



Simply Better Connections

CM1942

2-Port 4K DisplayPort Dual Display  
Mini-Matrix Boundless KVM 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 B digital service, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. Any changes or modifications made to this equipment may void the user's authority to operate this equipment. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

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.



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**Industry Canada Statement**

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

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**RoHS**

This product is RoHS compliant.

## 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:

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:

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International	<a href="http://www.aten.com">http://www.aten.com</a>
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## 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.

- ♦ 1 CM1942 2-Port 4K DisplayPort Dual Display Mini-Matrix Boundless KVM Switch
- ♦ 4 DisplayPort cables
- ♦ 2 microphone cables
- ♦ 2 speaker cables
- ♦ 2 USB 3.0 Type-A to Type-B cables
- ♦ 1 remote port selector
- ♦ 1 power adapter
- ♦ 1 user instructions

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**Note:** 4K video resolution needs the high quality DisplayPort Cable.

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## About this Manual

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This User Manual is provided to help you get the most from your CM1942 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 CM1942. 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 CM1942.

**Chapter 4, Hotkey Operation**, details all of the concepts and procedures involved in the Hotkey operation of your CM1942 installation.

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

**Chapter 6, The Firmware Upgrade Utility**, explains how to use the CM1942's firmware with the latest available versions.

**Appendix**, which provides specifications and other technical information regarding the CM1942.


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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**

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.  |

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# Chapter 1

## Introduction

### Overview

---

The CM1942 2-Port 4K DisplayPort Dual Display Mini-Matrix Boundless KVM Switch, combining a 2-port DisplayPort switch and a 2-port USB 3.1 Gen 1 hub, is designed to provide instant access to two DisplayPort computers via a single USB / HDMI console. The CM1942 features two PC Operation Modes to facilitate KVM switching in a 2x2 PC / monitor matrix. In Single PC Mode, content of the PC with the current KVM focus can be displayed over both monitors; Dual PC Mode, on the other hand, allows content of both PCs to be displayed separately on two monitors regardless of the KVM focus.

Advanced video support provides a better-defined HDMI connection with vivid video resolutions up to 4K DCI (4096 x 2160 @ 60 Hz). With the CM1942, users can quickly and effortlessly switch between two computers by using convenient pushbuttons, hotkeys, mouse wheel, mouse cursor, and remote port selector. Featuring Boundless Switching, the CM1942 allows users to simply move the mouse cursor across windows to switch to other video sources. This makes it easier to instantly access and control a target computer. With the built-in 2-port USB 3.1 Gen 1 hub, access to connected peripherals is easy between two computers while peripheral is independent of the KVM focus. In addition, the CM1942 allows data transfer rates up to 5 Gbps for maximum multimedia operation efficiency, making desktop multitasking effortless and more productive.

Engineered to meet the ever-increasing demand for dual display, ultra-fast data transmission rates, and lossless 4K video resolution, the CM1942 is specifically designed for applications in which multitasking is vital such as graphic design, financial trading, and video post production.

## Features

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- ◆ One dual-view USB / HDMI console controls two DisplayPort computers and two USB 3.1 Gen 1 peripherals
- ◆ Supports superior video quality – resolutions up to 4K DCI (4096 x 2160 @ 60Hz)
- ◆ Two PC Operation Modes
  - ◆ Single PC Mode – allows content of the PC with current KVM focus to be displayed over both monitors
  - ◆ Dual PC Mode – allows content of two PCs to be displayed separately on two monitors regardless of the KVM focus
- ◆ Computer selection via pushbuttons, hotkeys, mouse wheel<sup>1</sup>, mouse cursor, and remote port selector
- ◆ Boundless Switching – allows the mouse cursor to move across screen borders for quick switching between video sources
- ◆ Video DynaSync™ – exclusive ATEN technology eliminates boot-up display problems and optimizes resolutions when switching between ports
- ◆ Audio Mixer Mode – mixes up to two audio sources as one audio output
- ◆ DisplayPort 1.2<sup>2</sup>, HDMI, and HDCP compliant
- ◆ Built-in 2-port USB 3.1 Gen 1 hub with SuperSpeed 5 Gbps data transfer rates
- ◆ Power on detection
- ◆ Console mouse port emulation / bypass feature supports most mouse drivers and multifunction mice
- ◆ Console keyboard emulation / bypass feature supports most multimedia keyboards
- ◆ Multilingual keyboard mapping - supports English, Japanese, French, and German keyboards

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

2. For DisplayPort compliant display device, make sure to configure the device setting to be compatible with DisplayPort 1.2 to avoid compatibility issue.

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## **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 DisplayPort ports
- ♦ A USB Type-A port
- ♦ Audio ports

### **Cables**

To guarantee video quality, we recommend using only ATEN DisplayPort KVM cables which are certified by the VESA Compliance Program.

