



Simply Better Connections

## CS1842 / CS1844

2/4-Port USB 3.0 4K HDMI Dual  
Display KVMP™ Switch  
User Manual

## Compliance Statements

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### FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT

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

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

#### FCC Caution

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

#### Warning

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

#### Achtung

Der Gebrauch dieses Geräts in Wohnumgebung kann Funkstörungen verursachen.



### KCC Statement

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

### **Industry Canada Statement**

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

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

### **HDMI Trademark Statement**

The terms HDMI, HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.



### **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	2/4 埠 USB 3.0 4K HDMI 雙螢幕 KVM <sup>TM</sup> 多電腦切換器			型號 ( 型式 ) Type designation (Type)	CS1842 / CS1844	
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 <sup>+6</sup> )	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：40°C

最大額定電壓：DC 12V



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## User Information

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### Online Registration

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

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International	<a href="http://eservice.aten.com">http://eservice.aten.com</a>
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### Telephone Support

For telephone support, call this number:

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

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### User Notice

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

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

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

## Product Information

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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	<a href="http://www.aten.com">http://www.aten.com</a>
North America	<a href="http://www.aten-usa.com">http://www.aten-usa.com</a>

## Package Contents

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

### **CS1842**

- ◆ 1 CS1842 2-Port USB 3.0 4K HDMI Dual Display KVMP™ Switch
- ◆ 4 HDMI cables\*
- ◆ 2 USB 3.0 cables
- ◆ 2 speaker cables
- ◆ 2 microphone cables
- ◆ 1 power adapter
- ◆ 1 remote port selector
- ◆ 1 user instructions

### **CS1844**

- ◆ 1 CS1844 4-Port USB 3.0 4K HDMI Dual Display KVMP™ Switch
- ◆ 8 HDMI cables\*
- ◆ 4 USB 3.0 cables
- ◆ 4 speaker cables
- ◆ 4 microphone cables
- ◆ 1 power adapter
- ◆ 1 remote port selector
- ◆ 1 user instructions

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**Note:** \*To support 4K video resolution, we recommend to use the provided ATEN HDMI cables.

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## About this Manual

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This User Manual is provided to help you get the most from your CS1842 / CS1844 unit. 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 CS1842 / CS1844. Its purpose, features and benefits are presented, and its front, side, 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 CS1842 / CS1844.

**Chapter 4, Hotkey Operation**, details all of the concepts and procedures involved in the Hotkey operation of your CS1842 / CS1844 installation.

**Chapter 5, 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 the CS1842 / CS1844's firmware with the latest available versions.

**Appendix**, which provides specifications and other technical information regarding the CS1842 / CS1844.

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### Note:

- ◆ Read this manual thoroughly and follow the installation and operation procedures carefully to prevent any damage to the unit or any connected devices.
  - ◆ The product may be updated, with features and functions added, improved or removed since the release of this manual. For an up-to-date user manual, visit <http://www.aten.com/global/en>
-

## Conventions

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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 <b>Enter</b> 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 <i>Start</i> menu, and then select <i>Run</i> .                         |
|  | Indicates critical information.  |

# Chapter 1

## Introduction

### Overview

---

The CS1842 / CS1844 2/4-Port USB 3.0 4K HDMI Dual Display KVMPTM Switch combines KVM switch with HDMI video interface and 2-port USB 3.1 Gen 1 hub. The HDMI interface provides 4K UHD @ 60 Hz and 4K DCI @ 60Hz resolution that displays the most vivid high-definition images available while producing premium sound for music, movies, and games.

The CS1842 / CS1844 respectively allows users to access two or four HDMI computers from a single USB keyboard, USB mouse and two HDMI monitors. The CS1842 / CS1844 also supports Quad Display by connecting two Dual Display KVM switches. In addition to the front panel pushbuttons, hotkeys, mouse port-switching, and remote port selector functionality, the CS1842 / CS1844 offers serial commands to help switch ports and configure device settings. A Power On Detection feature also ensures that if one computer is powered off, the CS1842 / CS1844 will automatically switch ports to the next powered-on computer.

With a built-in USB 3.1 Gen 1 hub, the CS1842 / CS1844 provides SuperSpeed 5 Gbps transfer rates to all connected USB peripherals. The unit's independent (asynchronous) switching feature, allows the KVM focus to be on one computer while the USB peripheral focus is on another computer. This eliminates the need to purchase a separate USB hub or stand-alone peripheral sharer – such as a print server, modem splitter, etc.

Featuring an unbeatable combination of ultra high 4K resolutions, a next generation USB 3.1 Gen 1 hub and enhanced, user-friendly operations, the CS1842 / CS1844 delivers the latest innovations in desktop KVM switching technology.

## Features

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- ◆ One USB keyboard, mouse and two HDMI monitors control two/four HDMI computers and share two USB peripherals
- ◆ Supports Quad Display by connecting two Dual Display KVM switches
- ◆ Video DynaSync™ – An exclusive ATEN technology that eliminates boot-up display problems and optimizes the resolution when switching among different sources
- ◆ Supports superior video quality – 4K UHD (3840 x 2160 @ 60 Hz) and 4K DCI (4096 x 2160 @ 60Hz)
- ◆ Computer selection via pushbuttons, hotkeys, mouse<sup>1</sup>, remote port selector, and RS-232 commands<sup>2</sup>
- ◆ Built-in 2- Port USB 3.1 Gen 1 hub with SuperSpeed 5 Gbps data transfer rates
- ◆ Supports Console keyboard emulation/bypass feature
- ◆ Supports Console mouse emulation/bypass feature
- ◆ Independent switching of KVM, USB peripheral, and audio focus<sup>3</sup>
- ◆ Multilingual keyboard mapping - supports English, Japanese, French, and German keyboards
- ◆ HDMI compliant, HDCP 2.2 compliant
- ◆ Supports HD Audio<sup>3</sup>
- ◆ Power on detection – if a computer is powered off, the CS1842 / CS1844 automatically switches to the next powered-on computer
- ◆ Hot pluggable – add or remove computers without powering down the switch
- ◆ Sun and Mac keyboard support and emulation<sup>4</sup>
- ◆ Auto Scan Mode for monitoring all computers
- ◆ Firmware upgradeable
- ◆ Supports N-key Rollover<sup>5</sup> (NKRO) – Permits collision-free keying

---

**Note:** 1. Mouse port switching is only supported under mouse emulation mode with a USB 3-button mouse wheel.

2. Slide the DCC switch to the *s* position to allow the KVM switch to receive RS-232 commands via an RJ-45-to-DB-9 cable. Please see *Hardware Connection*, page 37.

3. HD audio through HDMI channel cannot be switched independently.
  4. PC keyboard combinations emulate Mac keyboards. Mac keyboards only work with their own operating system.
  5. N-key Rollover supports up to 15 simultaneous keystrokes.
-

## **Requirements**

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### **Console**

- ◆ Two HDMI monitors capable of the highest possible resolution
- ◆ A USB mouse
- ◆ A USB keyboard
- ◆ Microphone and speakers

### **Computers**

The following equipment must be available on each computer:

- ◆ Two HDMI ports
- ◆ Four HDMI ports for Quad-Display (DCC mode)
- ◆ A USB Type-A port
- ◆ Audio ports

### **Cables**

To guarantee video quality, we recommend using only ATEN HDMI KVM cables. Four (CS1842) or eight (CS1844) cables are provided with this package.

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**Note:** The quality of the display is affected by the quality of the cables. We recommend the total length from the source to the monitor to not exceed 6 meters (3 meters between the PC and the KVM switch. 3 meters between the KVM switch and the monitor). If you need additional cables, please contact your dealer to purchase ATEN approved cables.

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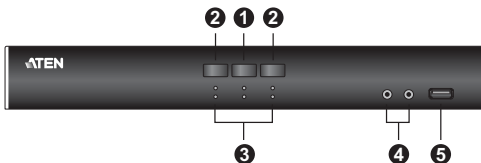
### **Operating Systems**

- ◆ Windows
- ◆ Mac
- ◆ Linux

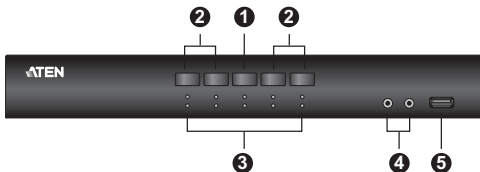


## Components

### CS1842 Front View



### CS1844 Front View



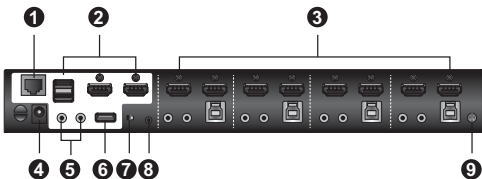
No.	Component	Description
1	mode selection pushbutton	<ul style="list-style-type: none"> <li>◆ This pushbutton allows you to cycle through the four focus modes – complete, KVM, audio, and USB.</li> <li>◆ Press and hold mode selection pushbutton before powering on and to enter Firmware Upgrade Mode.</li> </ul>
2	port selection pushbuttons	<p>For manual port selection (see <i>Manual Switching</i>, page 17):</p> <ul style="list-style-type: none"> <li>◆ Press a port selection pushbutton for longer than two seconds to only bring the KVM focus to the computer attached to its corresponding port.</li> <li>◆ Press a port selection pushbutton twice to bring the audio focus to the computer attached to its corresponding port.</li> <li>◆ Press a switch for less than two seconds to bring the KVM, USB hub, and audio focus to the computer attached to its corresponding port.</li> <li>◆ Press switches 1 and 2 simultaneously for 2 seconds to start Auto Scan Mode (see <i>Auto Scanning</i>, page 25).</li> <li>◆ Press switches 3 and 4 simultaneously for 2 seconds to perform a Keyboard/Mouse reset. <b>Note:</b> This feature is for CS1844 only.</li> </ul>

