DVI Optical KVM Extender
CE680 / CE690
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 is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

KCC Statement

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RoHS

This product is RoHS compliant.

SJ/T 11364-2006

The following contains information that relates to China.

部件名称	有毒有害物质或元素					
	铅	汞	镉	六价铬	多溴联苯	多溴二苯醚
电器部件	●	○	○	○	○	○
机构部件	○	○	○	○	○	○

○: 表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T 11363-2006规定的限量要求之下。

●: 表示符合欧盟的豁免条款，但该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006的限量要求。

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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	86-10-5255-0110
Japan	81-3-5615-5811
Korea	82-2-467-6789
North America	1-888-999-ATEN ext 4988
United Kingdom	44-8-4481-58923

User Notice

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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 CE680 / CE690 package consists of:

- 1 CE680L or CE690L DVI Optical KVM Extender (Local Unit)
- 1 CE680R or CE690R DVI Optical KVM Extender (Remote Unit)
- 1 Custom KVM Cable Set (1.8m)
- 1 USB Cable (1.8m)
- 2 Power Adapters
- 1 Mounting Kit
- 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 CE680 / CE690 since this manual was published. Please visit our website to download the most up-to-date version of the manual.

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About this Manual

This User Manual is provided to help you get the most from your system. It covers all aspects of installation, configuration and operation. An overview of the information found in the manual is provided below.

Chapter 1, Introduction, introduces you to the CE680 / CE690 system. Its purpose, features and benefits are presented, and its front and back panel components are described.

Chapter 2, Hardware Setup, describes the steps that are necessary to quickly and safely set up your installation.

Chapter 3, Operation, explains the fundamental concepts involved in operating the CE680 / CE690.

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

Chapter 5, The Firmware Upgrade Utility, explains how to use this utility to upgrade the CE680 / CE690's firmware with the latest available versions.

An Appendix, provides specifications and other technical information regarding the CE680 / CE690.

Conventions

This manual uses the following conventions:

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

Product Information

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

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

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Chapter 1
Introduction

Overview

The CE680 / CE690 is a DVI Optical KVM Extender that overcomes the length restriction of standard DVI cables by using optical fiber to send high definition audio, video and control signals over long distance. It accepts audio-video stream from a local source and serializes the data to pass over a single 3.125 Gbps optical link (for resolutions up to 1920x1200 @60Hz, 24-bits).

It can also extend the keyboard/mouse remote control signals, as well as transfer RS-232 signals (up to 115kbps) in both directions, allowing you to connect serial devices, such as barcode scanners. A USB port on the local and remote unit rear panels lets you connect a USB touchscreen panel device, which can access a computer connected at the local site. In addition, the CE680 / CE690's touchscreen support lets you take advantage of multi-point devices, such as 10-point multi-touch displays, which can be useful when dealing with highly interactive applications.

The CE680 / CE690 allows access to a computer system from both local and remote consoles (USB keyboard, monitor, and mouse). Because it allows access to a computer system from either the local or remote console, it is perfect for use in any type of installation where you need to place the console where it is conveniently accessible, but you want the system equipment to reside in a safe location – away from the dust and dirt of the factory floor, or the harsh environmental influence of a construction site, for example.

Furthermore, the CE680 / CE690 takes advantage of fiber optic cable technology for connecting the local and remote units, providing easy and quick installation and long-range extension of DVI signals. It also has a built-in 8KV/ 15KV ESD protection feature.

Setup is as easy as can be – simply connect the computer system box; run the fiber optic cable up to 600 m / 20 km to the Remote Unit; and plug the remote console into the Remote Unit.