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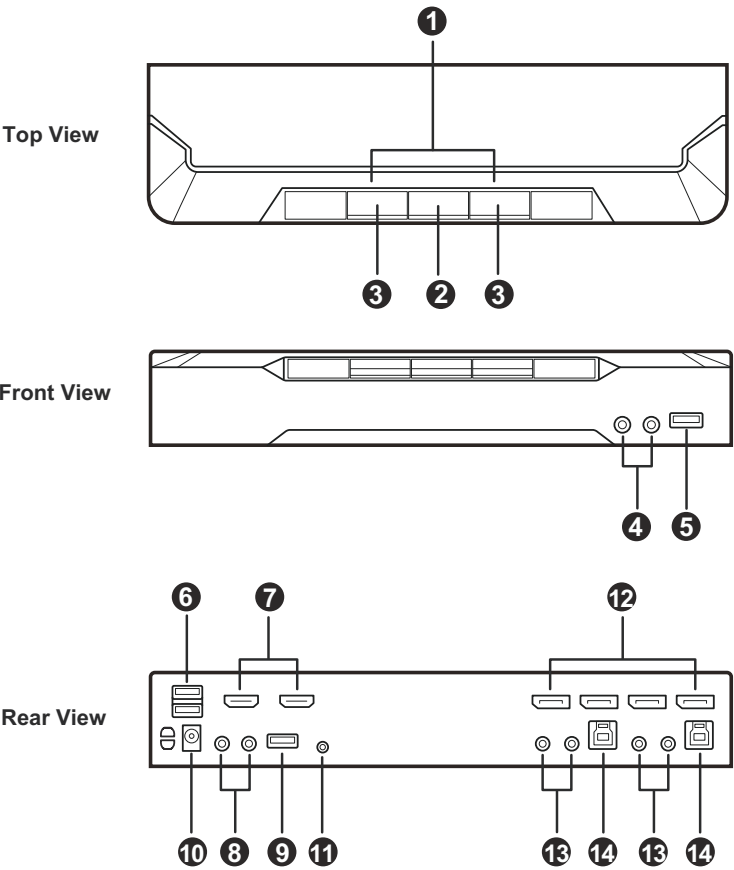
#### **Note:**

- ♦ 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 3.3 meters (1.5 meters between the PC and the KVM switch. 1.8 meters between the KVM switch and the monitor). If you need additional cables, please contact your dealer to purchase ATEN approved cables.
  - ♦ If you are using DisplayPort cables that are only DP 1.1 compliant, make sure the DisplayPort setting of the monitor is set to auto or DP 1.1.
- 


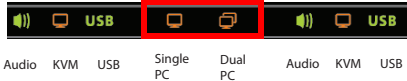
### **Operating Systems**

- ♦ Windows
- ♦ Mac
- ♦ Linux

# Components





No.	Component	Description
Top View		
1	port LEDs	<p>The LEDs will light to indicate its mode and status:</p>  <p>Audio KVM USB Single PC Dual PC Audio KVM USB</p> <p><b>KVM</b></p> <ul style="list-style-type: none"><li>♦ Lights DIM ORANGE to indicate that the computer attached to the corresponding port is connected (online).</li><li>♦ Changes to BRIGHT ORANGE to indicate that the computer attached to its corresponding port is the one that has the KVM focus (Selected).</li><li>♦ Flashes to indicate that the computer attached to its corresponding port is being accessed under Auto Scan mode.</li><li>♦ All LEDs flash together to indicate Firmware Upgrade Mode is in effect.</li></ul> <p><b>USB</b></p> <ul style="list-style-type: none"><li>♦ Lights GREEN to indicate that the computer attached to its corresponding port is the one that has access to the USB peripherals.</li></ul> <p><b>Audio</b></p> <ul style="list-style-type: none"><li>♦ Lights GREEN to indicate that the audio is being outputted from the corresponding port(s).</li></ul>
2	mode selection pushbutton	<p>The LEDs will light to indicate its mode and status:</p>  <p>Audio KVM USB Single PC Dual PC Audio KVM USB</p> <ul style="list-style-type: none"><li>♦ Press and hold mode selection pushbutton and the remote port selector pushbutton before powering on to enter Firmware Upgrade Mode. See <i>The Firmware Upgrade Utility</i>, page 39.</li><li>♦ Press the mode selection pushbutton to switch between Single PC Mode and Dual PC Mode.<ul style="list-style-type: none"><li>♦ Single PC Mode – operate with one PC, and view the content of the same PC at a time.</li><li>♦ Dual PC Mode – operate with the first PC, and view the content of the second PC at a time.</li></ul></li></ul>

No.	Component	Description
3	port selection pushbuttons	<p>For manual port selection (see <i>Manual Switching</i>, page 11):</p> <ul style="list-style-type: none"> <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 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 port selection pushbuttons 1 and 2 simultaneously for 2 seconds to start Auto Scan Mode (see <i>Boundless Switching with a Mouse Cursor</i>, page 21).</li> </ul>

#### Front View

4	audio jacks	<p>Your main console microphone and speakers plug in here.</p> <p><b>Note:</b> The microphone and speakers plugged into the front panel have priority over those plugged into the rear panel.</p>
5	USB 3.1 Gen 1 Type-A port	<p>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.</p>

#### Rear View (Console Ports Section)

6	USB 2.0 Type-A ports	<p>The cables from your keyboard (6), mouse (6), monitors (7), microphone (8), and speakers (8) plug in here. Each connector is marked with an appropriate icon to indicate itself.</p>
7	HDMI out	
8	audio jacks	
9	USB 3.1 Gen 1 Type-A port	<p>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.</p>
10	power jack	<p>The power adapter cable plugs into this jack.</p>
11	remote port selector jack	<p>The remote port selector plugs in here.</p>

#### Rear View (KVM Ports Section)

12	DisplayPort in	<p>The monitor 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 port, and two DisplayPort connectors.</p>
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No.	Component	Description
13	audio jacks	The audio 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 port, and two DisplayPort connectors.
14	USB Type-B ports	The USB Type-A to USB Type-B 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 port, and two DisplayPort connectors.

