouse do not switch. They stay at the port they were on when Auto Scanning started.

3. To exit Auto Scan Mode, press the **Esc** key or the **Spacebar**.

Hotkey Setting Mode

Hotkey Setting Mode is used to set up your CS82U / CS84U switch configuration. All operations begin with invoking Hotkey Setting Mode (HSM).

Invoking HSM

To invoke HSM do the following:

1. Press and hold down **[Num Lock]**.
2. Press and release **[-]**.
3. Release **[Num Lock]**.

Note: 1. There is an alternate key combination to invoke HSM. See page 20 for details.

2. The minus key must be released within one half second, otherwise Hotkey invocation is canceled.

When HSM is active, the Caps Lock, and Scroll Lock LEDs flash in succession to indicate that HSM is in effect. They stop flashing and revert to normal status when you exit HSM.

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

At the conclusion of some hotkey operations, you automatically exit hotkey mode. With some operations, you must exit manually. To exit HSM manually, press the **Esc** key, or the **Spacebar**.

Alternate HSM Invocation Keys

An alternate set of HSM invocation keys is provided in case the default set conflicts with programs running on the computers.

To switch to the alternate HSM invocation set, do the following:

1. Invoke HSM (see page 19)
2. Press and release **[H]**.

   The HSM invocation keys become the Ctrl key (instead of Num Lock) and the F12 key (instead of minus).

Note: This procedure is a toggle between the two methods. To revert back to the original HSM invocation keys, invoke HSM, then press and release the **H** key again.

Alternate Port Switching Keys

The port switching activation keys can be changed from tapping the Scroll Lock key twice ([Scroll Lock] [Scroll Lock]) to tapping the Ctrl key twice ([Ctrl] [Ctrl]). To change the port switching activation keys, do the following:

1. Invoke HSM (see page 19)
2. Press and release **[T]** .

Note: This procedure is a toggle between the two methods. To revert back to the original [Scroll Lock] [Scroll Lock] method, invoke HSM, then press and release the **T** key again.

Keyboard Language

To change the keyboard language, do the following:

1. Invoke HSM (see page 19).
2. Press **[F6] [*nn*] [Enter]**.

Note: *nn* is a two-digit number that represents the keyboard language code (US English: 33; French: 08; Japanese: 15).

Keyboard Operating Platform

The CS82U / CS84U's default port configuration is for a PC compatible keyboard operating platform. If your console uses a PC compatible keyboard and you have a Mac attached to a port, for example, you can change the port's keyboard operating platform configuration so that the PC compatible keyboard emulates the Mac keyboard. The procedure is as follows:

1. Bring the KVM focus to the port you want to set.
2. Invoke HSM (see page 19)
3. Press and release the appropriate Function key (see table below). After completing this procedure, you automatically exit HSM.

Function Key	Operation
[F2]	Enables Mac keyboard emulation, see *Mac Keyboard*, page 25 for details.
[F3]	Enables Sun keyboard emulation, see *Sun Keyboard*, page 26 details.
[F10]	Automatically detects and sets the keyboard operating platform.

List Switch Settings

To see a listing of the current switch settings, do the following:

1. Open a text editor or word processor and place the cursor in the page window.
2. Invoke HSM (see page 19).
3. Press and release **[F4]** to display the settings.

USB Reset

If the USB loses focus and needs to be reset, do the following:

1. Invoke HSM (see page 19).
2. Press and release **[F5]**.

Hotkey Buzzer Control

The Buzzer can be hotkey toggled on and off. To toggle the Buzzer, do the following:

1. Invoke HSM (see page 19).
2. Press and release **[B]**.

The Buzzer toggles on or off.

Disable Port Switching Keys

To disable the Port Switching Keys ([Scroll Lock] [Scroll Lock] / [Ctrl] [Ctrl]), do the following:

1. Invoke HSM (see page 19).
2. Press **[X] [Enter]**.

Note: This procedure is a toggle. To enable the Port Switching keys repeat steps 1 and 2.