Features

- Allows access to a computer or KVM installation from the local/remote console
- Supports DVI-D interface and allows transmission of DVI single-link signals
- Superior video quality of up to 1920 x 1200 @ 60 Hz (24-bits) – get an excellent, crisp image on your screen over long distance transmissions (up to 600 m for CE680; up to 20 km for CE690)
- Dual console operation – control your system from both the local and remote USB keyboard, monitor, and mouse consoles
- Pushbutton operating mode selection – select whether to control your computer or KVM from the local console, with the press of a single button
- Touchscreen support – connect a generic touchscreen, including devices up to 10-point multi-touch, to accommodate highly interactive applications (no extra drivers needed)
- Easy to install – no software required – connecting cables to the devices is all it takes
- Uses one fiber optic cable to connect the local and remote units
- Uses compact, small form-factor hot-pluggable fiber optic modules
- HDCP compatible
- Supports standard resolutions from 640 x 480 to 1920 x 1200 @ 60Hz
- Supports popular wide screen formats
- Built-in 8KV/15KV ESD protection (Contact voltage 8KV; Air voltage 15KV)
- RS-232 serial port – connect to a serial terminal, or serial devices such as barcode scanners (Baud Rate 115200 bps)
- PC Wakeup support – use a pushbutton on a Remote Unit to wake a PC at the local site via RS-232
- Audio Enabled – supports stereo speakers and microphone
- Firmware upgradeable
- Rack mountable
- Hot pluggable

Note: The CE680 supports OM3 multi-mode fiber

Requirements

Consoles

- A DVI single link monitor capable of the highest resolution you will be using on any computer in the installation
- A USB keyboard
- A USB mouse
- Stereo microphone and stereo speakers (optional)
- A USB Touchscreen panel device (optional)

Computers

The following equipment must be installed on each computer that is to be connected to the system:

- A DVI port
- 1 USB port for the mouse and keyboard
- Microphone and speaker ports (optional)
- 1 USB port for the Touchscreen panel device (optional)

Cables

- For optimal signal integrity, and to simplify the layout, we strongly recommend that you use the high quality custom KVM Cable that is provided with this package
- Fiber optic cable (LC, single mode) to connect the Transmitter and Receiver CE680 / CE690 units

> **Note:** It is recommended that you use a Single Mode optical fiber cable that conforms to IEC 60793-2-50 B1.1 or ITU-T G.652.B specifications.

- If you wish to utilize the CE680 / CE690's high-end serial controller function, you need to purchase an appropriate RS-232 cable

Maximum Cable Distances

Connection	Distance
Computer to Local Unit (CE680L / CE690L)	5 m
Local Unit (CE680L / CE690L) to Remote Unit (CE680R / CE690R)	600 m (CE680) 20 km (CE690)
Remote Unit (CE680R / CE690R) to monitor	5 m

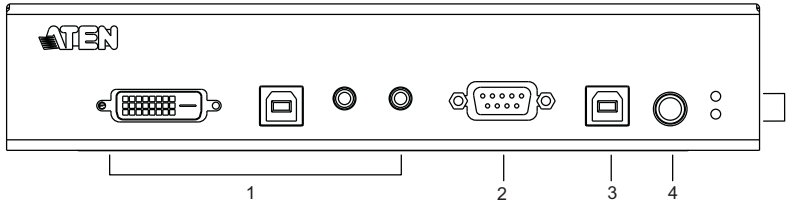
Operating Systems

Supported operating systems are shown in the table, below:

OS		Version
Windows		2000, 2003, 2008, XP, Vista, 7
Linux	RedHat	9.0 and higher
	SuSE	10 / 11.1 and higher
	Debian	3.1 / 4.0
	Ubuntu	7.04 / 7.10
UNIX	FreeBSD	5.5 / 6.1 / 6.2
Novell	Netware	6.0 and higher