## Buzzer Behavior

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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 26 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 45. 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

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To set up your installation, refer to the installation diagram on the following page (the numbers in the diagram on page 10 correspond to the steps below), and do the following:

1. Connect your USB keyboard and USB mouse to the unit's USB 2.0 Type-A ports.
2. Connect up to two HDMI-enabled displays to the unit's HDMI output ports.
3. Connect your primary microphone and speakers to the unit's audio jacks located on the front panel. Optionally, connect your secondary microphone and speakers to the unit's audio jacks located on the rear panel.

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

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- Using the provided cables, connect the audio, video, and USB ports of up to 2 PCs to the KVM ports section on the KVM switch.

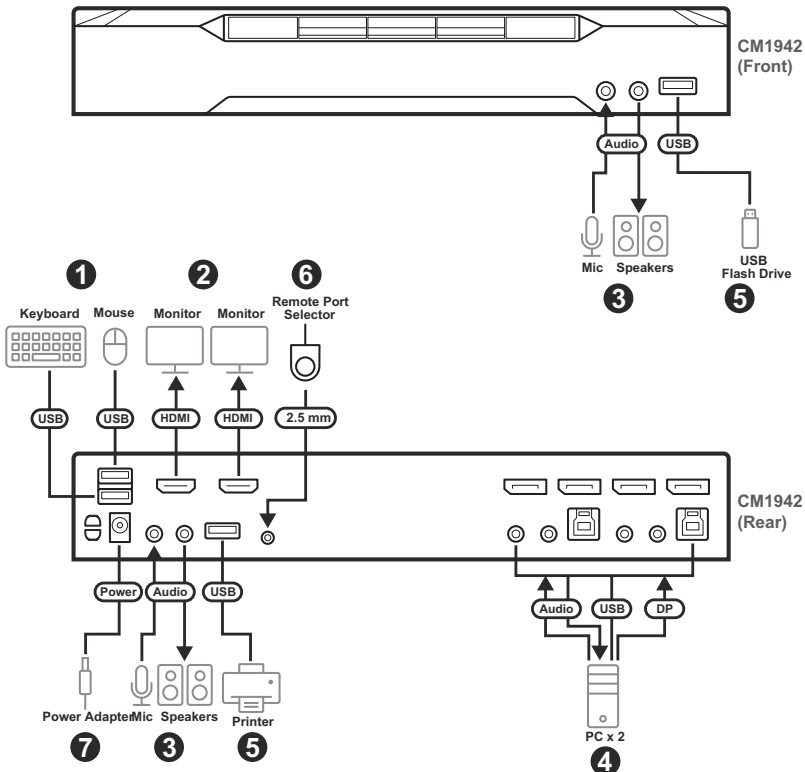
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**Note:** Verify that all the connectors are in the same KVM ports section (all in CPU1, all in CPU2, etc.).

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- (Optional) Connect your USB peripherals to the unit's USB 3.1 Gen 1 Type-A ports.
- (Optional) To use the remote port selector, connect its cable to the unit's remote port selector jack.
- Plug the power adapter to the unit's power jack. Now the CM1942 is turned on.
- Power on the computers, displays, and the other connected devices.

## Installation Diagram



# 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 Boundless Switching – by moving the mouse cursor across display borders.

#### 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 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 a port selection pushbutton twice to bring the audio 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).
- ♦ 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:

- ♦ Mouse switching is only supported by USB 3-key scroll wheel mice.
  - ♦ Mouse switching is disabled by default. See *Hotkey Setting Mode (HSM)*, page 23, to enable mouse switching.
  - ♦ 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 17.

## **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.

## **Boundless Switching**

Boundless Switching is for port selection by moving the cursor across the display borders – when the cursor appears on the next screen, the keyboard and mouse focus switches. Before using Boundless Switching, you must turn off mouse acceleration in the operating system and configure:

- ♦ The screen size of all connected displays via hotkey, for more information, see *Screen Size*, page 18.
- ♦ The monitor layout via hotkey, for more information see *Monitor Layout*, page 26.

## **Boundless Switching Settings with a Mouse Cursor**

You can set the boundless switching keyboard and mouse focus behavior when the cursor appears on the next screen. For more information, see *Boundless Switching with a Mouse Cursor*, page 21.

## **Operation Mode Switching**

---

There are two methods you can switch between Single PC Mode and Dual PC Mode for your computer operation.

- ♦ Via hotkeys: For more information, see *Setting the PC Operation Mode*, page 28.
- ♦ Via the remote port selector: Make sure the remote port selector is connected to the CM1942, press and hold the remote port selector for 3 seconds to switch between the operation modes.

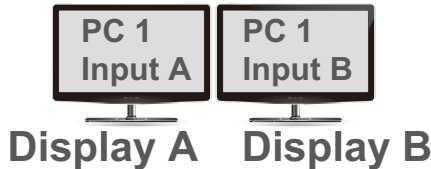


## Display Mode

The CM1942 support two display modes, you can either display the content of one PC on 2 monitors or display the contents of two PCs separately on two monitors.