Firmware Upgrade Mode

To set the CS82U / CS84U to Firmware Upgrade Mode, do the following:

1. Invoke HSM (see page 19).
2. Key in: `upgrade`
3. Press **[Enter]**.

   All front panel LEDs (green and orange) flash to indicate Firmware Upgrade Mode is in effect.

Note: To exit Firmware Upgrade Mode, you must power off the switch.

Restore Default Settings

To reset the CS82U / CS84U to its default hotkey settings, do the following:

1. Invoke HSM (see page 19).
2. Press **[R] [Enter]**.

See *Hotkey Default Settings*, page 39

Video DynaSync

To invoke Video DynaSync, ATEN's exclusive technology that eliminates boot-up display problems and optimizes resolution when switching between ports, do the following:

1. Invoke HSM (see page 19).
2. Press **[D]**.

Mouse Port-switching

To enable/disable the Mouse Port-switching function, do the following:

1. Invoke HSM (see page 19).
2. Press **[W]**.

Note: 1. This procedure is a toggle.
2. The default setting is disabled.
3. The feature is only supported when mouse emulation is enabled.

Mouse Emulation Control

To toggle between mouse emulation enabled and disabled, do the following:

1. Invoke HSM (see page 19).
2. Press **[M]**.

Keyboard Emulation Control

To toggle between keyboard emulation enabled and disabled, do the following:

1. Invoke HSM (see page 19).
2. Press **[N]**.

Note: When keyboard emulation is disabled, the [m], [w], [F2], [F3], [F10], [F4], [F5], and [F6] hotkeys are disabled.

Other OS Mode

To reset keyboards and mice for operating systems that do not support USB 2.0, do the following:

1. Invoke HSM (see page 19).
2. Press **[F1]**.

HSM Summary Table

After invoking HSM (see page 19), key in one of the following keys to perform the corresponding function:

Key	Function
[H]	Toggles between the default ([Num Lock] [-]) and alternate ([Ctrl] [F12]) HSM invocation keys.
[T]	Toggles between the default ([Scroll Lock] [Scroll Lock]) and alternate ([Ctrl] [Ctrl]) Port Switching keys.
[F2]	Enables Mac keyboard emulation.
[F3]	Enables Sun keyboard emulation.
[F10]	Automatically detects and sets the keyboard operating platform.
[F4]	Prints the switch's current settings via a text editor or word processor.
[F5]	Performs a reset on all USB devices.
[F6] [*nn*] [Enter]	Sets the keyboard language. **Note:** *nn* is a two-digit number that represents one of the following keyboard language code: US English: 33; French: 08; Japanese: 15.
[B]	Enables/Disables the buzzer.
[X] [Enter]	Enables/Disables the port switching keys.
[R] [Enter]	Resets the hotkey settings to their default status.
[u] [p] [g] [r] [a] [d] [e] [Enter]	Invokes Firmware Upgrade Mode.
[D]	Invokes Video DynaSync, ATEN's exclusive technology that eliminates boot-up display problems and optimizes resolution when switching between ports.
[N]	Enables/Disables keyboard emulation.
[M]	Enables/Disables mouse emulation.
[W]	Enables/Disables mouse port-switching.
[F1]	Resets keyboard and mouse under operating systems that do not support USB 2.0.

Chapter 5
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
	

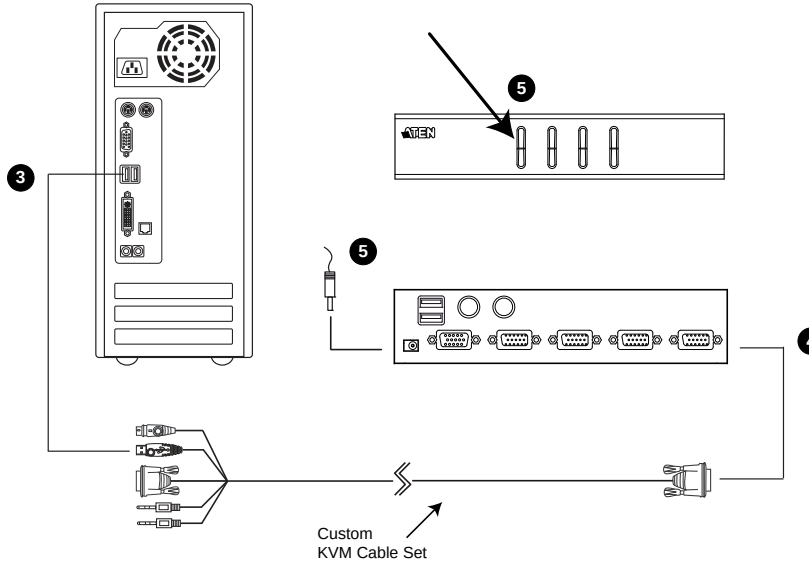
Note: When using key combinations, press and release the first key (Ctrl), then press and release the activation key.