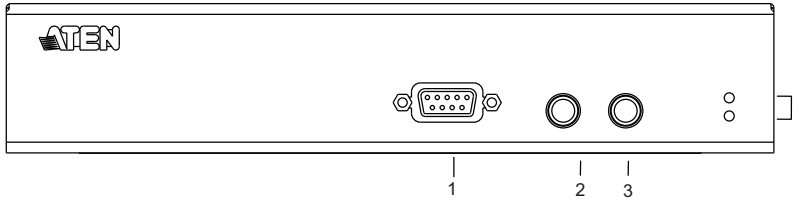
Components

CE680L / CE690L (Local Unit) Front View



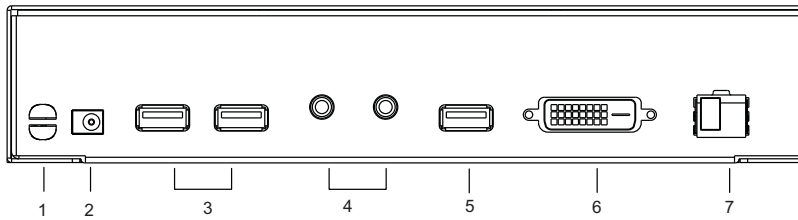
No.	Component	Description
1	KVM Port	Use the Custom KVM cable supplied with this unit: ◆ **DVI Input port:** The DVI connector of the provided Custom KVM cable that connects to your computer plugs into this port. ◆ **USB Port (for Keyboard / Mouse)**: The USB Type B connector of the provided Custom KVM cable that connects to your computer plugs into this port. ◆ **Audio Ports (Speakers / Mic)**: These mini stereo ports are for the speakers (green) and microphone (pink) connectors of the provided Custom KVM cable that connects to your computer.
2	RS-232 Serial Port	Connect the RS-232 cable from your computer into this port.
3	USB Type B Port	Connect the USB cable from your computer to this port if using a touchscreen panel device.
4	Operation Mode Pushbutton	The *Auto / Local* pushbutton toggles between the Operating Modes available from the Local Console. ◆ **Auto** – both the Local and Remote Consoles can control the system. ◆ **Local** – only the Local Console can control the system(s). The default operating mode is *Auto*. You can also use this button to enable the Firmware Upgrade Mode. Reset the power to proceed with the firmware upgrade. See page 25 for full details.
5	LEDs	The CE680L / CE690L has two LEDs to indicate the operating status. See page 17 for full details.

CE680R / CE690R (Remote Unit) Front View



No.	Component	Description
1	RS-232 Serial Port	RS-232 serial devices – such as barcode scanners – plug into this port.
2	Wake Up PC Pushbutton	Press the *Wakeup PC* pushbutton to wake the computer at the local site through the RS-232 port. See page 18 for full details.
3	Operation Mode Pushbutton	The *Auto / Remote* pushbutton toggles between the Operating Modes available from the Remote Console. ◆ **Auto** – both the Local and Remote Consoles can control the system. ◆ **Remote** – only the Remote Console can control the system(s). The default operating mode is *Auto*. You can also use this button to turn on the firmware upgrade mode. Reset the power to proceed with the firmware upgrade. See page 25 for full details.
4	LEDs	The CE680R / CE690R has two LEDs to indicate operating status. See page 17 for full details.

CE680 / CE690 (Local / Remote Unit) Rear View



No.	Component	Description
1	Cable Tie Slot	If you want to use a cable tie to gather the cables together, you can run it through this slot to attach it to the unit.
2	Power Jack	Connect the power adapter into this jack.
3	USB Ports (for Keyboard / Mouse)	The USB cable for your keyboard / mouse plugs in here.
4	Audio Ports (Speakers / Mic)	These mini stereo ports are for the speakers (green) and microphone (pink).
5	USB Port (for Touch Panel)	Connect a USB touchscreen panel device to this port. Note: Only generic touch panel devices (no driver installation required) are supported by this port.
6	DVI Output port	Connect a compatible monitor to this DVI serial port.
7	Optical In/Out Port	The fiber optic cable that connects the Local and Remote units plugs in here. The optical fiber modules are color-coded accordingly: ◆ CE680L – Blue ◆ CE680R – Yellow ◆ CE690L – Purple ◆ CE690R – White

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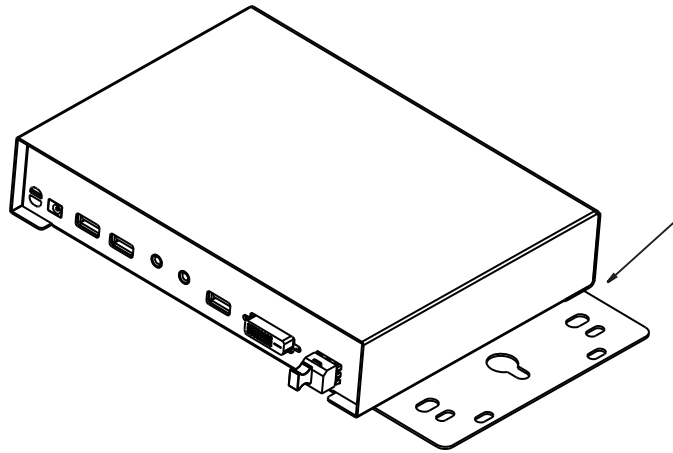
Chapter 2
Hardware Setup

1. Important safety information regarding the placement of this device is provided on page 33. Please review it before proceeding.
2. Make sure that the power to all devices connected to the installation is turned off. You must unplug the power cords of any computers that have the Keyboard Power On function.