No.	Component	Description
3	port LEDs	This panel contains LED icons that light to indicate mode and port status. The mode and port selection pushbuttons have three corresponding LED icons that light to indicate status – <b>KVM</b> , <b>Audio</b> , and <b>USB</b> . Refer to <i>LED Status Panel</i> on page 8 for more info.
4	audio jacks	Your console speakers and microphone plug in here.
5	USB 3.1 Gen 1 peripheral port	USB peripherals (printers, scanners, drives etc.) plug into this port. This USB 3.1 Gen 1 port features 5 Gbps data transfer rates for compatible USB peripherals.

## CS1842 Rear View



## CS1844 Rear View



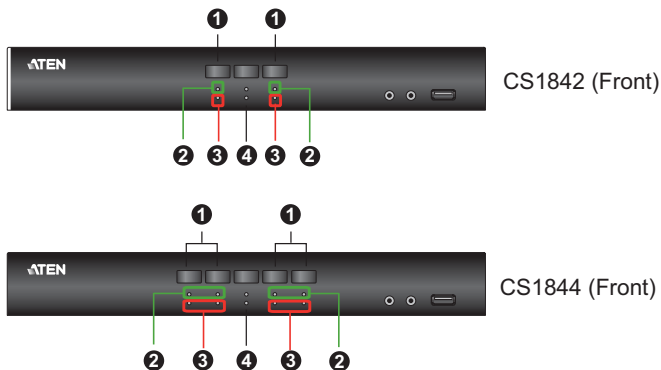
No.	Component	Description
1	DCC port (Daisy Chain Control)	This RJ-45 port is used to connect two units together when setting up DCC mode for a Quad-Display mode. See <i>Quad-Display Installation</i> , page 16 for instructions.
2	console ports section	The cables from your keyboard, mouse, monitors, microphone, and speakers plug in here. Each connector is marked with an appropriate icon to indicate itself.

No.	Component	Description
3	KVM ports section	The cables that link the switch to your computers plug in here. Each KVM port section is comprised of a microphone jack, speaker jack, USB Type B socket and two HDMI connectors
4	power jack	The power adapter cable plugs into this jack.
5	audio jacks	Your console speakers and microphone plug in here.  <b>Note:</b> The microphone and speakers plugged into the front panel have priority over those plugged into these jacks.
6	USB 3.1 Gen 1 peripheral port	USB peripherals (printers, scanners, drives etc.) plug into this port. This USB 3.1 Gen 1 port features 5 Gbps data transfer rates for compatible USB peripherals.
7	DCC switch	This switch is used to specify the <i>Host</i> and <i>Client</i> when setting up two units in Quad-Display DCC mode. See <i>Quad-Display Installation</i> , page 16 for instructions. Slide the DCC switch to the <i>s</i> position to allow the KVM switch to receive RS-232 commands via an RJ-45-to-DB-9 cable. Please see <i>RS-232 Operation</i> , page 37.
8	remote port selector jack	The remote port selector plugs in here.
9	grounding terminal	The grounding wire used to ground the switch attaches here.

**Note:** All console ports are located in the grey area.

## LED Status Panel

The LED status panel is located above the pushbuttons. The LED columns respectively correspond to the pushbuttons below.



No.	Component
1	port LED / KVM icon LED
2	audio icon LED
3	USB link icon LED
4	mode selection LED

### Port LED Behavior

The LEDs of currently focused connectors (KVM, audio, USB link) will be fully-lit.

The LED(s) of KVM connectors not currently focused but connected will be half-lit.

The LED(s) of audio and USB link connectors not currently focused will be dimmed.

## Mode Selection Pushbutton and Mode LED Behavior

Pressing the Mode Selection Pushbutton different number of times will light up different Mode LED, which allows for the follow-up action shown in the table. For more information on the follow-up actions, please refer to *Manual Switching* on page 17.

Button Press	Mode LED that Lights up	Follow-Up Action
Once	KVM, Audio, USB	Press any of the port selection pushbutton to select focus for <b>all connectors</b>
Twice	KVM	Press any of the port selection pushbutton to select focus for <b>KVM connector</b>
Three times	Audio	Press any of the port selection pushbutton to select focus for <b>audio connectors</b>
Four times	USB	Press any of the port selection pushbutton to select focus for <b>USB link</b>

## Buzzer Behavior

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To diagnose which task the CS1842 / CS1844 is performing through the buzzer, please refer to the table below.

Sound	Description
1 beep	<ul style="list-style-type: none"><li>◆ Changing port</li><li>◆ Activating auto-scan mode</li><li>◆ Pausing/resuming auto-scan</li></ul>
1 long beep	<ul style="list-style-type: none"><li>◆ Powering on the unit</li><li>◆ Resetting the unit</li></ul>
2 beeps	<ul style="list-style-type: none"><li>◆ Interrupting auto-scan</li><li>◆ Entering keyboard emulation off mode</li><li>◆ Finishing USB synchronization</li></ul>

Refer to *Buzzer Control* on page 29 if you wish to turn the buzzer on or off.

## Chapter 2

# Hardware Setup



1. Important safety information regarding the placement of this device is provided on page 61. 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.
4. Please operate the device with caution when under high environmental temperatures, as the surface of the device may become overheated under such conditions. For instance, the surface temperature of the device may reach 70 °C (158 °F) or higher when the environmental temperature reaches close 50 °C (122 °F).

## Cable Connections

---

To set up your installation, refer to the installation diagram on the following page (the numbers in the diagram on page 14 correspond to the steps below), and do the following:

1. Ground the CS1842 / CS1844 by connecting one end of a grounding wire to the grounding terminal and the other end to a suitable grounded object.

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**Note:** Do not omit this step. Proper grounding helps to prevent damage to the unit from power surges or static electricity.

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2. Plug your USB keyboard and USB mouse into the USB console ports from the console ports section located on the unit's rear panel.
3. Plug your HDMI monitors into the HDMI console ports from the console ports section located on the unit's rear panel and power on the monitors.

4. Plug your microphone and speakers into the audio jacks located on the unit's front panel. Audio cables are required to be connected on the CPU side for this connection to work.
5. Plug your secondary microphone and speakers into the audio jacks located on the unit's rear panel.

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**Note:** The microphone and speakers plugged into the front panel have priority over those plugged into these jacks.

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6. Use the provided cable sets (HDMI cables, USB 3.0 cable, microphone cable, and speaker cable) with this package. Plug the HDMI connector into any available HDMI "A" socket on the KVM ports section of the switch (CPU1, CPU2, etc.), then plug the USB 3.0 cable, microphone cable, and speaker cable into their corresponding sockets. Use another HDMI cable from the cable sets, plug the HDMI connector into the HDMI "B" socket in the same KVM Ports Section of the switch.

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**Note:** Verify that all the connectors are in the same KVM Ports Section (all in CPU1, all in CPU2, etc.).

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7. At the other end of the cables from step 6, plug the HDMI cables, USB 3.0 cable, microphone cable, and speaker cable into their respective ports on the computer. Repeat steps 6, and 7 for each dual-screen PC system you are installing.
8. (Optional) Plug your USB peripherals into the front or rear USB 3.1 Gen 1 peripheral ports.
9. (Optional) If you choose to use the remote port selector, plug its cable into the remote port selector jack, located on the unit's rear panel.
10. Plug the power adapter that came with your switch into an AC power source, then plug the power adapter cable into the switch's power jack. Now the CS1842 / CS1844 is turned on.
11. Power on the computers.

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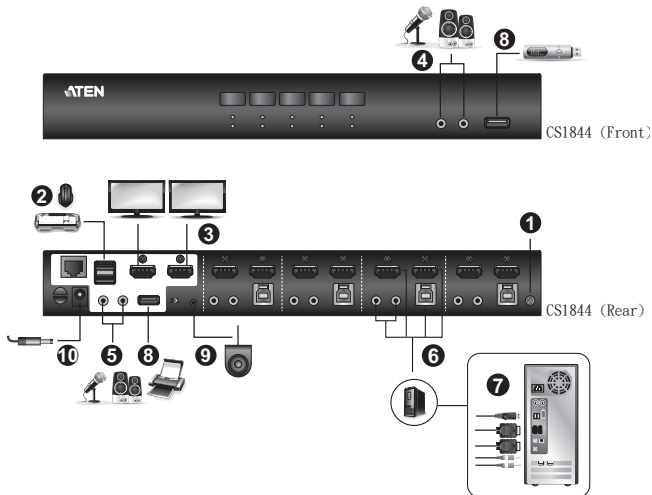
**Note:**

- ◆ By default, the switch links to the first computer that is powered on.
- ◆ The total cable length from the PC to monitor (including KVM) cannot exceed 6 meters.



