DisplayPort KVMP™ Switch

CS1912 / CS1914

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

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

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

CE Warning: This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.

KCC Statement

유선 제품용 / A 급 기기 (업무용 방송 통신 기기)

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

RoHS

This product is RoHS compliant.

User Information

Online Registration

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

International	http://eservice.aten.com

Telephone Support

For telephone support, call this number:

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

Customer Support

For contact information, see *Technical Support*, page 37.

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 CS1912 / CS1914 package consists of:

- 1 CS1912 / CS1914 USB 3.0 DisplayPort KVMP™ Switch
- 2/4 DisplayPort Cables (CS1912/CS1914)
- 2/4 USB 3.0 Cables (CS1912/CS1914)
- 2/4 Audio Cables (CS1912/CS1914)
- 1 Power Adapter
- 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 CS1912 / CS1914 since this manual was printed. 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 CS1912 / CS1914 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 CS1912 / CS1914. 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 CS1912 / CS1914.

Chapter 4, *Keyboard Emulation***,** provides tables that list the PC to Mac and PC to Sun keyboard emulation mappings.

Chapter 5, *Hotkey Operation***,** details all of the concepts and procedures involved in the Hotkey operation of your CS1912 / CS1914 installation.

Chapter 6, *The Firmware Upgrade Utility***,** explains how to upgrade the CS1912 / CS1914's firmware with the latest available versions.

An Appendix, provides specifications and other technical information regarding the CS1912 / CS1914.

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

Chapter 1
Introduction

Overview

The CS1912 / CS1914 2/4-Port USB 3.0 DisplayPort KVMP™ Switch takes a giant leap forward in KVM switch functionality by combining a KVM switch with a DisplayPort video interface, 2-port USB 3.1 Gen 1 hub and 2.1 channel audio support for rich bass in surround sound. DisplayPort technology provides a 3840 x 2160 @ 30 Hz resolution that displays high-definition images while pumping out premium sound for music, movies and games.

As a KVM switch, the CS1912 / CS1914 allows users to access two or four DisplayPort computers from a single USB keyboard, USB mouse and monitor console. In addition to the front panel pushbuttons and hotkeys, the CS1912 / CS1914 offers the latest mouse port-switching functionality which allows a double-click of the mouse's scroll-wheel to change ports. A Power On Detection feature also ensures that if one computer is powered off, the CS1912 / CS1914's will automatically switch ports to the next powered-on computer.

With a built-in USB 3.1 Gen 1 hub, the CS1912 / CS1914 SuperSpeed 5 Gbps transfer rates to all connected 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 high video resolutions, a next generation USB 3.1 Gen 1 hub and enhanced, user-friendly operations, the CS1912 / CS1914 provides the latest innovations in desktop KVM switching technology.

Features

- 2/4-port DisplayPort KVMP Switch with USB 3.1 Gen 1 hub and 2.1 surround sound audio
- One USB console controls 2/4 computers and 2 USB peripherals
- Computer selection via front panel pushbuttons, hotkeys and mouse*
- Independent switching of KVM, USB and Audio focus
- Superior video quality – up to 3840 x 2160 @ 30 Hz resolutions
- 2-port USB 3.1 Gen 1 hub with SuperSpeed 5 Gbps transfer rates
- DisplayPort 1.1 compliant, HDCP compliant
- Supports HD audio through DisplayPort**
- Full bass response for high-quality 2.1 channel surround sound systems
- Power On Detection – if a computer is powered off the CS1912 / CS1914 automatically switches to the next powered-on computer
- Dual-Mode DisplayPort technology (DP++) supports passive HDMI and DVI adapters***
- Hot pluggable – add or remove computers without powering down the switch
- Mouse emulation/bypass feature supports most mouse drivers and multifunction mice
- Multi-platform support – Windows 2000, Windows XP, Windows Vista, Windows 7/8 and higher, Mac, and Linux
- Multilingual keyboard mapping supports English, Japanese, French and German keyboards
- Mac keyboard support and emulation****
- Auto Scan Mode for monitoring all computers
- Firmware upgradeable

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

2. HD audio through DisplayPort cannot be switched independently.

3. Dual-Mode DisplayPort technology (DP++) does not require an active adapter for most single display setups. Active DisplayPort adapters are recommended if you are unsure of the video source's DP++ compatibility.