Mounting

For convenience and flexibility, the CE680 / CE690 can be mounted on system racks. To rack mount a unit do the following:

1. Using the screws provided in the Mounting Kit, screw the mounting bracket into the bottom panel of the unit:



2. Screw the bracket into any convenient location on the rack.

Note: These screws are not provided. We recommend that you use M5 x 12 Phillips Type I cross, recessed type screws.

Installation

Setting up the CE680 / CE690 DVI Optical KVM Extender system is simply a matter of plugging in the cables. Make sure that all the equipment to be connected up is powered off. Refer to the installation diagrams (the numbers in the diagrams correspond to the steps), and do the following:

KVM Function

Steps 1–6 are the primary steps for installing your CE680 / CE690, and utilizing the basic KVM functions.

1. Using the Custom KVM cable supplied with this unit, plug the connectors into their appropriate ports on the front panel of the Local Unit (CE680L / CE690L).
2. Plug the connectors on the other end of the Custom KVM cable into the appropriate ports on the local computer. Each connector is marked with an appropriate icon to indicate which it is.

   Note: If you are combining the CE680 / CE690 with a KVM switch, the other end of the DVI KVM cable plugs into the appropriate ports on the KVM switch.

3. Using a Fiber Optic cable (LC, Single Mode), connect the Local and Remote units via the CE680L (Brown) / CE680R (Yellow) / CE690L (Purple) / CE690R (White) **Optical In/Out** ports.
4. Connect the local console devices (mouse, keyboard, monitor, speakers, microphone) into the appropriate ports on the rear panel of the CE680L / CE690L.
5. Connect the remote console devices (mouse, keyboard, monitor, speakers, microphone) into the appropriate ports on the rear panel of the CE680R / CE690R.
6. Plug each of the power adapters (supplied with this package) to a power source; plug the other ends into the CE680L / CE690L and CE680R / CE690R **Power Jack**.

RS-232 Function

Steps 7–8 are for incorporating a serial terminal or other serial devices into your installation. Do the following steps:

7. (Optional) For control of serial devices and/or to use Wake Up PC feature (see page 18), connect a local computer to the **RS-232 Serial** port on the local unit.
8. (Optional) Connect a Hardware/Software Controller to the **RS-232 Serial** port on the remote unit.