Chapter 6
The Firmware Upgrade Utility

The Windows-based Firmware Upgrade Utility (FWUpgrade.exe) provides a smooth, automated process for upgrading the KVM switch's firmware. The Utility comes as part of a Firmware Upgrade Package that is specific for each device. Check the web site regularly to find the latest packages and information relating to them: `http://www.aten.com`

Before you Begin

1. From a computer that is not part of your KVM installation go to our Internet support site and choose the model name that relates to your device (CS82U / CS84U) to get a list of available Firmware Upgrade Packages.
2. Choose the Firmware Upgrade Package you want to install (usually the most recent), and download it to your computer.
3. Disconnect the CS82U / CS84U from your KVM installation and power it off . Connect one of the custom KVM cable set's Type A USB connectors to a USB hub port on your computer.



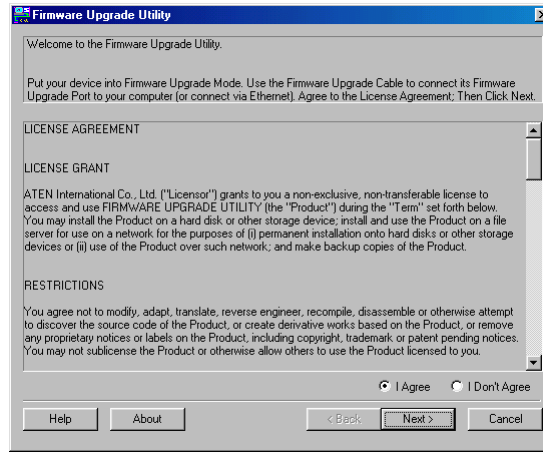
4. At the other end of the custom KVM cable set, connect the SPHD connector to the Port 1 KVM section.
5. Invoke Firmware Upgrade Mode (see *Firmware Upgrade Mode*, page 22). The front panel LEDs flash to indicate that Firmware Upgrade Mode is in effect.

Starting the Upgrade

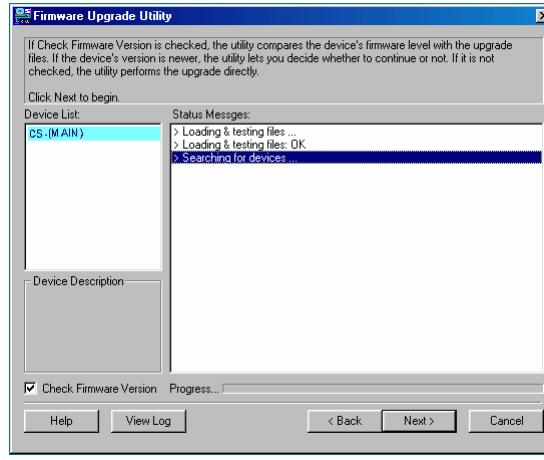
1. Run the downloaded Firmware Upgrade Package file – either by double clicking the file icon, or using a command line to enter the full path.

   The *Firmware Upgrade Utility* Welcome screen appears:

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



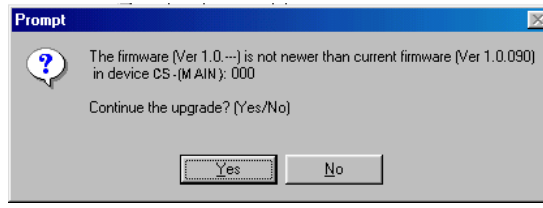
3. Click **Next.** The Firmware Upgrade Utility main screen appears. The Utility inspects your installation. All the devices capable of being upgraded by the package are listed in the *Device List* panel.