- ♦ Choosing high quality cables helps to ensure that 4K UHD (3840 x 2160 @ 60 Hz) or 4K DCI (4096 x 2160 @ 60 Hz) resolutions can be reached.
  - ♦ It is highly recommended that the CS1842 / CS1844 is kept powered on at all times.
  - ♦ Make sure the computers and devices that the CS1842 / CS1844 connects to are also properly grounded.
-

## Installation Diagram



## Quad-Display (DCC Mode)

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To expand your installation to a Quad-Display display, you can use DCC Mode to connect two CS1842 / CS1844 units together, and use four displays in unison.

To set up DCC mode, power off all devices, refer to the installation diagram on the next page (the numbers in the diagram correspond to the steps, below), and do the following:

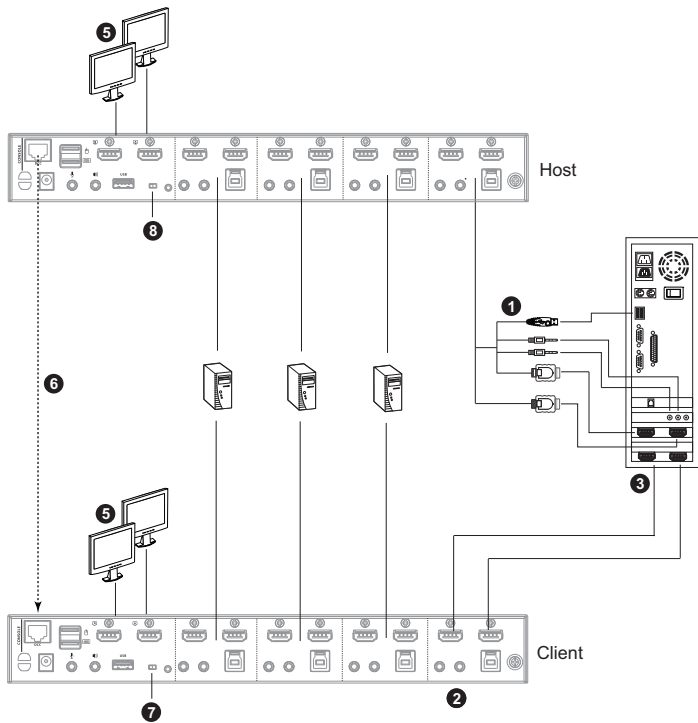
1. Connect all the computers to the *Host* as described in Hardware Setup, *Cable Connections*, page 11.
2. On the *Client*, using two HDMI cables, plug the HDMI connectors into the HDMI sockets A and B in the same KVM port section of the switch.
3. At the other end of the two HDMI cables, plug the monitor cable into the respective ports on the computer.
4. Repeat steps 2 and 3 for all computers.
5. Plug the console monitors into the HDMI console ports located on the *Host's* and *Client's* rear panel.
6. Use an RJ-45 cable to connect the DCC port of the *Host* to the DCC port of the *Client*.
7. On the rear of the *Client* set the DCC switch to **Secondary**.\*
8. On the rear of the *Host* set the DCC switch to **Primary**.
9. Power up the installation: plug in the power cord for the *Host* and *Client*, then power on both. After both units are up, power on the computer/video source devices.

---

**Note:** ♦ P means Primary, and S means Secondary.

- ♦ In DCC mode, the *Client's* front panel pushbuttons are disabled, and it takes all commands directly from the *Host*.
  - ♦ Setting the DCC switch to the *S* position will disable all front panel pushbuttons on that switch.
  - ♦ Make sure the computers and devices that the CS1842 / CS1844 connects to are also properly grounded.
-

## Quad-Display Installation



# Chapter 3

## Basic Operation

### Port Switching

---

There are five convenient methods to switch between the computers: Manual – by pressing the port selection pushbuttons on the front panel, Mouse – by clicking the scroll wheel of the mouse, Hotkey – by entering combinations on the keyboard, Remote Port Selector – by pressing the remote port selector button, and RS-232 Commands – by entering the correct command and control.

### Manual Switching

For manual port selection:

- ◆ To bring complete focus (**audio, KVM, and USB**) to a computer, *either*,  
a) press the port selection pushbutton that corresponds to that computer; *or*  
b) press the Mode pushbutton **once** (the Mode pushbutton's three icons light up) and then press the port selection pushbutton that corresponds to that computer. All three port icons light up.
- ◆ To bring only the **KVM** focus to a computer, press the Mode pushbutton **twice** (the Mode pushbutton's KVM icon lights up), and then press the port selection pushbutton that corresponds to that computer. The port's KVM icon (the port number) lights up.
- ◆ To bring only the **audio** focus to a computer, press the Mode pushbutton **three times** (the Mode pushbutton's audio icon lights up), and then press the port selection pushbutton that corresponds to that computer. The port's audio icon lights up.
- ◆ To bring only the **USB** focus to a computer, press the Mode pushbutton **four times** (the Mode pushbutton's USB icon lights up), and then press the port selection pushbutton that corresponds to that computer. The port's USB icon lights up.

---

**Note:** 1. Press and release either port selection pushbutton to stop Auto Scan Mode. The KVM focus goes to the computer attached to the corresponding port of the pushbutton you pressed.

2. If a port is not selected within five seconds of pushing the Mode pushbutton, the Mode pushbutton will power off.
-

## **Mouse Switching**

For mouse port selection: Double-click the scroll wheel of your USB mouse to cycle through the ports.

- 
- Note:** 1. Mouse switching is only supported by USB 3-key scroll wheel mice.
2. Mouse switching is disabled by default. See *Hotkey Setting Mode (HSM)*, page 26, to enable mouse switching.
  3. Mouse switching is only supported when Mouse Emulation is enabled.
- 

## **Hotkey Switching**

For Hotkey port selection: All port switches from the keyboard begin by pressing the Scroll Lock key twice. Regarding details of the Hotkey parameters, see *Hotkey Operation*, page 21.

## **Remote Port Selector Switching**

For Remote Port Selection: Press the remote port selector button to cycle through the ports. Make sure the remote port selector is plugged into the Remote Port Selector Jack.

## **RS-232 Commands**

For RS-232 port selection: Enter the correct command and control to switch port. Regarding details of the RS-232 command and control, see *Switch Port*, page 42.

## **Hot Plugging**

---

The CS1842 / CS1844 supports USB hot plugging – components can be removed and added back into the installation by unplugging their cables from the USB hub ports without the need to shut the unit down.

## Powering Off and Restarting

---

If it becomes necessary to power off the CS1842 / CS1844 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. Once the switch is powered up, power on the computers.

## Port ID Numbering

---

Each KVM port section on the CS1842 / CS1844 switch is assigned a port number (1 or for the CS1842; 1 to 4 for the CS1844). The port numbers are marked on the rear panel of the switch (see page 5 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, USB peripheral, and audio focus with the Hotkey port selection method (see page 23 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 explained below:

- ◆ Press a port selection pushbutton once to bring only the KVM focus to the computer attached to its corresponding port.
- ◆ Press a port selection pushbutton twice to bring the audio focus to the computer attached to its corresponding port.

---

**Note:** This function is disabled when the fast switching mode is enabled, see *Switching Mode Selection*, page 31.

---

- ◆ Press and hold a port selection pushbutton for more than 2 seconds to bring the KVM, audio and USB 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 25 for details.

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## Chapter 4

# Hotkey Operation

The CS1842 / CS1844 provides an extensive, easy-to-use, Hotkey function that makes it convenient to control and configure your KVM installation from the keyboard. Hotkeys provide asynchronous (independent) switching of the KVM, USB hub and audio focus. If you wish, you can give one computer the KVM console focus, another the USB hub focus and the other two the audio focus.