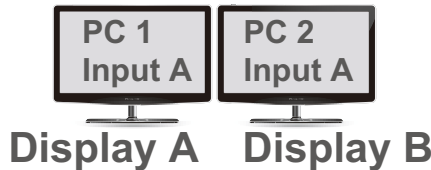
### Single PC Mode

**Extend Display (default)**



### Dual PC Mode

**Dual Display**

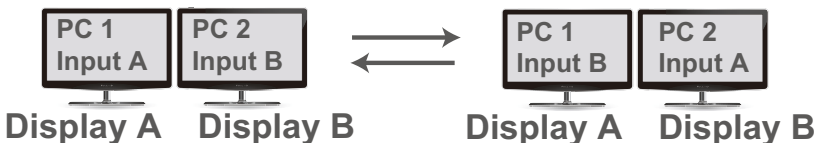


For more information on how to configure different dual display layouts related hotkeys, see *Dual Display Layouts*, page 14. Before configuring the monitor layout you must switch to Dual PC Mode, see *Setting the PC Operation Mode*, page 28.

### **Matrix Display**

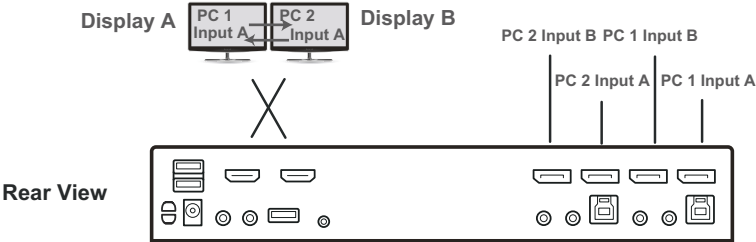
To display two PCs separately on two monitors, make sure the following configurations are made. This function is only supported by CM1942 using firmware version v1.0.066 or later.

- Please configure your PC's display settings and make sure the main display of your PCs are connected to the DisplayPort output port (A) on both the CPU1 and CPU2 ports.
- Please make sure the EDID mode is not set to default setting(n=1), see *EDID Mode*, page 33.



# Dual Display Layouts

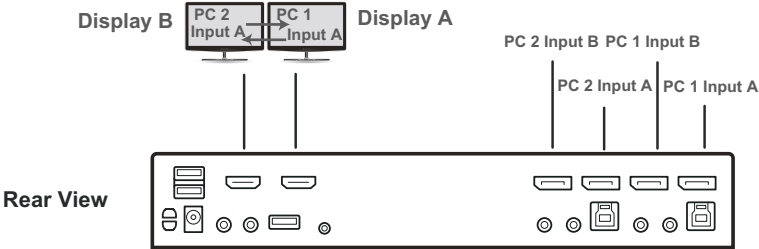
## Dual Display layout 1



Hotkeys:

[Invoke HSM (page 23)] + [P] + [A] + [1] + [2] + [Enter]

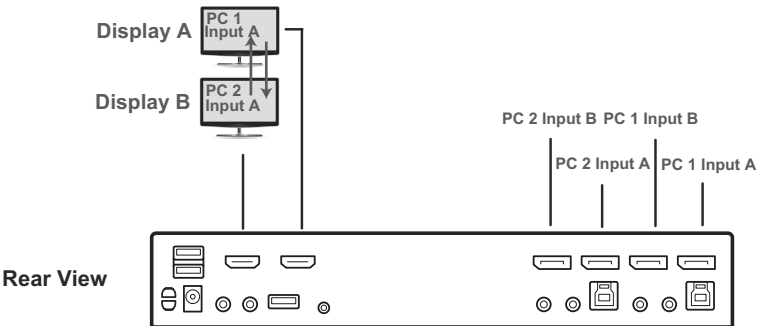
## Dual Display layout 2



Hotkeys:

[Invoke HSM (page 23)] + [P] + [A] + [2] + [1] + [Enter]

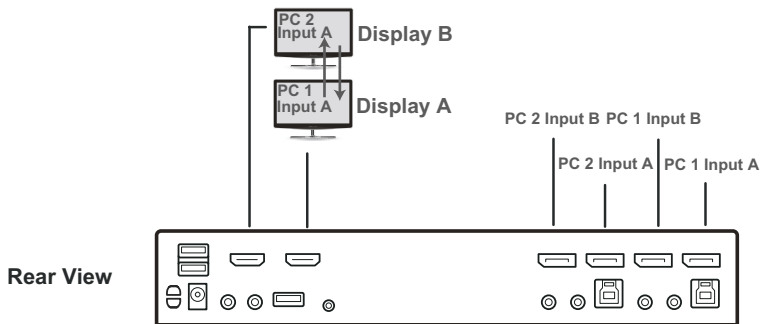
## Dual Display layout 3



Hotkeys:

[Invoke HSM (page 23)] + [P] + [A] + [1] + [B] + [2] + [Enter]

## Dual Display layout 4



Hotkeys:

[Invoke HSM (page 23)] + [P] + [A] + [2] + [B] + [1] + [Enter]

## Hot Plugging

The CM1942 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 CM1942 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 CM1942 switch is assigned a port number (1 to 2). The port numbers are marked (CPU 1 and CPU 2) on the rear panel of the switch (see page 4 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 19 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 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 a port selection pushbutton twice to bring the audio 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.