4. PC keyboard combinations emulate Mac keyboards. Mac keyboards only work with their own operating system.

Requirements

Console

- A DisplayPort compatible monitor capable of the highest possible resolution
- A USB mouse
- A USB keyboard
- Speakers

Computers

The following equipment must be available on each computer:

- A DisplayPort port
- Type A USB port
- Audio port for sound

Cables

- Two DisplayPort cables, two USB 3.0 cables and two 3.5 mm Audio cables included with the CS1912 package.
- Four DisplayPort cables, four USB 3.0 cables and four 3.5 mm Audio cables included with the CS1914 package.

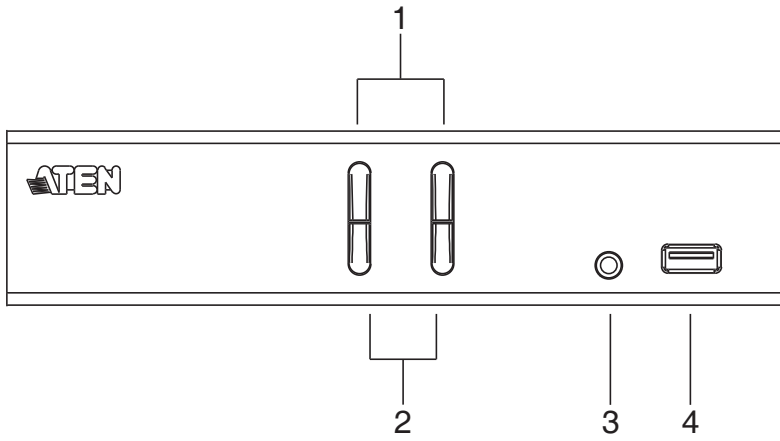
Note: The quality of the display is affected by the quality and length of the cables. If you need additional cable sets, please contact your dealer to purchase ATEN approved cables.

Operating Systems

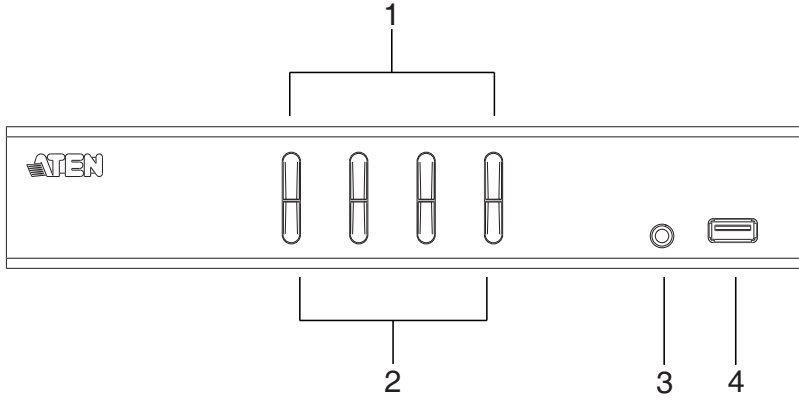
OS		Version
Windows		2000 / XP / Vista / 7 / 8 / 8.1 / 10
Linux	RedHat	6.0 and higher
	SuSE	8.2 and higher
	Mandriva (Mandrake)	9.0 and higher
Novell	Netware	5.0 and higher
Mac		OS 9 and higher
Dos		6.2 and higher