### 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 27, for details.

---

## Cycling Through the Ports

Hotkey	Action
[Scroll Lock] [Scroll Lock] [Enter]	Brings the <b>KVM</b> , <b>USB hub</b> , and <b>audio</b> focus from the port that currently has the KVM focus to the next port on the installation (1 to 2; 2 to 3; 3 to 4; 4 to 1).  <b>Example:</b> <ol style="list-style-type: none"> <li>1. Press <b>[Scroll Lock]</b> twice.</li> <li>2. Press <b>[Enter]</b>.</li> </ol>
[Scroll Lock] [Scroll Lock] [K] [Enter]	Brings only the <b>KVM</b> focus from the port that currently has it to the next port on the installation. The USB and audio focus remain where they are.  <b>Example:</b> <ol style="list-style-type: none"> <li>1. Press <b>[Scroll Lock]</b> twice.</li> <li>2. Press <b>[K]</b>.</li> <li>3. Press <b>[Enter]</b>.</li> </ol>
[Scroll Lock] [Scroll Lock] [U] [Enter]	Brings only the <b>USB hub</b> focus from the port that currently has it to the next port on the installation. The KVM and audio focus remain where they are.  <b>Example:</b> <ol style="list-style-type: none"> <li>1. Press <b>[Scroll Lock]</b> twice.</li> <li>2. Press <b>[U]</b>.</li> <li>3. Press <b>[Enter]</b>.</li> </ol>
[Scroll Lock] [Scroll Lock] [S] [Enter]	Brings only the <b>audio</b> focus from the port that currently has it to the next port on the installation. The KVM and USB hub focus remain where they are.  <b>Example:</b> <ol style="list-style-type: none"> <li>1. Press <b>[Scroll Lock]</b> twice.</li> <li>2. Press <b>[S]</b>.</li> <li>3. Press <b>[Enter]</b>.</li> </ol>

## Going Directly to a Port

Hotkey	Action
[Scroll Lock] [Scroll Lock] [n] [Enter]	Brings the <b>KVM</b> , <b>USB hub</b> , and <b>audio</b> focus to the computer attached to the port corresponding to the specified Port ID. <b>Example:</b> <ol style="list-style-type: none"> <li>1. Press <b>[Scroll Lock]</b> twice.</li> <li>2. Press <b>[2]</b>.</li> <li>3. Press <b>[Enter]</b>.</li> </ol>
[Scroll Lock] [Scroll Lock] [n] [K] [Enter]	Brings only the <b>KVM</b> focus to the computer attached to the specified port. The USB hub and audio focus remain where they are. <b>Example:</b> <ol style="list-style-type: none"> <li>1. Press <b>[Scroll Lock]</b> twice.</li> <li>2. Press <b>[2]</b>.</li> <li>3. Press <b>[K]</b>.</li> <li>4. Press <b>[Enter]</b>.</li> </ol>
[Scroll Lock] [Scroll Lock] [n] [U] [Enter]	Brings only the <b>USB hub</b> focus to the computer attached to the specified port. The KVM and audio focus remain where they are. <b>Example:</b> <ol style="list-style-type: none"> <li>1. Press <b>[Scroll Lock]</b> twice.</li> <li>2. Press <b>[2]</b>.</li> <li>3. Press <b>[U]</b>.</li> <li>4. Press <b>[Enter]</b>.</li> </ol>
[Scroll Lock] [Scroll Lock] [n] [S] [Enter]	Brings only the <b>audio</b> focus to the computer attached to the specified port. The KVM and USB hub focus remain where they are. <b>Example:</b> <ol style="list-style-type: none"> <li>1. Press <b>[Scroll Lock]</b> twice.</li> <li>2. Press <b>[2]</b>.</li> <li>3. Press <b>[S]</b>.</li> <li>4. Press <b>[Enter]</b>.</li> </ol>

Hotkey	Action
[Scroll Lock] [Scroll Lock] [n] [K] [U] [Enter]	<p>Brings the <b>KVM</b> and <b>USB hub</b> focus to the computer attached to the specified port. The audio focus remains where it is.</p> <p><b>Example:</b></p> <ol style="list-style-type: none"> <li>1. Press <b>[Scroll Lock]</b> twice.</li> <li>2. Press <b>[2]</b>.</li> <li>3. Press <b>[K]</b>, and then press <b>[U]</b>.</li> <li>4. Press <b>[Enter]</b>.</li> </ol>
[Scroll Lock] [Scroll Lock] [n] [K] [S] [Enter]	<p>Brings the <b>KVM</b> and <b>audio</b> focus to the computer attached to the specified port. The USB hub focus remains where it is.</p> <p><b>Example:</b></p> <ol style="list-style-type: none"> <li>1. Press <b>[Scroll Lock]</b> twice.</li> <li>2. Press <b>[2]</b>.</li> <li>3. Press <b>[K]</b>, and then press <b>[S]</b>.</li> <li>4. Press <b>[Enter]</b>.</li> </ol>
[Scroll Lock] [Scroll Lock] [n] [U] [S] [Enter]	<p>Brings the <b>USB hub</b> and <b>audio</b> focus to the computer attached to the specified port. The KVM focus remains where it is.</p> <p><b>Example:</b></p> <ol style="list-style-type: none"> <li>1. Press <b>[Scroll Lock]</b> twice.</li> <li>2. Press <b>[2]</b>.</li> <li>3. Press <b>[U]</b>, and then press <b>[S]</b>.</li> <li>4. Press <b>[Enter]</b>.</li> </ol>
[Scroll Lock] [Scroll Lock] [n] [K] [S] [U] [Enter]	<p>Brings the <b>KVM</b>, <b>USB hub</b> and <b>audio</b> focus to the computer attached to the specified port.</p> <p><b>Example:</b></p> <ol style="list-style-type: none"> <li>1. Press <b>[Scroll Lock]</b> twice.</li> <li>2. Press <b>[2]</b>.</li> <li>3. Press <b>[K]</b>, <b>[S]</b>, and then press <b>[U]</b>.</li> <li>4. Press <b>[Enter]</b>.</li> </ol> <p><b>Note:</b> This is the same action as [Scroll Lock] [Scroll Lock] [n] [Enter]</p>

**Note:** The **n** stands for the computer's Port ID number (1, 2, 3, or 4). See *Port ID Numbering*, page 19 for details. Replace the **n** with the appropriate Port ID when entering Hotkey combinations.

## Auto Scanning

The CS1842 / CS1844'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 <b>5 second intervals</b> . Five second intervals is the Default setting.
[Scroll Lock] [Scroll Lock] [A] [n] [Enter]	The KVM focus cycles from port to port at <b>n</b> second intervals.

- 
- Note:**
1. The **n** stands for the number of seconds that the CS1842 / CS1844 should dwell on a port before moving on to the next. Replace the **n** with a number between 1 and 99 when entering this Hotkey combination.
  2. 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. Although the video focus switches from port to port, the audio and USB focus do not switch. They stay at the port they were on when Auto Scanning started.
  4. To exit Auto Scan Mode, press the **[Esc]** key, or the **[Spacebar]**.
-

## Hotkey Setting Mode (HSM)

---

Hotkey Setting Mode (HSM) is used to set up your CS1842 / CS1844 switch configuration. All operations begin with invoking Hotkey Setting Mode.

### Invoking HSM

To invoke HSM do the following:

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

---

**Note:** There is an alternate key combination to invoke HSM. See below for details.

---

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 26).
2. Press and release **[H]**.

The HSM invocation keys become the **[Ctrl]** key (instead of **[Num Lock]**) and the **[F12]** key (instead of **[-]**).

---

**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**

An alternate way of activating port switching is by pressing the **[Ctrl]** key twice. To use the alternate port switching hotkeys, do the following:

1. Invoke HSM (see page 26).
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, go through the steps above.

---

## **Keyboard Operating Platform**

The CS1842 / CS1844'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 or Sun 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 or Sun keyboard. The procedure is as follows:

1. Bring the KVM focus to the port you want to set.
2. Invoke HSM (see page 26).
3. Press and release the appropriate Function key (see table below). After completing this procedure, you automatically exit HSM.

<b>Function Key</b>	<b>Operation</b>
[F1]	Sets the SPC mode so that it can work under special operating systems as a standard (104 key) keyboard.
[F2]	Enables Mac keyboard emulation, see page 35, for details.
[F3]	Enables Sun keyboard emulation, see page 36, for details.
[F10]	Enables Windows keyboard emulation.

## **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 26).
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 26).
2. Press and release **[F5]**.



## **Keyboard Language**

To change the keyboard language, do the following:

1. Invoke HSM (see page 26).
2. Press and release **[F6] [nn] [Enter]**.

---

**Note:** **nn** is a two-digit number that represents the keyboard language code (US English: 33; French: 08; Japanese: 15; German: 09).

---

## **Buzzer Control**

The buzzer can be turned on or off. To turn the buzzer on/off, do the following:

1. Invoke HSM (see page 26).
2. Press and release **[B]**.

## **Hotkey Port Switching**

To enable/disable hotkey port switching, do the following:

1. Invoke HSM (see page 26).
2. Press **[X] [Enter]**.

When disabled, port switching hotkeys **[Scroll Lock] [Scroll Lock]** (and the alternative **[Ctrl] [Ctrl]**) will not work.

## **Firmware Upgrade Mode**

To enter Firmware Upgrade Mode, do the following:

1. Invoke HSM (see page 26).
2. Key in: upgrade
3. Press **[Enter]**.

The front panel LEDs 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 CS1842 / CS1844 to its default Hotkey settings, do the following:

1. Invoke HSM (see page 26).
2. Press **[R]** **[Enter]**.

All Hotkey settings return to the factory default settings.