## Chapter 4

# Hotkey Operation

The CM1942 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 24, 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 1). <b>Example:</b> 1. Press <b>[Scroll Lock]</b> twice. 2. Press <b>[Enter]</b> .
[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> 1. Press <b>[Scroll Lock]</b> twice. 2. Press <b>[K]</b> . 3. Press <b>[Enter]</b> .
[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> 1. Press <b>[Scroll Lock]</b> twice. 2. Press <b>[U]</b> . 3. Press <b>[Enter]</b> .
[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> 1. Press <b>[Scroll Lock]</b> twice. 2. Press <b>[S]</b> . 3. Press <b>[Enter]</b> .

## 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, or 3). See *Port ID Numbering*, page 16 for details. Replace the **n** with the appropriate Port ID when entering Hotkey combinations.



## Boundless Switching with a Mouse Cursor

Hotkey	Action
[Scroll Lock] [Scroll Lock] [K] [U] [Enter]	<p>Sets the <b>keyboard and mouse</b>, and <b>USB</b> focus from the port that currently has the KVM focus to the next port on the installation with the mouse cursor. 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>[K]</b>, and then press <b>[U]</b>.</li> <li>3. Press <b>[Enter]</b>.</li> </ol>
[Scroll Lock] [Scroll Lock] [K] [S] [Enter]	<p>Sets the <b>keyboard and mouse</b>, and <b>audio</b> focus from the port that currently has the KVM focus to the next port on the installation with the mouse cursor. 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>[K]</b>, and then press <b>[S]</b>.</li> <li>3. Press <b>[Enter]</b>.</li> </ol>
[Scroll Lock] [Scroll Lock] [K] [K] [Enter]	<p>Sets only the <b>keyboard and mouse</b> focus from the port that currently has the KVM focus to the next port on the installation with the mouse cursor. The USB hub and 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>[K]</b>, and then press <b>[K]</b>.</li> <li>3. Press <b>[Enter]</b>.</li> </ol>
[Scroll Lock] [Scroll Lock] [K] [U] [S] [Enter]	<p>Sets the <b>keyboard and mouse</b>, <b>USB hub</b>, and <b>audio</b> focus from the port that currently has it to the next port on the installation.</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>[K]</b>, <b>[U]</b>, and then press <b>[S]</b>.</li> <li>3. Press <b>[Enter]</b>.</li> </ol>

**Note:** For these hotkeys to work, the boundless switching and dual PC mode must be enabled. See *Boundless Switching*, page 28, and *Setting the PC Operation Mode*, page 28.

## **Auto Scanning**

The CM1942'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:**

- ♦ The **n** stands for the number of seconds that the CM1942 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.
  - ♦ 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.
  - ♦ 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
  - ♦ 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 CM1942 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 23).
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 23).
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 CM1942'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 23).
3. Press and release the appropriate Function key (see table below). After completing this procedure, you automatically exit HSM.

Function Key	Operation
[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 37, for details.
[F3]	Enables Sun keyboard emulation, see page 38, 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 23).
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 23).
2. Press and release **[F5]**.

## **Keyboard Language**

To change the keyboard language, do the following:

1. Invoke HSM (see page 23).
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 23).
2. Press and release **[B]**.

## **Hotkey Port Switching**

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

1. Invoke HSM (see page 23).
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 23).
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 CM1942 to its default Hotkey settings, do the following:

1. Invoke HSM (see page 23).
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 23).
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 23).
2. Press **[S]**.

See *Alternative Manual Port Selection Settings*, page 16, 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 23).
2. Press **[N]**.

## **Mouse Emulation Control**

To enable / disable mouse emulation, do the following:

1. Invoke HSM (see page 23).
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 23).
2. Press [W].

## **Setting the PC Operation Mode**

This hotkey allows you to switch between Single PC Mode and Dual PC Mode. To switch the CM1942 to Dual PC Mode, do the following:

1. Invoke HSM (see page 23).
2. Press [O] [Enter].

---

**Note:** This procedure is a toggle between the two operation modes. To revert back to the Single PC Mode, go through the steps above.

---

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

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

1. Invoke HSM (see page 23).
2. Press [K] [Enter].

---

**Note:** If you encounter any problem when using the BIOS when your computer is starting up, please turn off the N-Key rollover keyboard supporting function and then try again.

---

## **Boundless Switching**

To enable or disable to toggle between the boundless switching, do the following:

1. Invoke HSM (see page 23).
2. Press [Y] [Enter].

---

**Note:** 1. This procedure is a toggle. To enable / disable the boundless switching, repeat step 1 and 2.

2. The mouse emulation must be enabled for the boundless switching to work, see *Mouse Emulation Control*, page 27.

---



## Setting the Screen Resolution

To set a resolution for your screen, do the following:

1. Invoke HSM (see page 23).
2. Press **[L] [Resolution (e.g., 3840 x 2160)] [Enter]**. The available resolution value can be set anywhere from 100 ~ 9999 x 100 ~ 9999.

## Configuring the Monitor Layout

Before configuring the monitor layout you must switch to Dual PC Mode, see *Setting the PC Operation Mode*, page 28. To configure the monitor layout, do the following:

1. Invoke HSM (see page 23).
2. Type in the layout using the parameters below:

Parameter	Row	Monitor
P	A	1, 2
	B	1, 2

**Parameter** refers to the letter “P” which all commands must begin with (PA12). **Row** refers to a group of displays aligned together, each letter represents a row: A, B. **Monitor** refers to a display in each row: 1, 2. Enter the number in order as it appears in the layout, left-to-right, beginning with Row A. The number represents the computer connected to a port # on the CM1942.