Components

CS1912 Front View

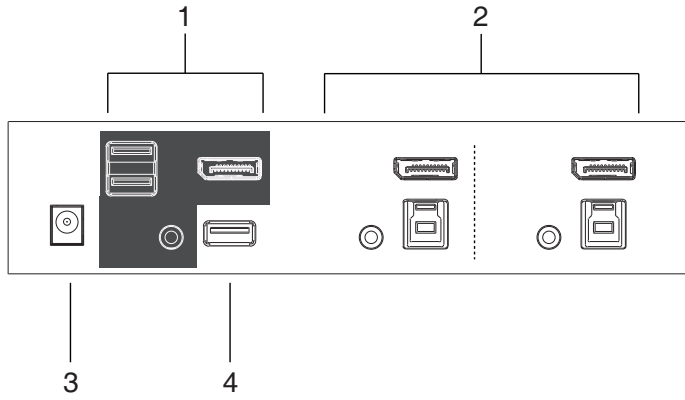


CS1914 Front View

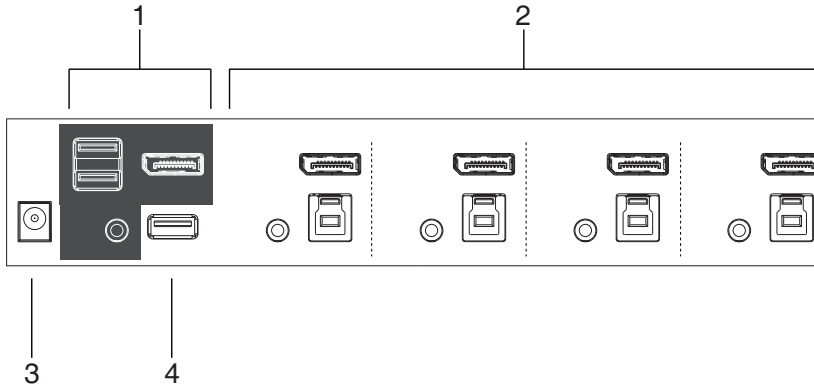


No.	Component	Description
1	Port Selection Pushbuttons	For manual port selection (see *Manual Switching*, page 13): ◆ Press a port selection pushbutton for longer than two seconds to bring the KVM, USB hub, and audio focus to the computer attached to its corresponding port. ◆ Press a port selection pushbutton twice to bring the audio focus to the computer attached to its corresponding port. ◆ Press a switch for less than two seconds to bring only the KVM focus to the computer attached to its corresponding port. ◆ Press switches 1 and 2 simultaneously for 2 seconds to start Auto Scan Mode (see *Auto Scanning*, page 21).
2	Port LEDs	The Port LEDs are built into the Port Selection Pushbuttons. The upper are KVM Port LEDs; the lower are USB LEDs: **KVM** ◆ Lights DIM ORANGE to indicate that the computer attached to the corresponding port is connected (online). ◆ 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. **USB** ◆ Lights GREEN to indicate that the computer attached to its corresponding port is the one that has access to the USB peripherals.
3	Audio Ports	The cables from your main speakers plug in here. The speakers plugged in here have priority over those on the rear panel.
4	USB 3.1 Gen 1 Hub	USB peripherals (printers, scanners, drives etc.) plug into this port. USB 3.1 Gen 1 port features 5 Gbps transfer rates.

CS1912 Rear View



CS1914 Rear View



No.	Component	Description
1	Console Ports	The cables from your DisplayPort monitor, USB keyboard, USB mouse, speakers, and microphone plug in here. Each connector is marked with an appropriate icon to indicate its use.
2	KVM Ports	The cables that link the switch to your computers plug in here. Each KVM port section is comprised of a speaker jack, USB type B socket and a DisplayPort connector.
3	Power Jack	The power adapter cable plugs into this jack.
4	USB 3.1 Gen 1 Hub	USB peripherals (printers, scanners, drives etc.) plug into this port. USB 3.1 Gen 1 port features 5 Gbps transfer rates.

Chapter 2
Hardware Setup

1. Important safety information regarding the placement of this device is provided on page 35. 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 installation, refer to the installation diagram on the following page (the numbers in the diagram on page 11 correspond to the steps below), and do the following:

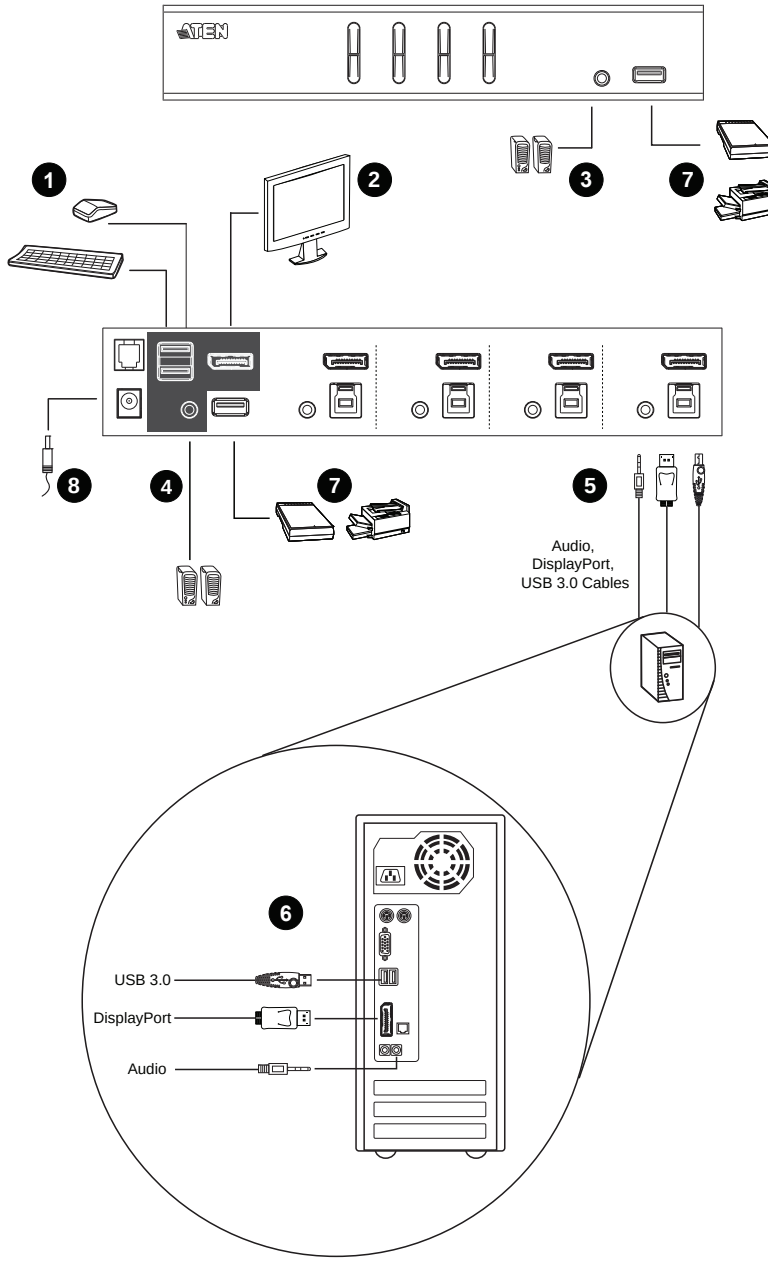
1. Plug the USB keyboard and USB mouse into the USB console ports located on the unit's rear panel.
2. Plug the console monitor into the DisplayPort console port located on the unit's rear panel and power on the monitor.
3. Plug the main speakers into the console speaker jack located on the unit's front panel. The speakers plugged into this port have priority over those in the rear panel.
4. (Optional) Plug your secondary speakers into the console audio port located on the unit's rear panel.
5. Using the cables provided with this package, plug the DisplayPort, USB 3.0, and speaker connectors into their corresponding sockets in the KVM Port section of the switch.

Note: Verify that all the plugs are in the same KVM Port sockets (all in Port 1, all in Port 2, etc.), and that each socket is marked with an appropriate icon to indicate itself.

6. At the other ends of the cables, plug the DisplayPort, USB 3.0, and speaker connectors into their respective ports on the computer.
7. (Optional) Plug your USB peripherals into the type A sockets in the USB hub section.
8. Plug the power adapter (provided with this package) into the switch's Power Jack and then plug the other end into a power source.
9. Power on the computers.

Note:
- By default, the switch links to the first computer that is powered on.
- It is recommended that the total cable length from the PC to monitor is less than 3 meters.
- Choosing high quality cables helps to ensure that 3840 x 1260 @ 30 Hz resolutions can be reached.
- Make sure the computers and devices that the CS1912 / CS1914 connects to are also properly grounded.

Installation Diagram



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Chapter 3
Basic Operation

Manual Switching

There are three 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, and Hotkey – by entering combinations on the keyboard.

Manual Switching

For manual port selection:

- Press and release a port selection pushbutton to bring the KVM focus, plus the USB and Audio 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.
- Press and hold a port selection pushbutton for more than 2 seconds to bring the KVM focus to the computer attached to its corresponding port. The USB and Audio focus does not change – they stay with the port that they are already on.
- Press and hold port selection pushbutton 1 and 2 for more than 2 seconds to start Auto Scan Mode (see page 21 for details).
- 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 switch you pressed.

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*, page 22, 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 *Cycling Through the Ports*, page 19.

Hot Plugging

The CS1912 / CS1914 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 CS1912 / CS1914 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 CS1912 / CS1914 switch is assigned a port number. (1 or 2 for the CS1912; 1 to 4 for the CS1914). The port numbers are marked on the rear panel of the switch (see page 8 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 20 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 the KVM, audio and USB 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.
- Press and hold a port selection pushbutton for more than 2 seconds to bring only 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 21 for details.

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Chapter 4
Keyboard Emulation

Mac Keyboard

PC-compatible (101/104 key) keyboards can emulate the functions of a 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.

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Chapter 5
Hotkey Operation

The CS1912 / CS1914 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. Therefore, you can give one computer the KVM focus, another the USB hub focus, while a third has the audio focus.