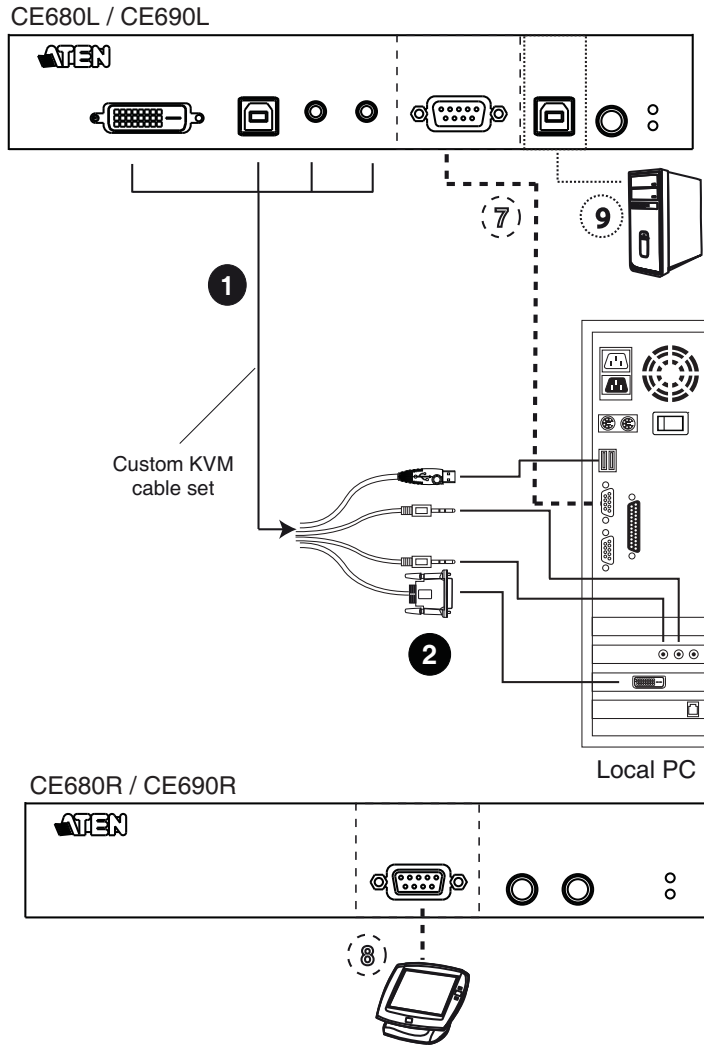
Touchscreen Panel Function

Steps 9–10 are for connecting/managing a touchscreen panel to your installation. Do the following steps:

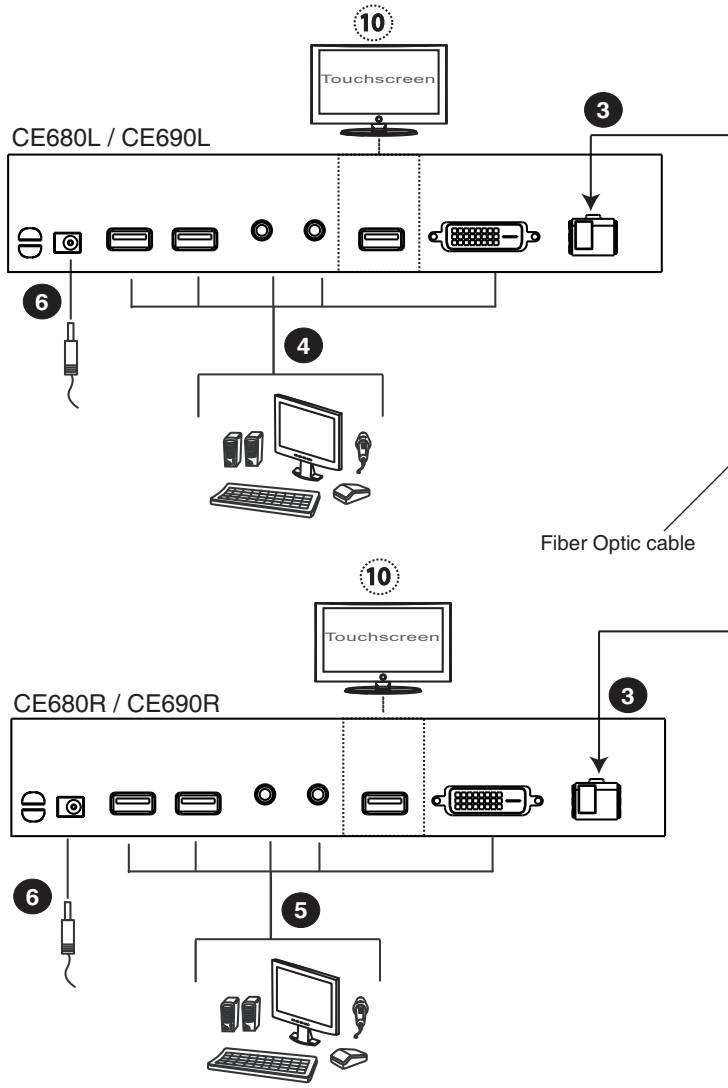
9. (Optional) Connect a computer to the **USB Type B** port on the front panel of the CE680L / CE690L for touchscreen panel control.
10. (Optional) Connect your touchscreen panel device(s) to the **USB Type A** ports on the rear panels of the CE680L / CE690L and CE680R / CE690R.

Installation Diagrams

Front View



Rear View



Note: The serial port on the CE680L / CE690L connects to the computer; the serial port on the CE680R / CE690R connects to a serial device (optional).