## **Power on Detection**

With Power on Detection, if the focus computer is powered off, the switch will automatically switch to the next powered-on computer. Power on Detection can be enabled or disabled. The default setting is enabled. To enable/disable Power on Detection, do the following:

1. Invoke HSM (see page 26).
2. Press **[E]**.

## **Alternative Manual Port Selection Settings**

To toggle between the default and the alternative front panel pushbutton manual port selection settings, do the following:

1. Invoke HSM (see page 26).
2. Press **[S]**.

See *Alternative Manual Port Selection Settings*, page 19, for full details of the alternative front panel pushbutton manual port selection settings.

## **Keyboard Emulation Control**

To enable/disable keyboard emulation, do the following:

1. Invoke HSM (see page 26).
2. Press **[N]**.

## **Mouse Emulation Control**

To enable/disable mouse emulation, do the following:

1. Invoke HSM (see page 26).
2. Press **[M]**.

## **Mouse Port Switching**

Mouse Port Switching allows you to switch ports using mouse wheel button (clicked twice). For Mouse Port Switching to work, Mouse Emulation must be enabled. To enable/disable mouse port switching, do the following:

1. Invoke HSM (see page 26).
2. Press **[W]**.

## **N-Key Rollover Keyboard Supporting Function**

To enable/disable N-key rollover keyboard supporting function, do the following:

1. Invoke HSM (see page 26).
2. Press **[K] [Enter]**.

## **Switching Mode Selection**

The Switching Mode Selection allows you to select an appropriate switching mode between Normal Switching Mode and Fast Switching Mode.

- 
- Note:** 1. This hotkey is only supported by CS1842 / CS1844 using firmware v. 1.1.101 or later.
2. The function (press a port selection pushbutton twice to bring the audio focus to the computer attached to its corresponding port) will be disabled when the fast switching mode is enabled, see *Alternative Manual Port Selection Settings*, page 19.
- 

1. Invoke HSM (see page 26).
2. Press **[P]**.
3. Press and release the appropriate Function key (see table below).

Function Key	Operation
1	Sets the KVM to Normal Switching Mode (Default).
2	Sets the KVM to Fast Switching Mode.

---

4. Press **[Enter]**. After completing this procedure, you automatically exit HSM.

---

**Note:** The configuration of Fast Switching Mode might not work with some monitors. If your video output does not display successfully or work properly, please use the default Normal Switching Mode instead.

---

## **HSM Summary Table**

After invoking HSM (see page 26), key in one of the following keys to perform the corresponding function:

<b>Key</b>	<b>Function</b>
[F1]	Sets the keyboard and mouse to SPC mode so that it can work under special operating systems as a standard (104 key) keyboard and mouse.
[F2]	Enables Mac keyboard emulation.
[F3]	Enables Sun keyboard emulation.
[F4]	Print the switch's current settings via a text editor or word processor.
[F5]	Performs a USB keyboard and mouse reset.
[F6] [n][n] [Enter]	Sets the keyboard language layout. Where nn is a two digit number that represents the keyboard language code (US English: 33, French: 08, German: 09, Japanese: 15).
[F10]	Enables Windows keyboard emulation.
[B]	Enables/disables the buzzer.
[E]	Turns the Power-on-Detection function on/off.
[H]	Toggles between the default and alternate HSM invocation keys.
[K] [Enter]	Enables/disables N-key rollover keyboard supporting function.
[M]	Enables/disables mouse emulation.
[N]	Enables/disables keyboard emulation.
[R] [Enter]	Resets the Hotkey settings to their default status.
[S]	Toggles between the default and alternate manual port selection pushbutton settings.
[T]	Toggles between the default and alternate Port Switching keys.
[u] [p] [g] [r] [a] [d] [e] [Enter]	Invokes Firmware Upgrade Mode.
[W]	Enables/disables Mouse Port Switching. When enabled, click the mouse wheel twice to switch ports. Mouse emulation must be enabled.

Key	Function
[P] [n] [Enter]	<p>Sets the KVM switching mode.</p> <ul style="list-style-type: none"><li>◆ n = 1, sets the KVM to Normal Switching Mode.</li><li>◆ n = 2, sets the KVM to Fast Switching Mode.</li></ul> <p><b>Note:</b></p> <ol style="list-style-type: none"><li>1. This hotkey is only supported by CS1842 / CS1844 using firmware v. 1.1.101 or later.</li><li>2. The function (press a port selection pushbutton twice to bring the audio focus to the computer attached to its corresponding port) will be disabled when the fast switching mode is enabled, see <i>Alternative Manual Port Selection Settings</i>, page 19.</li></ol>
[X] [Enter]	Enables/disables Hotkey Port Switching.
[Esc] or [Spacebar]	Quits setting mode.

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# 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

## RS-232 Operation

### Overview

---

The CS1842 / CS1844's built-in bi-directional RS-232 serial interface allows system control through a high-end controller or PC. RS-232 serial operations in a CS1842 / CS1844 installation are managed via HyperTerminal sessions on systems that are running Windows. In order to use this feature to send commands to the CS1842 / CS1844, you must first download and install a HyperTerminal application.

### Setup

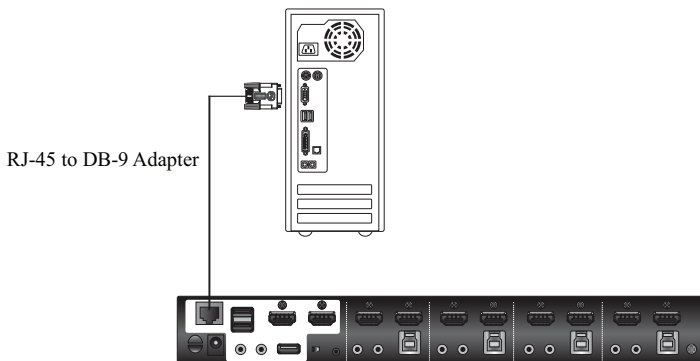
---

Install a HyperTerminal application on a computer that is not part of the installation, which will be used to control the switch via the RS-232 connection. HyperTerminal applications can be download from the Internet, and many operating systems are embedded with HyperTerminal applications.

### Hardware Connection

Use a RJ-45 to DB-9 serial adapter to connect a computer's serial port to the DCC Port on the CS1842 / CS1844, as shown below:

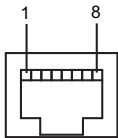
- 
- Note:** 1. Slide the DCC Switch to the S position (Secondary) to allow the KVM switch to receive RS-232 commands.
2. The unit used in the diagram below is CS1844, the procedure for connecting CS1842 is identical with fewer KVM ports.
-



## **RS-232 Pin Assignments**

Pin assignments for the CS1842 / CS1844's rear DCC Port that is used for connecting to a serial terminal are given in the table, below:

Pin	Assignment
1	N/A
2	N/A
3	TXD: Transmit Data
4	N/A
5	GND: Signal Ground
6	RXD: Receive Data
7	N/A
8	N/A

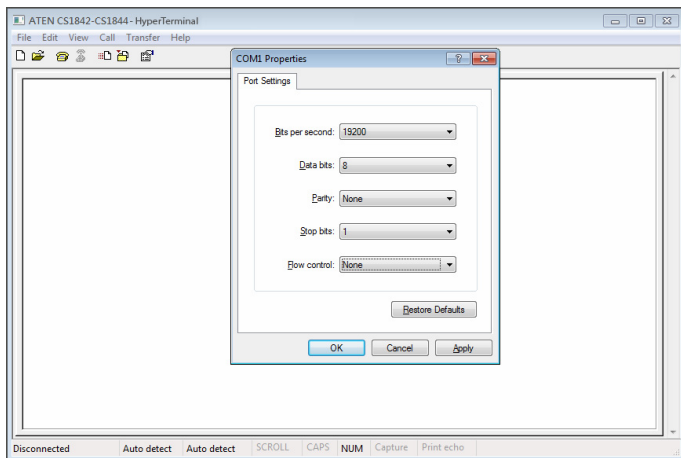


**RJ-45 Female**

## Console Login - HyperTerminal

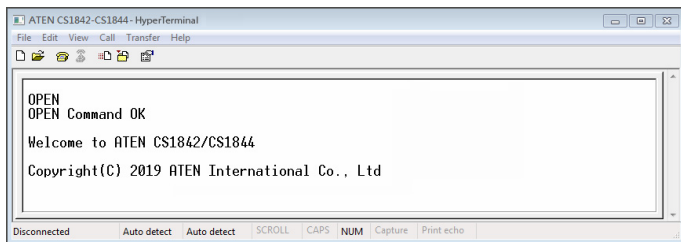
Once a physical connection from the computer to the CS1842 / CS1844 has been made, you can establish a HyperTerminal session using the instructions below.

1. Open the *HyperTerminal* application, and configure the port settings for COM1 port, then click **OK**.



Bits per Second: **19200**, Data Bits: **8**, Parity: **None**, Stop bits: **1**, Flow Control: **None**.

2. After configuring the port settings you must enable serial control on the switch by typing the command: **Open + [Enter]**.



## RS-232 Commands

---

After you login via HyperTerminal (see *Console Login - HyperTerminal*) use the instructions below to send RS-232 commands to control the switch from the computer.