---

**Note:** Monitor 1 refers to the monitor connected to Port 1; Monitor 2 refers to the monitor connected to Port 2 respectively.

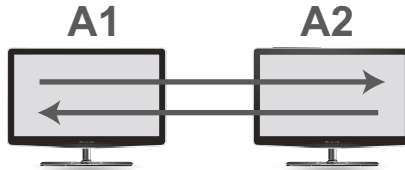
---

Examples are provided below with different layouts and arrows showing where the mouse cursor can cross display borders to switch computers.

**Example 1**

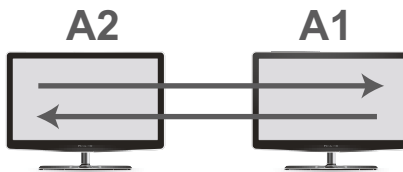
To key in a layout, enter "P" followed by "A" and a number for each display. If you have two displays in one row, type: **PA12 [Enter]**. The monitor 1 and 2 are fixed on the left and right in a row monitor layout.

1 x 2 Monitor Layout

**Example 2**

To key in a layout, enter "P" followed by "A" and a number for each display. If you have one display in each row, type: **PA21 [Enter]**. The monitor 1 and 2 are fixed on the right and left in a tier monitor layout.

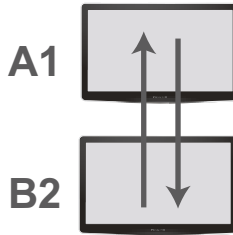
1 x 2 Monitor Layout



**Example 3**

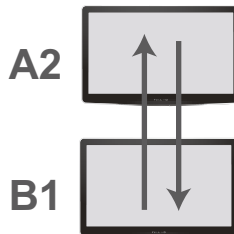
To key in a layout, enter "P" followed by "A" and a number for each display. If you have one display in each row, type: **PA1B2 [Enter]**. The monitor 1 and 2 are fixed on the top and bottom in a tier monitor layout.

2 x 1 Monitor Layout

**Example 4**

To key in a layout, enter "P" followed by "A" and a number for each display. If you have one display in each row, type: **PA2B1 [Enter]**. The monitor 1 and 2 are fixed on the bottom and top in a tier monitor layout.

2 x 1 Monitor Layout



## **Stereo Audio Mixer**

Stereo audio mixer is a mode function that mixes up to two audio sources and output the mixed audio (to the speakers). To enable / disable the stereo audio mixer mode, do the following:

1. Invoke HSM (see page 23).
2. Press [A] [O] [Enter].

---

**Note:** 1. This procedure is a toggle. To enable / disable the stereo audio mixer mode, repeat step 1 and 2.

2. HDMI audio mixing is unavailable, use audio cable connections for audio mixing.
- 

## **Automatic Audio Mixer Mode**

The audio sources are mixed together automatically when the KVM switch is switched to dual PC mode, and audio sources are separated when the KVM switch is switched to single PC mode. To enable the automatic audio mixer mode, do the following:

1. Invoke HSM (see page 23).
2. Press [A] [P] [Enter].

---

**Note:** This hotkey is only supported by CM1942 using firmware version v1.0.066 or later.

---

## **Manual Audio Mixer Mode**

The audio sources will not mix together when the KVM switch is switched to single PC mode or dual PC mode. To enable the manual audio mixer mode, do the following:

1. Invoke HSM (see page 23).
2. Press [A] [R] [Enter].

---

**Note:** This hotkey is only supported by CM1942 using firmware version v1.0.066 or later.

---

## EDID Mode

Extended Display Identification Data (EDID) is a data that contains a display's basic information and is used to communicate with the video source. The EDID mode allows you to set a pre-configured EDID for your connected display. To implement an EDID mode, do the following:

1. Invoke HSM (see page 23).
2. Press **[V] [n] [Enter]**.

n	Description
1	Uses the EDID of the monitor connected to Port A and B, this is the default setting.
2	Sets the EDID to FHD which is 1920 x 1080 @ 60 Hz.
3	Sets the EDID to 4K UHD which is 3840 x 2160 @ 60 Hz.
4	Sets the EDID to 4K DCI which is 4096 x 2160 @ 60 Hz.

**Note:** This hotkey is only supported by CM1942 using firmware version v1.0.066 or later.

## HSM Summary Table

After invoking HSM (see page 23), key in one of the following keys to perform the corresponding function:

Key	Function
[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.
[A] [O] [Enter]	Enables / disables the stereo audio mixer mode.
[A] [P] [Enter]	Enables the automatic audio mixer mode. <b>Note:</b> This hotkey is only supported by CM1942 using firmware version v1.0.066 or later.
[A] [R] [Enter]	Enables the manual audio mixer mode. <b>Note:</b> This hotkey is only supported by CM1942 using firmware version v1.0.066 or later.
[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.
[L] [resolution] [Enter]	Sets the resolution of your monitor. resolution = enters the resolution of your monitor, the available resolution value can be set from 100 ~ 9999 x 100 ~ 9999.
[M]	Enables / disables mouse emulation.
[N]	Enables / disables keyboard emulation.