(Continues on next page.)

4. As you select a device in the list, its description appears in the Device Description panel.After you have made your device selection(s), Click **Next** to perform the upgrade.

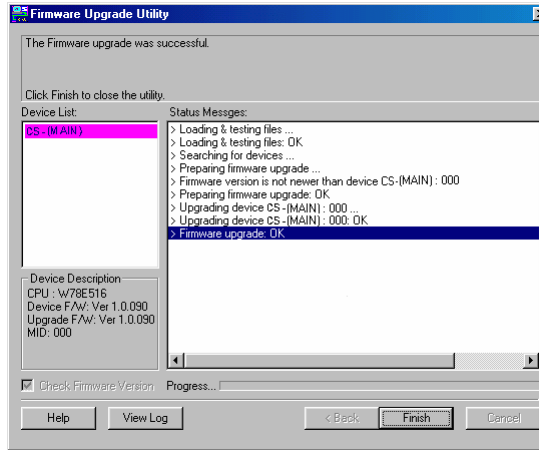
   If you enabled Check Firmware Version, the Utility compares the device's firmware level with that of the upgrade files. If the device's version is higher than the upgrade version, a dialog box gives you the option to Continue or Cancel.



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

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.

After a successful completion, the CS82U / CS84U exits Firmware Upgrade Mode, and resets itself.

Upgrade Failed

If the *Upgrade Succeeded* screen doesn't appear, it means that the upgrade failed to complete successfully, in which case you should do the following:

1. Press and hold the Port 1 selection pushbutton. While you are holding the pushbutton, connect the CS82U / CS84U to the computer using the USB cable of the custom cable set (see diagram, page 25) to enter Firmware Upgrade Mode. The front panel LEDs flash to indicate that Firmware Upgrade Mode is in effect.
2. Run the upgrade again. See *Starting the Upgrade*, page 29.

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Appendix

Safety Instructions

- Read all of these instructions. Save them for future reference.
- Follow all warnings and instructions marked on the device.
- Do not place the device on any unstable surface (cart, stand, table, etc.). If the device falls, serious damage will result.
- Do not use the device near water.
- Do not place the device near, or over, radiators or heat registers.
- The device cabinet is provided with slots and openings to allow for adequate ventilation. To ensure reliable operation, and to protect against overheating, these openings must never be blocked or covered.
- The device should never be placed on a soft surface (bed, sofa, rug, etc.) as this will block its ventilation openings. Likewise, the device should not be placed in a built in enclosure unless adequate ventilation has been provided.
- Never spill liquid of any kind on the device.
- Unplug the device from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
- The device should be operated from the type of power source indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- The device is designed for IT power distribution systems with 230V phase-to-phase voltage.
- To prevent damage to your installation, it is important that all devices are properly grounded.
- The device is equipped with a 3-wire grounding type plug. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not attempt to defeat the purpose of the grounding-type plug. Always follow your local/national wiring codes.
- Do not allow anything to rest on the power cord or cables. Route the power cord and cables so that they cannot be stepped on or tripped over.

- If an extension cord is used with this device make sure that the total of the ampere ratings of all products used on this cord does not exceed the extension cord ampere rating. Make sure that the total of all products plugged into the wall outlet does not exceed 15 amperes.
- To help protect your system from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or un-interruptible power supply (UPS).
- Position system cables and power cables carefully; Be sure that nothing rests on any cables.
- Never push objects of any kind into or through cabinet slots. They may touch dangerous voltage points or short out parts resulting in a risk of fire or electrical shock.
- Do not attempt to service the device yourself. Refer all servicing to qualified service personnel.
- If the following conditions occur, unplug the device from the wall outlet and bring it to qualified service personnel for repair.
  - The power cord or plug has become damaged or frayed.
  - Liquid has been spilled into the device.
  - The device has been exposed to rain or water.
  - The device has been dropped, or the cabinet has been damaged.
  - The device exhibits a distinct change in performance, indicating a need for service.
  - The device does not operate normally when the operating instructions are followed.
- Only adjust those controls that are covered in the operating instructions. Improper adjustment of other controls may result in damage that will require extensive work by a qualified technician to repair.