Port Switching

All port switches begin with tapping the **Scroll Lock** key twice. The tables below describe the actions that each key 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 23, for details.

Cycling Through the Ports

Hotkey	Action
[Scroll Lock] [Scroll Lock] [Enter]	Brings the KVM, USB hub, and audio 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). **Note**: the KVM, USB hub, and audio focus all go to this port even if they were on different ports to begin with.
[Scroll Lock] [Scroll Lock] [K] [Enter]	Brings only the KVM focus from the port that currently has it to the next port on the installation. The USB and audio focus remain where they are.
[Scroll Lock] [Scroll Lock] [U] [Enter]	Brings only the USB hub focus from the port that currently has it to the next port on the installation. The KVM and audio focus remain where they are.
[Scroll Lock] [Scroll Lock] [S] [Enter]	Brings only the audio 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.

Going Directly to a Port

Hotkey	Action
[Scroll Lock] [Scroll Lock] [n] [Enter]	Brings the KVM, USB, and audio focus to the computer attached to the port corresponding to the specified Port ID. Note that the KVM, USB, and audio focus all go to this port even if they were on different ports to begin with.
[Scroll Lock] [Scroll Lock] [n] [K] [Enter]	Brings only the KVM focus to the computer attached to the specified port. The USB hub and audio focus remain where they are.
[Scroll Lock] [Scroll Lock] [n] [U] [Enter]	Brings only the USB hub focus to the computer attached to the specified port. The KVM and audio focus remain where they are.
[Scroll Lock] [Scroll Lock] [n] [S] [Enter]	Brings only the audio focus to the computer attached to the specified port. The KVM and USB hub focus remain where they are.
[Scroll Lock] [Scroll Lock] [n] [K] [U] [Enter]	Brings the KVM and USB hub focus to the computer attached to the specified port. The audio focus remains where it is.
[Scroll Lock] [Scroll Lock] [n] [K] [S] [Enter]	Brings the KVM and audio focus to the computer attached to the specified port. The USB focus remains where it is.
[Scroll Lock] [Scroll Lock] [n] [U] [S] [Enter]	Brings the USB hub and audio focus to the computer attached to the specified port. The KVM focus remains where it is.

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

Auto Scanning

The CS1912 / CS1914'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] [n] [Enter]	The KVM focus cycles from port to port at **n** second intervals. **Note:** The n stands for the number of seconds that the CS1912 / CS1914 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.

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, mouse, and USB focus 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 CS1912 / CS1914 switch's configuration. All operations begin with invoking Hotkey Setting Mode (HSM).

Invoking HSM

To invoke HSM, do the following:

1. Press and hold down the **Num Lock** key.
2. Press and release the **minus** key.
3. Release the **Num Lock** key.

Note: 1. There is an alternate key combination to invoke HSM. See page 23 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. 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 HSM 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 22).
2. Press and release the **H** key.

   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 22).
2. Press and release the **T** key.

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 Operating Platform

The CS1912 / CS1914'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 22).
3. Press and release the appropriate Function key (see table below). After completing this procedure, you automatically exit HSM.

Function Key	Operation
[F1]	To set the keyboard/mouse to use SPC mode so that it can work under special operating systems as a standard (104 key) keyboard/mouse.
[F2]	Enables Mac keyboard emulation, see *Mac Keyboard*, page 17 for 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 22).
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 22 for details).
2. Press and release **[F5]**.

Keyboard Language

To change the keyboard language, do the following:

1. Invoke HSM (see page 22).
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; German: 09).

Hotkey Beeper

The Beeper can be hotkey toggled On and Off. To toggle the Beeper, do the following:

1. Invoke HSM (see page 22).
2. Press and release **[B]**.

   The Beeper toggles On or Off.

Port Switching Keys

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

1. Invoke HSM (see page 22 for details).
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 CS1912 / CS1914 to Firmware Upgrade Mode, do the following:

1. Invoke HSM (see page 22 for details).
2. Key in: `upgrade`
3. Press **[Enter]**. The front panel LEDs flash to indicate the upgrade has started.

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

Restore Default Settings

To reset the CS1912 / CS1914 to its default hotkey settings, do the following:

1. Invoke HSM (see page 22 for details).
2. Press **[R] [Enter]**.

   All hotkey settings return to the factory default values. See *Hotkey Default Settings*, page 40.

Alternative Manual Port Selection

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

1. Invoke HSM (see page 22).
2. Press **[S]**.

   See *Alternative Manual Port Selection Settings*, page 15, for details.