When RS-232 control is enabled via the **Open + [Enter]** command, the CS1842 / CS1844's front panel pushbuttons, mouse switching, hotkeys, and remote port selector will be disabled.

### **Verification**

After entering a command, a verification message appears, as shown below, at the end of the command line, as follows:

<b>Response Message</b>	<b>Description</b>
Command OK	Command or parameter is correct.
Command incorrect	Command or parameter is incorrect.

With all commands in the sections that follow:

- ◆ Each command string can be separated with a space.
- ◆ The [Enter] command can be replaced with the ASCII code: 0x0D0A

## Open / Close

The *Open* and *Close* commands allows you to start and end the link between the computer sending RS-232 commands and the CS1842 / CS1844. When the link is open, the CS1842 / CS1844 only accepts RS-232 commands and will not respond to front panel pushbuttons, mouse switching, hotkeys, and remote port selector. The link starts with the *open* command and ends with the *close* command or after 2 minutes if no command is sent. The default value is close.

---

**Note:** To regain full control of front panel pushbuttons, mouse switching, hotkeys, and remote port selector, close the RS-232 link command and slide the DCC Switch to the P position (Primary).

---

Use the **Formula** - to set **Parameters** - to create a **Command**.

### **Formulas:**

Command + [Enter]

### **Parameters:**

Command	Description
open	Open RS-232 Link command
close	Close RS-232 Link command
Enter	Description
Enter	Enter and send out command

## **Open/Close RS-232 Link Command**

The available formulas for the Open/Close RS-232 Link commands are as follows:

1. Command + [Enter]

For example, to open the RS-232 link between the computer and CS1842 / CS1844, type the following:

**open [Enter]**

2. Command + [Enter]

For example, to close the RS-232 link between the computer and CS1842 / CS1844, type the following:

**close [Enter]**

## **Switch Port**

The *Switch Port* command allows you to switch ports. The default port is 01.

Use the **Formula** - to set **Parameters** - to create a **Command**.

### **Formula:**

Command + Control + [Enter]

### **Parameters:**

<b>Command</b>	<b>Description</b>
sw	Switch Port Command

<b>Control</b>	<b>Description</b>
ixx	Input Port Number x= 01~02 (CS1842); 01~04 (CS1844)

<b>Enter</b>	<b>Description</b>
Enter	Enter and send out command

## **Switch Port Command**

Some available formula for the Switch Port commands is as follows:

Command + Control + [Enter]

For example, to switch to port 2, type the following:

**sw i02 [Enter]**

---

**Note:** The **Control** command can be skipped and the default value will be used.

---

## **Switch Port (KVM Focus only)**

The switch port command allows you to switch the KVM focus among computers connected to the CS1842 / CS1844's ports.

---

**Note:** This command is only supported by CS1842 / CS1844 using firmware v. 1.1.101 or later.

---

Use the **Formula** - to set **Parameters** - to create a **Command**.

### **Formula:**

Command + Control + [Enter]

### **Parameters:**

Command	Description
sw	Switch Port Command
Control	Description
ixx	Input Port Number x= 01~02 (CS1842); 01~04 (CS1844)
kvm	Switch KVM focus only
Enter	Description
Enter	Enter and send out command

## **Switch Port (KVM Focus only) Command**

Some available formula for the Switch Port (KVM Focus only) command is as follows:

Command + Control + [Enter]

For example, to switch the KVM focus to port 2, type the following:

**sw i02 kvm [Enter]**

---

**Note:** The **Control** command string can be skipped, and the default value will be used.

---

## **Switch Port (USB Peripherals Focus only)**

The switch port command allows you to switch the USB peripherals focus among computers connected to the CS1842 / CS1844's ports.

---

**Note:** This command is only supported by CS1842 / CS1844 using firmware v. 1.1.101 or later.

---

Use the **Formula** - to set **Parameters** - to create a **Command**.

### **Formula:**

Command + Control + [Enter]

### **Parameters:**

<b>Command</b>	<b>Description</b>
sw	Switch Port Command

<b>Control</b>	<b>Description</b>
ixx	Input Port Number x= 01~02 (CS1842); 01~04 (CS1844)
usb	Switch USB peripherals focus only

<b>Enter</b>	<b>Description</b>
Enter	Enter and send out command

## **Switch Port (USB Peripherals Focus only) Command**

Some available formula for the Switch Port (USB Peripherals Focus only) command is as follows:

Command + Control + [Enter]

For example, to switch the USB peripherals focus to port 2, type the following:

**sw i02 usb [Enter]**

---

**Note:** The **Control** command string can be skipped, and the default value will be used.

---



## **Switch Port (Audio Focus only)**

The switch port command allows you to switch the audio focus among computers connected to the CS1842 / CS1844's ports.

---

**Note:** This command is only supported by CS1842 / CS1844 using firmware v. 1.1.101 or later.

---

Use the **Formula** - to set **Parameters** - to create a **Command**.

### **Formula:**

Command + Control + [Enter]

### **Parameters:**

Command	Description
sw	Switch Port Command

Control	Description
ixx	Input Port Number x= 01~02 (CS1842); 01~04 (CS1844)
audio	Switch audio focus only

Enter	Description
Enter	Enter and send out command

## **Switch Port (Audio Focus only) Commands**

Some available formula for the Switch Port (Audio Focus only) command is as follows:

Command + Control + [Enter]

For example, to switch the audio focus to port 2, type the following:

**sw i02 audio [Enter]**

---

**Note:** The **Control** command string can be skipped, and the default value will be used.

---

## **Set Baud Rate**

The *Set Baud Rate* command allows you to configure the baud rate setting for the serial port connection. The default baud rate is 19200.

Use the **Formula** - to set **Parameters** - to create a **Command**.

### **Formula:**

Command + Control + [Enter]

### **Parameters:**

<b>Command</b>	<b>Description</b>
baud	Baud Rate Command

<b>Control</b>	<b>Description</b>
19200	Set baud rate to 19200 (Default)
38400	Set baud rate to 38400
9600	Set baud rate to 9600

<b>Enter</b>	<b>Description</b>
Enter	Enter and send out command

## **Set Baud Rate Commands**

Some available formula for the Set Baud Rate command is as follows:

Command + Control + [Enter]

For example, to set the baud rate to 19200, type the following:

**baud 19200 [Enter]**

## **Keyboard Language Layout**

The *Keyboard Language Layout* command allows you to change the keyboard language layout. The default language is English.

Use the **Formula** - to set **Parameters** - to create a **Command**.

### **Formula:**

Command + Control + [Enter]

### **Parameters:**

<b>Command</b>	<b>Description</b>
layout	Keyboard Language Layout Command

<b>Control</b>	<b>Description</b>
en	Change the keyboard language layout to English
fr	Change the keyboard language layout to French
jp	Change the keyboard language layout to Japanese
ge	Change the keyboard language layout to German

<b>Enter</b>	<b>Description</b>
Enter	Enter and send out command

## **Keyboard Language Layout Commands**

Some available formulas for Keyboard Language Layout commands are as follows:

1. Command + Control + [Enter]

For example, to change the keyboard language layout to Japanese, type the following:

**layout jp [Enter]**

2. Command + Control + [Enter]

For example, to change the keyboard language layout to French, type the following:

**layout fr [Enter]**

## Hotkey Setting

The *Hotkey Setting* command allows you to change the hotkey used to invoke the HSM (Hotkey Setting Mode). The default hotkey is [Num Lock] + [-].

Use the **Formula** - to set **Parameters** - to create a **Command**.

### Formulas:

Command + Control + [Enter]

### Parameters:

Command	Description
hotkey	Hotkey Setting Command
Control	Description
num	Change the HSM invoke key to: [Num Lock] + [-]
f12	Change the HSM invoke key to: [Ctrl] + [F12]
Enter	Description
Enter	Enter and send out command

## Hotkey Setting Commands

Some available formulas for Hotkey Setting commands are as follows:

1. Command + Control + [Enter]

For example, to change the HSM invoke key to [Num Lock] + [-], type the following:

**hotkey num [Enter]**

2. Command + Control + [Enter]

For example, to change the HSM invoke key to [Ctrl] + [F12], type the following:

**hotkey f12 [Enter]**

## Hotkey Switching

The *Hotkey Switching* command allows you to change the hotkey used for switching. The default hotkey is [Scroll][Scroll].

Use the **Formula** - to set **Parameters** - to create a **Command**.

### Formulas:

Command + Control + [Enter]

### Parameters:

Command	Description
switch	Hotkey Switching Command

Control	Description
scroll	Change hotkey switching key to: [Scroll] [Scroll]
ctrl	Change hotkey switching key to: [Ctrl] [Ctrl]

Enter	Description
Enter	Enter and send out command

## Hotkey Switching Commands

Some available formulas for Hotkey Switching commands are as follows:

1. Command + Control + [Enter]

For example, to change the hotkey switching mode to [Scroll] [Scroll], type the following:

**switch scroll [Enter]**

2. Command + Control + [Enter]

For example, to change the hotkey switching mode to [Ctrl] [Ctrl], type the following:

**switch ctrl [Enter]**

## **USB Reset**

The *USB Reset* command allows you to reset the USB connection. The default USB reset setting is off.