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Chapter 3
Operation

Manual Operation

You can conveniently operate the CE680 / CE690 by pressing the pushbuttons located on the unit's front panel.

Select an Operating Mode (page 16) by pressing the **Operation Mode** Pushbutton. The Remote Unit also has a pushbutton for waking up a PC on the local site (page 18). The LEDs on the front panel indicate the operating status of the device (page 19).

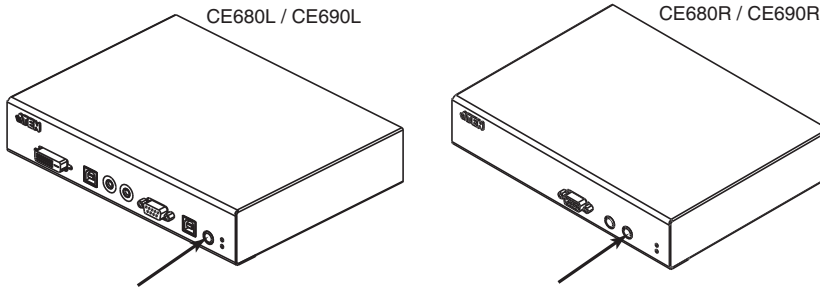
Operating Modes

The CE680 / CE690 DVI Optical KVM Extender has three operating modes – **Local, Auto**, and **Remote**, as described in the table below:

Mode	Description
Local	Only the local console has KVM access. The remote console's keyboard and mouse input is disabled.
Auto	Both the local and remote consoles can have KVM access, but not at the same time. The console without access has to wait until the console with access stops inputting data before it can gain access. The default operating mode is *Auto.*
Remote	Only the remote console has KVM access. Remote mode can only occur when the CE680L / CE690L is set to *Auto* and the local console is idle.

Mode Selection

The *Operating Mode Selection* switch, located on each unit's front panel, controls the operating mode of the DVI Optical KVM Extender system. Pressing the switch toggles the operating mode as follows:



Switch	Action
Local (CE680L / CE690L) Operation Mode Pushbutton	Toggles between *Auto* and *Local*. In Local Mode, only the local console has keyboard and mouse access and control of the computer (or computers via KVM switch).
Remote (CE680R / CE690R) Operation Mode Pushbutton	Toggles between *Auto* and *Remote*. In Remote Mode, only the remote console has keyboard and mouse access and control of the computer (or computers via KVM switch).

When the system is in **Local** Mode, the Remote unit's selection switch is inactive. Pressing it has no effect – the Remote operator cannot take over control. The Remote selection switch only becomes active after the Local selection switch is pressed to put the system back into Auto Mode.

Likewise, if the system is in **Remote** Mode, the Local unit's selection switch is inactive – the Local operator cannot take over control. The Local selection switch only becomes active after the Remote selection switch is pressed to put the system back into Auto Mode.

LED Display

The CE680 / CE690 Local and Remote units have front panel LEDs to indicate their operating status, as shown in the tables, below:

CE680L / CE690L (Local Unit)

LED	Indication
Local (Green)	Lights when the local console is active (the Remote LED is off). ◆ Lights also when in Hotkey Setting Mode (see page 19). The remote console's keyboard and mouse are disabled. ◆ If no Hotkey is detected after 5 seconds, device goes into Auto operating mode and LED (steady) turns off. Turns off when the remote console is active (the Remote LED turns on). Flashes when in Auto operating mode.
Remote (Green)	Lights when the remote console is active (the Local LED is off). Turns off when the local console is active (the Local LED turns on). Flashes when in Auto operating mode.

CE680R / CE690R (Remote Unit)

LED	Indication
Link (Green)	Lights to indicate that the connection to the Local unit is active. Flashes when there is a problem with the connection to the Local unit and the "Remote LED" is off.
Remote (Green)	Lights to indicate that the remote console is active. Turns off when the local console is active. Flashes when in Auto operating mode.