Key	Function
[O] [Enter]	Switches between single PC mode and dual PC mode.
[P] [m] [n] [Enter]	Configures the physical monitor layout for boundless switching. m = A or B, refers to the row number. n = 1 or 2, refers to the monitor's column number.
[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.
[V] [n] [Enter]	Configure the EDID (n) for the KVM switch. <ul style="list-style-type: none"> <li>◆ n = 1 (Uses the EDID of the monitor connected to Port A and B, this is the default setting.)</li> <li>◆ n = 2 (Sets the EDID to FHD which is 1920 x 1080 @ 60 Hz.)</li> <li>◆ n = 3 (Sets the EDID to 4K UHD which is 3840 x 2160 @ 60 Hz.)</li> <li>◆ n = 4 (Sets the EDID to 4K DCI which is 4096 x 2160 @ 60 Hz.)</li> </ul> <b>Note:</b> This hotkey is only supported by CM1942 using firmware version v1.0.066 or later.
[W]	Enables / disables Mouse port switching. When enabled, click the mouse wheel twice to switch ports. Mouse emulation must be enabled.
[X] [Enter]	Enables / disables hotkey port switching.
[Y] [Enter]	Enables / disables boundless 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

# The Firmware Upgrade Utility

The Windows-based Firmware Upgrade Utility (FWUpgrade.exe) provides a smooth, automated process for upgrading the CM1942'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:

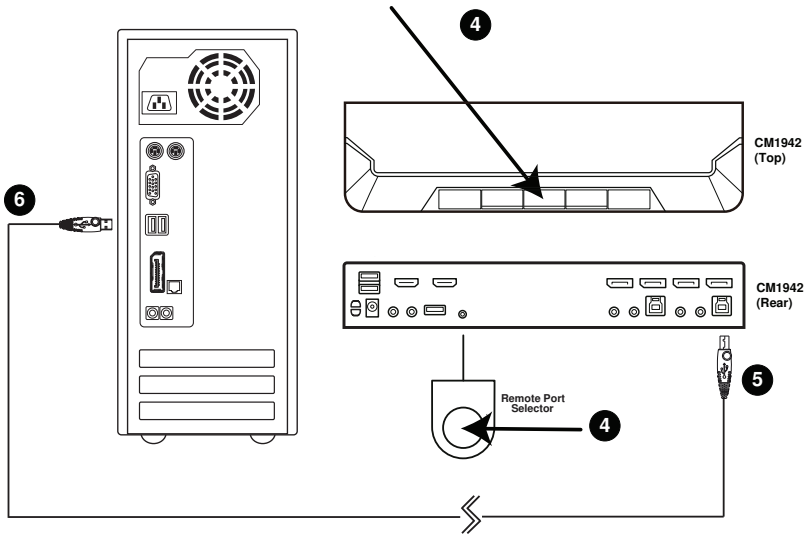
<http://www.aten.com/global/en/support-and-downloads/downloads/>

### Before You Begin

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To prepare for the firmware upgrade, do the following:

1. From a computer that is not part of your KVM installation, go to our [Aten Support & Download → Downloads](#) site and choose the model name that relates to your device (CM1942) 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. Unzip the downloaded firmware upgrade package.
4. Disconnect the CM1942 from your KVM installation and remove all cable connections, including the power adapter.



5. Press and hold the mode pushbutton or remote port selector pushbutton.
6. While holding the mode pushbutton or remote port selector pushbutton, connect the USB Type-B connector into the any available USB Type-B socket from the KVM ports section.
7. Connect the USB Type-A connector to a USB Type-A port on the computer.
8. Power on the CM1942. The port LEDs flash orange together to indicate Firmware Upgrade Mode is in effect.

You can also connect a keyboard to the console port and invoke the Firmware Upgrade Mode via hotkey. See *Firmware Upgrade Mode*, page 26.

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**Note:** While the CM1942 is in Firmware Upgrade Mode, normal keyboard and mouse functions are suspended. You must complete the firmware upgrade or exit Firmware Upgrade Mode to regain normal control of the console.

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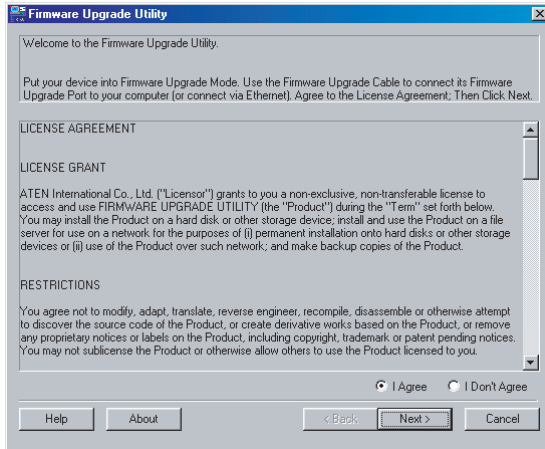
## Starting the Upgrade

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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:



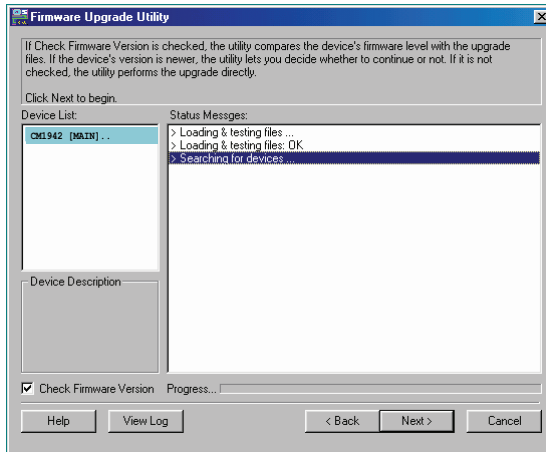
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**Note:** The screens shown in this section are for reference only. The wording and layout of the actual screens put up by the Firmware Upgrade Utility may vary slightly from these examples.