Use the **Formula** - to set **Parameters** - to create a **Command**.

### **Formulas:**

Command + Control + [Enter]

### **Parameters:**

<b>Command</b>	<b>Description</b>
usbreset	USB Reset Command

<b>Control</b>	<b>Description</b>
on	Enable USB reset connection

<b>Enter</b>	<b>Description</b>
Enter	Enter and send out command

## **USB Reset Command**

The available formula for the USB Reset command is as follows:

Command + Control + [Enter]

For example, to reset the USB connection, type the following:

**usbreset on [Enter]**

## **Restore Default Settings**

The *Restore Default Settings* command allows you to reset all of the settings back to the default. The default setting is off.

Use the **Formula** - to set **Parameters** - to create a **Command**.

### **Formulas:**

Command + Control + [Enter]

### **Parameters:**

<b>Command</b>	<b>Description</b>
reset	Restore Default Settings Command
<b>Control</b>	<b>Description</b>
on	Enable restore default values
<b>Enter</b>	<b>Description</b>
Enter	Enter and send out command

## **Restore Default Value Command**

The available formula for the Restore Default Settings command is as follows:

Command + Control + [Enter]

For example, to restore all CS1842 / CS1844 settings back to the default, type the following:

**reset on [Enter]**

## **Firmware Upgrade**

The *Firmware Upgrade* command allows you to enable the firmware upgrade mode. The default setting is off.

Use the **Formula** - to set **Parameters** - to create a **Command**.

### **Formulas:**

Command + Control+ [Enter]

### **Parameters:**

<b>Command</b>	<b>Description</b>
upgrade	Firmware Upgrade Command
<b>Control</b>	<b>Description</b>
on	Enable firmware upgrade mode
<b>Enter</b>	<b>Description</b>
Enter	Enter and send out command

## **Firmware Upgrade Command**

The available formula for the Firmware Upgrade command is as follows:

Command + Control + [Enter]

For example, to enable firmware upgrade mode, type the following:

**upgrade on [Enter]**



## **KVM Status**

The *KVM Status* command allows you to display read-only information about the switches' current configuration status. The default setting is off.

Use the **Formula** - to set **Parameters** - to create a **Command**.

### **Formulas:**

Command + Control + [Enter]

### **Parameters:**

<b>Command</b>	<b>Description</b>
status	KVM Status Command
<b>Control</b>	<b>Description</b>
on	Enable KVM status
<b>Enter</b>	<b>Description</b>
Enter	Enter and send out command

## **KVM Status Command**

The available formula for the KVM Status command is as follows:

Command + Control + [Enter]

For example, to display the CS1842 / CS1844's configuration status, type the following:

**status on [Enter]**

A message similar to the one below will then appear:

hotkey: [numlock]+[-] / [scrolllock],[scrolllock]

os setting: pc

keyboard emulation: enabled/disabled

keyboard layout: English

mouse emulation: enabled/disabled

monitor re-detection: enabled/disabled

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## Chapter 7

# The Firmware Upgrade Utility

The Windows-based Firmware Upgrade Utility (FWUpgrade.exe) provides a smooth, automated process for upgrading the CS1842 / CS1844's firmware.

The Utility comes as part of a Firmware Upgrade Package that is specific for each device. New firmware upgrade packages are posted on our website as new firmware revisions become available. Check the website regularly to find the latest packages and information relating to them:

<http://www.aten.com/global/en/support-and-downloads/downloads/>

### Before You Begin

---

To prepare for the firmware upgrade, do the following:

1. From a computer that is not part of your KVM installation, go to the ATEN Support & Download site and choose the model name that relates to your device (CS1842 / CS1844) 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 CS1842 / CS1844 from your KVM installation and power it off. Connect the USB cable's Type A USB connector to a USB port on your computer.
4. At the other end of the USB cable, connect the USB Type B connector to the Type B USB port in the Port 1 KVM section.

**Note:** The USB cable's USB Type B connector can be connected to any KVM port section, but the Port Selection pushbutton in Step 5, below, must be Port 1.

5. Press and hold the Mode pushbutton. While holding the button, connect the power adapter to the CS1842 / CS1844 to enter Firmware Upgrade Mode. The front panel LEDs flash together to indicate Firmware Upgrade Mode is in effect.

---

**Note:** The USB mouse becomes not functional when the firmware upgrade mode is in effect.

---

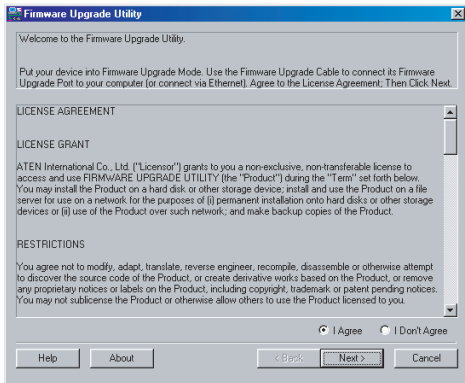
## Starting the Upgrade

---

To upgrade your 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:



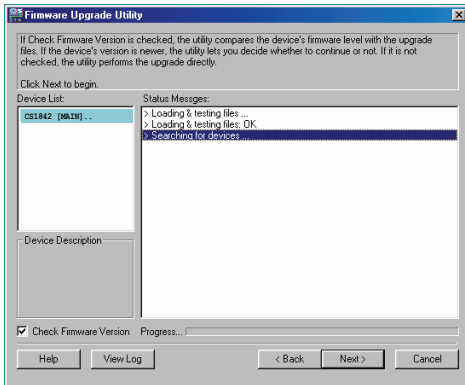
---

**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.

---

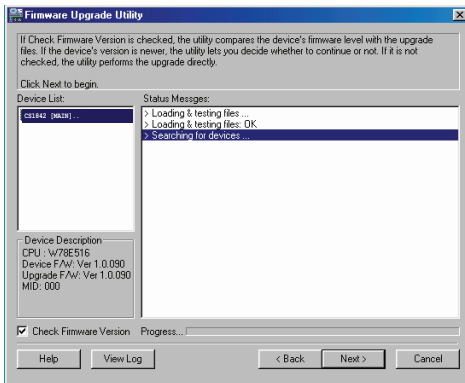
2. Read the License Agreement (enable the *I Agree* radio button).

3. Click **Next** to continue. The Firmware Upgrade Utility main screen appears:

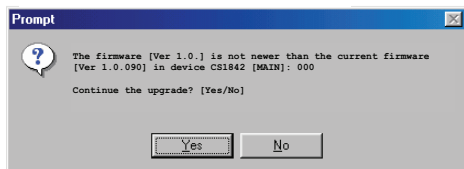


The Utility inspects your installation. All the devices capable of being upgraded by the package are listed in the *Device List* panel.

4. As you select a device in the list, its description appears in the Device Description panel.



5. 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 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.

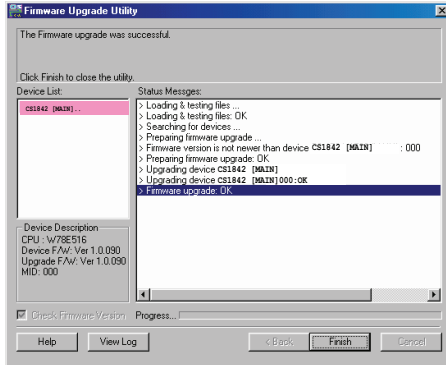
As the Upgrade proceeds, status messages appear in the Status Messages panel, and the progress toward completion is shown on the *Progress* bar.

---

## 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.

After a successful completion, the switches exit Firmware Upgrade Mode, and reset themselves.

If you have a DCC mode installation be sure to reconnect the cable connected to the DCC port, and set the DCC switch back to *Client* on the appropriate switch (see *Quad-Display (DCC Mode)*, page 15).

## 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. Power off the CS1842 / CS1844 by removing the power jack.
2. Invoke Firmware Upgrade Mode by holding down the *Mode Selection* pushbutton on the front panel (see *mode selection pushbutton*, page 5 for CS1842, and see page 5 for CS1844) and power on the CS1842 / CS1844. The orange LEDs flash together.
3. Do the firmware upgrade procedure again.



## Safety Instructions

---

- ◆ Read all of these instructions. Save them for future reference.
- ◆ This device is for indoor use only.
- ◆ 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.
- ◆ Avoid circuit overloads. Before connecting equipment to a circuit, know the power supply's limit and never exceed it. Always review the electrical specifications of a circuit to ensure that you are not creating a dangerous condition or that one doesn't already exist. Circuit overloads can cause a fire and destroy equipment.
- ◆ 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.
- ◆ **Caution:** Slide/rail (LCD KVM) mounted equipment is not to be used as a shelf or a work space.



## Troubleshooting

### Overview

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

In addition, updating the product's firmware may solve problems that have been discovered and resolved since the prior version was released. If your product is not running the latest firmware version, we strongly recommend that you upgrade. See Chapter 6, *The Firmware Upgrade Utility*, for upgrade details.