Technical Support

International

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

North America

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

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			CS82U	CS84U
Computer Connections			2	4
Port Selection			Front Panel Pushbuttons; Hotkey, USB Mouse	
Connectors	Console Ports	Keyboard	1 x USB Type A Female (Black), 1 x 6-pin Mini-DIN Female (Purple)	
		Video	1 x HDB-15 Female (Blue)	
		Mouse	1 x USB Type A Female (Black), 1 x 6-pin Mini-DIN Female (Green)	
	KVM Ports		2 x SPHD-18 Female (Yellow)	4 x SPHD-18 Female (Yellow)
	Power (Optional)		1 x DC Jack	1 x DC Jack
Switches	Selected		2 x Pushbutton	4 x Pushbutton
LEDs	On Line		2 (Orange)	4 (Orange)
	Selected		2 (Green)	4 (Green)
Emulation	Keyboard / Mouse		USB	
Video			2048 x 1536 @ 60 Hz; DDC2B	
Scan Interval			3, 5, 10, 20 secs. (5 secs. default)	
Power Consumption			DC 5V, 1.1 W	DC 5V, 1.2 W
Environment	Operating Temp.		0–50ºC	
	Storage Temp.		-20–60ºC	
	Humidity		0–80% RH, Non-condensing	
Physical Properties	Housing		Metal	
	Weight		0.54 kg	0.77 kg
	Dimensions (L x W x H)		14.00 x 8.70 x 5.50 cm	21.00 x 8.70 x 5.50 cm

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 Chapter 6, **The Firmware Upgrade Utility**, for details.

Symptom	Possible Cause	Action
Erratic behavior.	Unit not receiving enough power.	Use a DC 5 V power adapter if you are not already using one. If you are already using a power adapter, check that it matches the system specifications, and that it is plugged in and functioning properly.
	Keyboard and/or mouse need to be reset.	Unplug the cable(s) from the console port(s), then plug it/them back in.
	No connection to the computer.	Check the cable from the switch to the computer to make sure it is properly connected.
	KVM switch needs to be reset.	Power off all devices on the installation; power off the KVM switch; wait five seconds; then power up.
USB devices not responding.	USB ports need to be reset.	Unplug the device's USB cable from the USB port on the switch's rear panel, then plug it back in.
		Use the USB Reset hotkey combination (see page 21), to reset the USB ports.
Cannot switch ports by pressing [Scroll Lock] twice	Keyboard is incompatible with Scroll Lock invocation.	Switch to the Alternate HSM invocation keys. See *Alternate HSM Invocation Keys*, page 20, for details.

Symptom	Possible Cause	Action
Monitor does not display after KVM cable set is hot plugged.	Some graphics cards are incompatible with cable set hot plugging.	Power off all devices on the installation (see safety note, page 33); power off the switch; confirm all KVM cables are properly connected; power on the switch; power on the computers
When switching ports, the monitor does not display.	Monitor is new or this is the first time installation.	Switch ports again and wait two or more seconds for the PC's EDID to pass to the monitor.
	The PC's EDID has not passed through to the monitor when switching ports	Use the [d] hotkey to invoke Video DynaSync one more time or switch to another PC to reconnect the switch. See *HSM Summary Table*, page 24.

Hotkey Default Settings

The hotkey factory default settings are as follows:

Setting	Hotkey	Default
Port Switching	[T]	[Scroll Lock] [Scroll Lock]
Invoking HSM	[H]	[Number Lock] [-]
Auto Scan Interval	[Scroll Lock] [Scroll Lock] [A] [Enter]	5 seconds
Keyboard Operating Platform	[F10]	PC Compatible
Mouse Emulation	[M]	Enabled
Keyboard Emulation	[N]	Enabled
Mouse Port-switching	[W]	Disabled
Video DynaSync	[D]	Enabled
Port Switching Keys (On / Off)	[X] [Enter]	Enabled
Buzzer	[B]	Enabled
Keyboard Language	[F6] [nn] [Enter] Note: **nn** is the language number	English

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

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/