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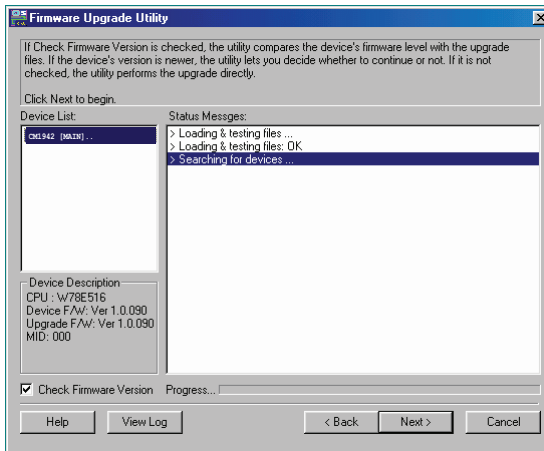
2. Read the License Agreement (enable the *I Agree* radio button).

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

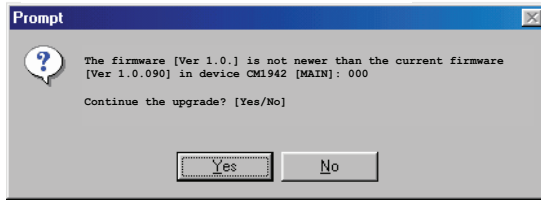


The Utility inspects your installation. All the devices capable of being upgraded by the package are listed in the *Device List* panel.

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.

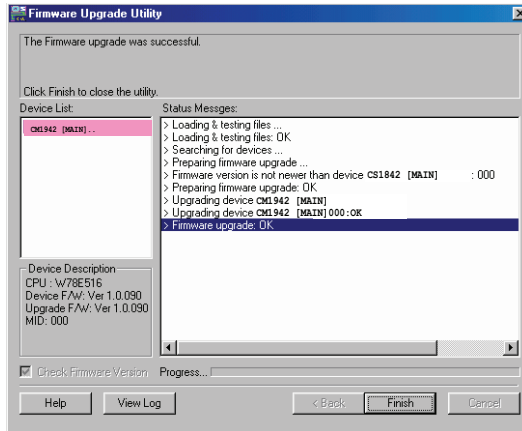
If you didn't enable *Check Firmware Version*, the Utility installs the upgrade files without checking whether they are a higher level, or not.

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

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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.

## Upgrade Failed

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If the *Upgrade Succeeded* screen doesn't appear, it means that the upgrade failed to complete successfully, and you should repeat the upgrade procedure from the beginning.



## Safety Instructions

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- ♦ 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.

# 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 ports.

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.
	CM1942 needs to be reset.	Power off all devices on the installation (see safety note, top of page 9); power off the CM1942; 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 CM1942's rear panel, then plug it back in.
	PC or OS does not support USB 2.0/3.0.	The CM1942 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 34.
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>
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.

## 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 iv:

### **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			CM1942
Computer Connections	Direct		2
Port Selection			Hotkey, Pushbutton, Mouse Wheel, Mouse Cursor, and Remote Port Selector
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 3.5 mm Audio Jack Female (Green; 1 x front, 1 x rear) 2 x 3.5 mm 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)
		Video	4 x DisplayPort Female (Black)
		Speakers	2 x 3.5 mm Audio Jack Female (Green) 2 x 3.5 mm Audio Jack Female (Pink)
	Remote Port Selector		1 x 2.5 mm Audio Jack Female (Black)
	Power		1 x DC Jack
	USB Hub		2 x USB 3.1 Gen 1 Type-A Female (Blue; 1 x front, 1 x rear)
Switches	Selected		3 x Pushbutton
LED	Audio		2 (Green)
	KVM		2 (Orange)
	USB		3 (Green)
	Mode of Operation		2 (Orange)
Emulation	KB / Mouse		USB
Video			4096 x 2160 @ 60 Hz
Scan Interval			1 – 99 seconds (default: 5 sec)
Power Consumption			DC12V:11.58W:97BTU/h <b>Note:</b> ♦ The measurement in Watts indicates the typical power consumption of the device with no external loading. ♦ The measurement in BTU/h indicates the power consumption of the device when it is fully loaded.
Environment	Operating Temp.		0–40°C
	Storage Temp.		-20–60°C
	Humidity		0–80% RH, Non-condensing

Function		CM1942
Physical Properties	Housing	Metal
	Weight	0.64 kg (1.41 lb)
	Dimensions (L x W x H)	26.00 x 7.18 x 4.25 cm (10.24 x 2.83 x 1.67 in)

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

## Hotkey Default Settings

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
Specific PC Port Monitor Re-detection	Disabled
Port Switching Keys	Enabled
N-Key Rollover Keyboard	Enabled
PC Operation Mode	Single PC Mode
Screen Resolution (Boundless Switching)	Disabled
Monitor Layout (Boundless Switching)	Disabled
Relative Mouse Mode	Enabled
Absolute Mouse Mode	Disabled
Boundless Switching	Disabled

## **ATEN Warranty Policy**

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The warranty policy may vary by product category and region of purchase. For details, please visit ATEN's official website, select your purchase counties/regions and then go to the Support Center, or contact your local ATEN sales representative for further assistance.



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