Firmware Upgrade

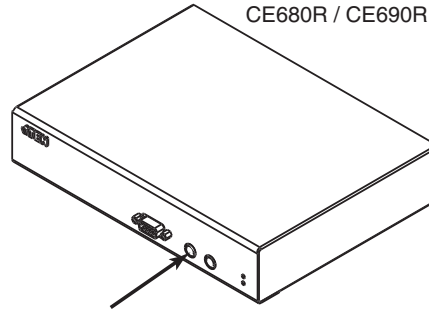
Refer to *The Firmware Upgrade Utility* in Chapter 5 for a step-by-step guide on upgrading the firmware. In summary, do the following steps:

1. Push and hold the *Operation Mode* pushbutton and power on the Local or Remote unit to enter the firmware upgrade mode.
2. Connect a computer to the RS-232 port of the local/remote unit.
3. Use ATEN Firmware upgrade utility to do the firmware upgrade.

Note: Do these steps for the Local and Remote units individually (*Single Unit Mode*, page 26). To upgrade the units together, see *Local and Remote Mode*, page 29.

Wake Up PC

When at the remote console's location and you want to wake a computer on the local site, use the *Wakeup PC* pushbutton on the front panel of the CE680R / CE690R.



Make sure to use an RS-232 cable to connect the local computer to the CE680L / CE690L in order for this command to work.

Note: The PC's BIOS should support RS-232 wake up function.

Hotkey Setting Mode

The administrator and users can use hotkey combinations to configure a number of the DVI Optical KVM Extender's working environment parameters. All Hotkey operations begin by invoking Hotkey Setting Mode (HSM).

Invoking HSM

To invoke HSM (CE680L / CE690L only), do the following:

Control and F12 Keys

1. Hold down the **Ctrl** key;
2. Press and release the **F12** key;
3. Release the **Ctrl** key:
   [Ctrl] + [F12]

Number Lock and Minus Keys

1. Hold down the **Num Lock** key;
2. Press and release the **minus** key;
3. Release the **Num Lock** key:
   [Num Lock] + [-]

Note: For more details on these key combinations to invoke HSM, see *Alternate HSM Invocation Keys*, page 20.

When Hotkey Mode 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.
- A Command Line appears on the monitor screen. The command line prompt is the word *Hotkey:* in yellow text on a blue background. Hotkey information that you key in displays on the command line.
- 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 **[Esc]** or **[Spacebar]**.

Alternate HSM Invocation Keys

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

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

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

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

Note: This procedure is a toggle between the two methods. To revert back to the original [Ctrl] [F12] method, invoke HSM, then press and release the **H** key again.

Keyboard Operating Platform

The CE680 / CE690's default configuration is for a PC Compatible keyboard operating platform. If you have a Mac or a Sun on your installation, you can change the keyboard operating platform as follows:

1. Invoke HSM (see page 19).
2. Press and release the appropriate Function key (see table).

Key	Operation
[F1]	Sets the PC compatible keyboard operating platform for the port that currently has the KVM focus.
[F2]	Enables Mac keyboard emulation.
[F3]	Enables Sun keyboard emulation.

Note: 1. The brackets indicate the keys you should press. Simply press the indicated keys – do not type the brackets.

2. After completing a setting, you automatically exit HSM.

Hotkey Summary Table

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

Key	Function
[H]	Toggles between the default ([Ctrl] [F12]) and alternate ([Num Lock] [–]) Hotkey invocation keys.
[F1]	Sets the PC compatible keyboard operating platform for the port that currently has the KVM focus.
[F2]	Sets the Mac compatible keyboard operating platform for the port that currently has the KVM focus.
[F3]	Sets the Sun keyboard operating platform for the port that currently has the KVM focus.
[F4]	Print out the KVM's current settings and quit the Setting mode.
[Esc] or [Spacebar]	Exit HSM.

Note: The brackets indicate the keys you should press. Simply press the indicated keys – do not type the brackets.

Chapter 4
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]	L Alt / Option
[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 5
The Firmware Upgrade Utility

The Windows-based Firmware Upgrade Utility (using the file name CE680_CE690_Vx.x.xxx.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. New firmware upgrade packages are posted on our web site as new firmware revisions become available. Check the web site regularly to find the latest packages and information relating to them:

```
http://www.aten.com
```

Upgrade Methods

You can upgrade the CE680 / CE690 firmware using the following methods:

- **Single Unit Mode** – Upgrade the CE680L / CE690L (Local Unit) or CE680R / CE690R (Remote Unit) individually
- **Local and Remote Mode** – Upgrade the Local (CE680L / CE690L) and Remote (CE680R / CE690R) units at the same time

These Firmware Upgrade modes are described in the proceeding sections.