Mouse Emulation

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

1. Invoke HSM (see page 22).
2. Press **[M]**.

Mouse Port Switching

Mouse Port Switching allows you to use the mouse wheel button (clicked twice) to switch ports. For Mouse Port Switching to work, Mouse Emulation (above) must be enabled.To toggle between mouse port switching enabled and disabled, do the following:

1. Invoke HSM (see page 22).
2. Press **[W]**.

   This procedure is a toggle. Repeat to disable.

Note: This feature is only supported by USB 3-key scroll wheel mice. The default setting is OFF. This feature is only supported when mouse emulation is also enabled. See *Mouse Emulation*, above.

Keyboard Emulation

The console keyboard port emulation/bypass feature supports most gaming/ multimedia keyboards. The default setting is enabled. To disable, do the following:

1. Invoke HSM (see page 22).
2. Press **[N]**.

   This procedure is a toggle. Repeat to enable.

Note: When keyboard emulation is disabled, the [M], [W], [F2], [F4], [F5], [F6], and [F10] hotkey operations are disabled.

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 disable Power on Detection, do the following:

1. Invoke HSM (see page 22).
2. Press and release **[E]**.

   This setting is a toggle. Repeat to enable.

Monitor Re-detection

If the monitor's display is blank, use this hotkey to re-detect the monitor's EDID. Monitor re-detection can be enabled or disabled. The default setting is disabled. To enable monitor re-detection, do the following:

1. Invoke HSM (see page 22).
2. Press **[Q] [*n*] [Enter]**.

   n is a one-digit number that represents the port number: *n*=1-2 (CS1912); or *n*=1-4 (CS1914).

   This procedure is a toggle. Repeat to revert to the original setting.

HSM Summary Table

After invoking HSM (see page 22), key in one of the following keys to perform the corresponding function:

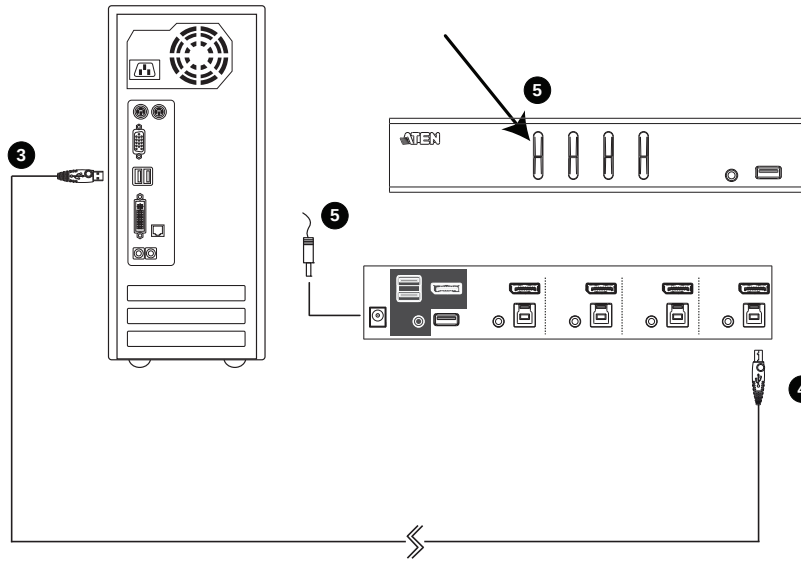
Key	Function
[B]	Toggles the beeper On and Off.
[E]	Enables/Disables the Power on Detection feature.
[H]	Toggles between the default and alternate HSM invocation keys.
[M]	Toggles between mouse emulation enable and disable.
[N]	Enables/Disables keyboard emulation.
[R] [Enter]	Resets the hotkey settings to their default statuses.
[S]	Toggles between the default and alternative pushbutton operation settings.
[T]	Toggles between the default ([Scroll Lock] [Scroll Lock]) and alternate ([Ctrl] [Ctrl]) Port Switching keys.
[u][p][g][r][a][d][e] [Enter]	Invokes Firmware Upgrade Mode.
[W]	Enables/Disable mouse port switching
[X] [Enter]	Enables/Disables the Port Switching keys.
[F1]	Allows the keyboard and mouse to work under special operating systems as a standard (104 key) keyboard/ mouse.
[F2]	Enables Mac keyboard emulation.
[F4]	Print the switch's current settings via a text editor or word processor.
[F5]	Performs a reset on all USB devices.
[F6] [nn]	Sets the keyboard language. *nn* represents one of the following keyboard language codes: US English: 33; French: 08; Japanese: 15; German: 09.
[F10]	Auto detects the keyboard operating platform.