Symptom	Possible Cause	Action
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.
	CS1842 / CS1844 needs to be reset.	Power off all devices on the installation (see safety note, top of page 11); power off the CS1842 / CS1844; wait five seconds; then power up
USB devices not responding.	USB ports need to reset.	Unplug the device's USB cable from the USB port on the CS1842 / CS1844's rear panel, then plug it back in.
	PC or OS does not support USB 2.0/3.0.	The CS1842 / CS1844 has a built-in USB 3.0 hub, so will not support PCs or OS that do not support USB 2.0/3.0.  For an OS that does not support USB 2.0, keyboard and mouse functions can be reset using the [F1] Hotkey function. See page 32.
Device not recognized (Windows).	Windows timing problem.	<ol style="list-style-type: none"> <li>1. Unplug the KVM cable from the computer's USB port.</li> <li>2. Go into Windows' <i>System Settings</i> and remove the <i>Unknown Device</i> entry.</li> <li>3. Plug the KVM cable back in. Windows will now recognize the device.</li> </ol>
Front Panel Pushbuttons not responding when pushed.	The daisy chain switch located on the back of the CS1842 / CS1844 is set to Client.	Make sure the daisy chain switch located on the rear of the switch is set to <i>Host</i> .  You should only set the daisy chain switch to <i>Client</i> when connecting two units in a Hex-Display installation, see <i>Quad-Display (DCC Mode)</i> , page 15.

---

Symptom	Possible Cause	Action
The Front Panel Pushbutton Combo key doesn't work after its set.	Some Hotkeys are not supported as front panel pushbutton combo keys.	The <b>[X] [Enter]</b> , <b>[R] [Enter]</b> , and <b>[upgrade] [Enter]</b> Hotkeys can not be set as a front panel pushbutton combo key. Select a different Hotkey to use.

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## Technical Support

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Technical support is available both by email and online (with a browser over the web):

### International

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

### North America

Email Support		support@aten-usa.com
Online Technical Support	Troubleshooting Documentation Software Updates	<a href="http://www.aten-usa.com/support">http://www.aten-usa.com/support</a>
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		CS1842	CS1844	
Computer Connections	Direct	2	4	
Port Selection		Pushbutton, Hotkey, RS-232 Commands, Remote Port Selector, Mouse*		
Connectors	Console Ports	Keyboard	1 x USB Type A Female	
		Mouse	1 x USB Type A Female	
		Video	2 x HDMI Female (Black)	
		Speakers	2 x 3.5mm Audio Jack Female (Green; 1 x front, 1 x rear)	
		Microphone	2 x 3.5mm Audio Jack Female (Pink; 1 x front, 1 x rear)	
	KVM Ports	KB / Mouse	2 x USB 3.1 Gen 1 Type B Female (Blue)	4 x USB 3.1 Gen 1 Type B Female (Blue)
		Video	4 x HDMI Female (Black)	8 x HDMI Female (Black)
		Speakers	2 x 3.5mm Audio Jack Female (Green)	4 x 3.5mm Audio Jack Female (Green)
		Microphone	2 x 3.5mm Audio Jack Female (Pink)	4 x 3.5mm Audio Jack Female (Pink)
	Daisy Chain Port		1 x RJ-45 Female	
	Remote Port Selector		1 x 2.5mm Audio Jack Female	
	Power		1 x DC Jack	
USB Hub		2 x USB 3.1 Gen 1 Type A Female (Blue; 1 x front, 1 x rear)		
LED	On Line / Selected	3 (Orange)	5 (Orange)	
	Audio	3 (Green)	5 (Green)	
	USB Link	3 (Green)	5 (Green)	
Switches	Selected	3 x Pushbutton	5 x Pushbutton	
	Station Selection	1 x Slide switch	1 x Slide switch	
Emulation	KB / Mouse	USB		
Video		4096 x 2160 @ 60 Hz		
Scan Interval		1–99 secs. (default: 5 seconds)		
Power Consumption		DC12V:3.17W:57BTU	DC12V:4.42W:63BTU	
Environment	Operating Temp.	0–40°C		
	Storage Temp.	-20–60°C		
	Humidity	0–80% RH, Non-condensing		
Physical Properties	Housing	Metal		
	Weight	1.60 kg (3.52 lb)	1.57 kg (3.46 lb)	
	Dimensions (L x W x H)	33.50 x 16.05 x 4.40 cm (13.19 x 6.32 x 1.73 in)	33.50 x 16.05 x 4.40 cm (13.19 x 6.32 x 1.73 in)	

\* Port switching only works with 3-key USB mouse wheel in emulation mode.

## Optional Rack Mounting

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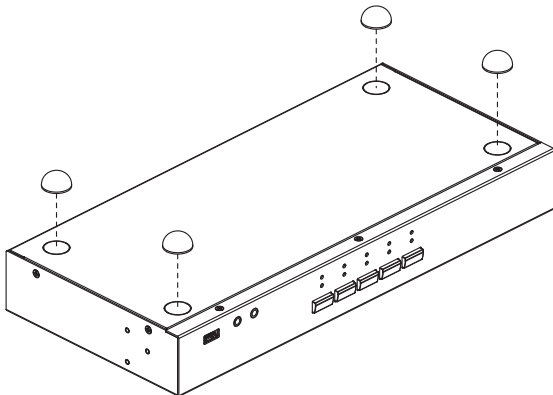
### Installation Kit Mounting

2X-045G rack mounting option is available for CS1842 / CS1844. To install the 2X-045G rack mounting kit, do the following:

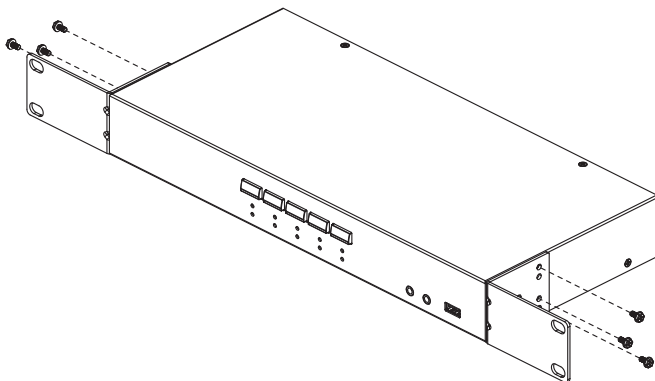
**Note:** The 2X-045G is sold separately. Contact your ATEN dealer for product information.

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1. Remove the rubber feet from the bottom of the unit.

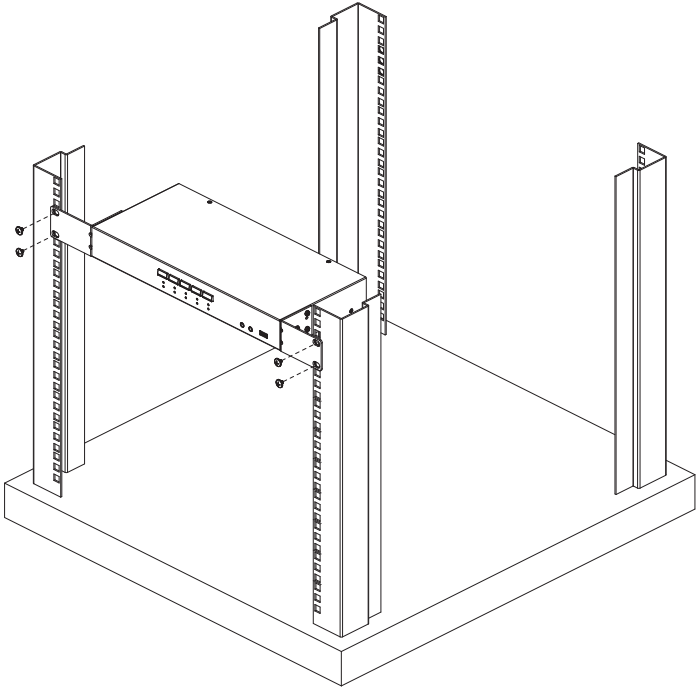


2. Use the M3 X 8 Phillips hex cap screws supplied with the rack mounting kit to screw the rack mounting brackets in the side near the front of the unit.





3. Place the KVM switch 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.



## Hotkey Default Settings

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The hotkey factory default settings are as follows:

Setting	Default
Port Switching	[Scroll Lock] [Scroll Lock]
Invoking HSM	[Number Lock] [-]
Keyboard Emulation	Enabled
Mouse Emulation	Enabled
Auto Scan Interval	5 Seconds
Mouse Wheel Switching	Disabled
Power On Detection	Enabled
Keyboard Operating Platform	Windows
Keyboard Language Layout	English
Beeper	Enabled
Firmware Upgrade Mode	Disabled
Port Switching Keys	Enabled
Switching Mode Selection	Normal Switching Mode
N-Key Rollover Keyboard	Enabled

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## Limited Warranty

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

### **What is covered by the Limited Hardware Warranty**

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

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

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