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/download/download_fw.php`

Before you Begin

1. From a computer that is not part of your KVM installation, go to our Support & Download site and choose the model name that relates to your device (CS1912 / CS1914) 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 CS1912 / CS1914 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.

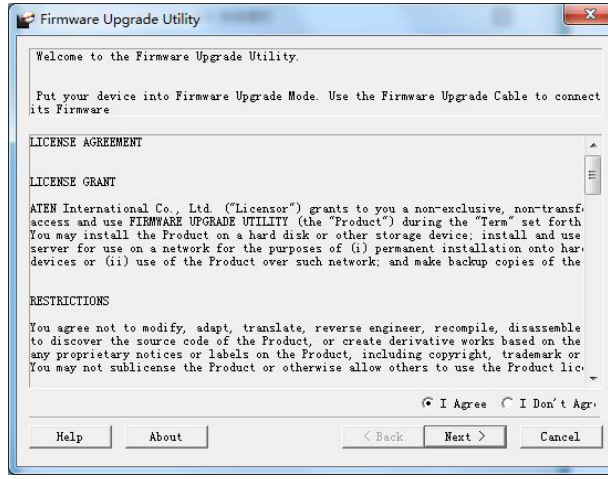
5. Press and hold the Port 1 selection pushbutton. While you are holding the button, connect the power adapter to the CS1912 / CS1914 to enter Firmware Upgrade Mode. The front panel LEDs flash together to indicate Firmware Upgrade Mode is in effect.

Starting the Upgrade

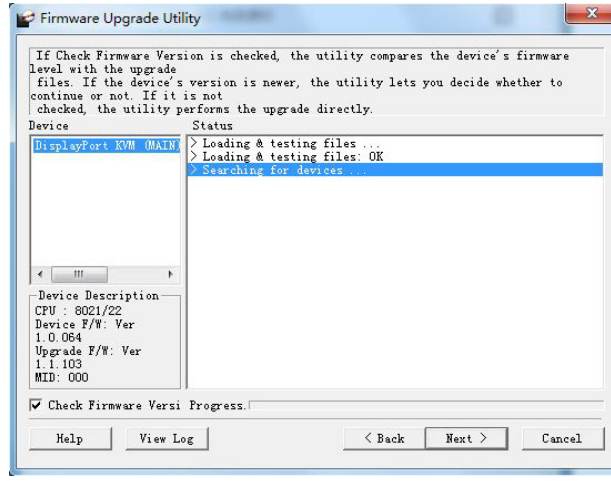
1. Run the downloaded Firmware Upgrade Package file – either by double clicking the file icon, or using a command line to enter the full path.

   The *Firmware Upgrade Utility* Welcome screen appears:

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



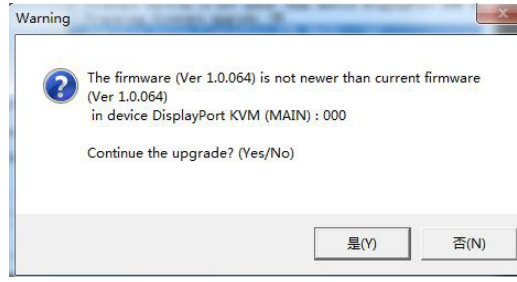
3. Click **Next.** The Firmware Upgrade Utility main screen appears. The Utility inspects your installation. All the devices capable of being upgraded by the package are listed in the *Device List* panel.



(Continues on next page.)

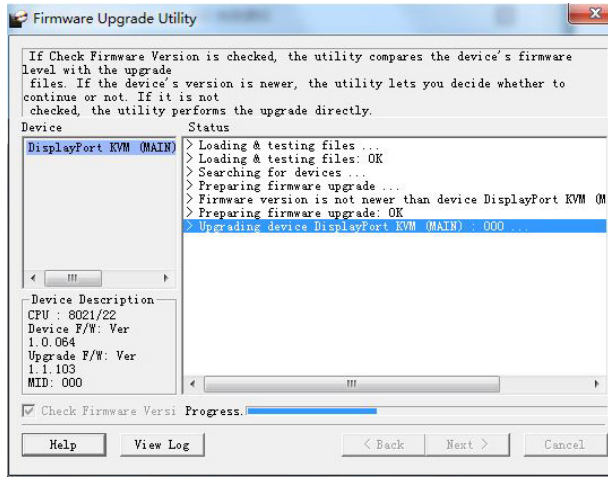
4. As you select a device in the list, its description appears in the Device Description panel.After you have made your device selection(s), click **Next** to perform the upgrade.

   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.



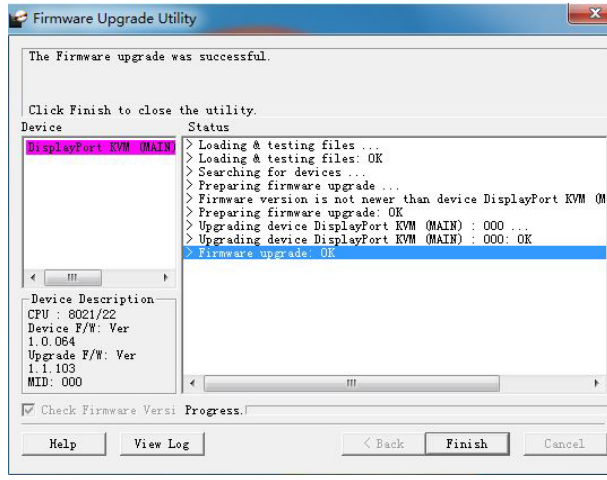
   If you did not enable *Check Firmware Version*, the Utility installs the upgrade files without checking whether they are a higher level, or not.

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



Upgrade Successful

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 CS1912 / CS1914 exits Firmware Upgrade Mode, and resets itself.

Upgrade Failed

If the *Upgrade Successful* screen does not appear, it means that the upgrade failed to complete successfully, and you should repeat the upgrade procedure from the beginning.

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Appendix

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

Technical Support

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 or to contact an ATEN regional office: **www.aten.com/support**

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			CS1912	CS1914
Connections	Computer		2	4
	Console		1	
Port Selection			Pushbuttons, Hotkey, Mouse*	
Connectors	Console Ports	Keyboard	1 x USB Type A (Black)	
		Video	1 x DisplayPort (White)	
		Mouse	1 x USB Type A (Black)	
		Speakers	1 x 3.5 mm Mini Stereo Jack (Green: Front) 1 x 3.5 mm Mini Stereo Jack (Green: Rear)	
	KVM Ports	KB / Mouse	2 x USB 3.1 Gen 1 Type B (Blue)	4 x USB 3.1 Gen 1 Type B (Blue)
		Video	2 x DisplayPort (Black)	4 x DisplayPort (Black)
		Speakers	2 x 3.5 mm Mini Stereo Jack (Green)	4 x 3.5 mm Mini Stereo Jack (Green)
	USB Hub		1 x USB 3.1 Gen 1 Type A (Blue; Front) 1 x USB 3.1 Gen 1 Type A (Blue; Rear)	
	Power		1 x DC 5 V Jack	
Switches	Selected		2 x Pushbutton	4 x Pushbutton
LEDs	On Line / Selected		2 (Orange)	4 (Orange)
	USB Link		2 (Green)	4 (Green)
Emulation	Keyboard / Mouse		USB	
Video			2560 x 1600 @ 60 Hz, 3840 x 2160 @ 30 Hz	
Scan Interval			1–99 secs. (5 secs. default)	
Power Consumption			DC 5 V	DC 5 V
Environment	Operating Temp.		0–50º C	
	Storage Temp.		-20–60º C	
	Humidity		0–80% RH, Non-condensing	
Physical Properties	Housing		Metal	
	Weight		0.73 kg	0.91 kg
	Dimensions (L x W x H)		21.00 x 8.80 x 5.55 cm	27.00 x 8.80 x 5.55 cm

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

Troubleshooting

Operation problems can be due to a variety of causes. The first step in solving them is to make sure that all cables are securely attached and seated completely in their sockets. In addition, updating the product's firmware may solve problems that have been discovered and resolved since the prior version was released. If your product is not running the latest firmware version, we strongly recommend that you upgrade. See *The Firmware Upgrade Utility*, Chapter 6, for upgrade details.

Symptom	Possible Cause	Action
Erratic behavior.	Unit not receiving enough power.	Use a DC 5V 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 24), to reset the USB ports.

Hotkey Default Settings

The hotkey factory default settings are as follows:

Setting	Default
Port Switching	[Scroll Lock] [Scroll Lock]
Invoking HSM	[Number Lock] [-]
Auto Scan Interval	5 Seconds
Beeper	On
Keyboard Operating Platform	PC-Compatible
Port Switching Keys	Enabled

Limited Warranty

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

What is covered by the Limited Hardware Warranty

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

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

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

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