Before You Begin

Using a computer connected to the CE680L / CE690L or CE680R / CE690R, go to our Internet support site and choose the model name of your device (CE680 / CE690) to get a list of available Firmware Upgrade Packages.

Choose the Firmware Upgrade Package you want to install (usually the most recent), and download it to your computer.

Single Unit Mode

To prepare for the Firmware Upgrade, do the following:

1. Turn off the CE680L / CE690L or CE680R / CE690R and unplug the power adapter.
2. Push and hold the **Operation Mode** pushbutton on the CE680L / CE690L or CE680R / CE690R front panel. This enables the Local/Remote Unit to operate in Firmware Upgrade Mode when it is powered on again.
3. Plug in the power adapter and power on the CE680L / CE690L or CE680R / CE690R. Note that the LEDs start flashing.
4. Use a Serial RS-232 cable to connect a COM port on your computer to the CE680L / CE690L or CE680R / CE690R **RS-232** port.

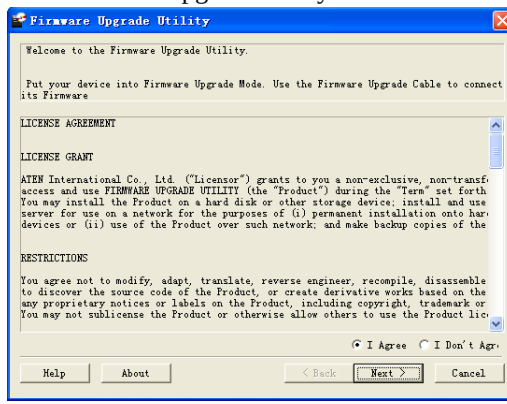
Note: The Serial RS-232 cable is not provided in the package.

Starting the Upgrade

To upgrade your firmware:

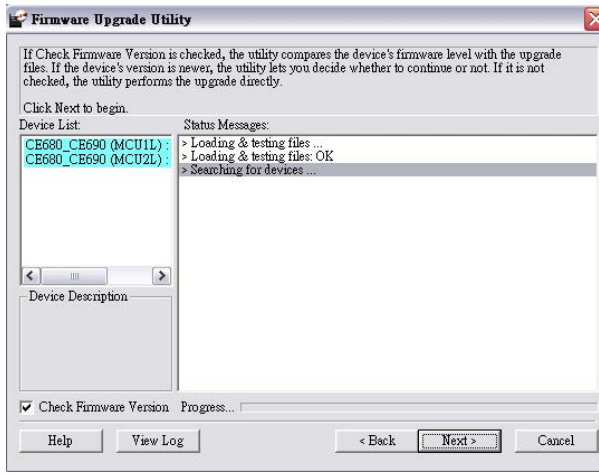
1. Run the downloaded Firmware Upgrade Package file (CE680_CE690_Vx.x.xxx.exe)) – either by double clicking the file icon, or by opening a command line and entering the full path to it.

   The Firmware Upgrade Utility Welcome screen appears:



Note: The screens used in this section show the Local Unit (CE680L) and are for reference only. The wording and layout of the actual screens put up by the Firmware Upgrade Utility may vary slightly from these examples.

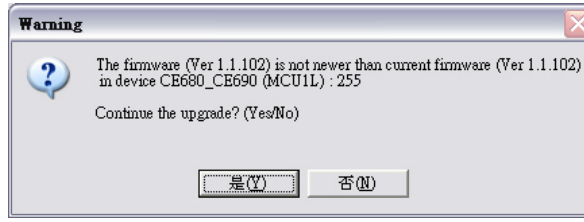
2. Read and agree to the **License Agreement** (enable the **I Agree** radio button).
3. Click **Next** to continue. The Firmware Upgrade Utility main screen appears:



The Utility inspects your installation. The Local/Remote Unit is listed in the **Device List** panel and automatically selected for upgrade.

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

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



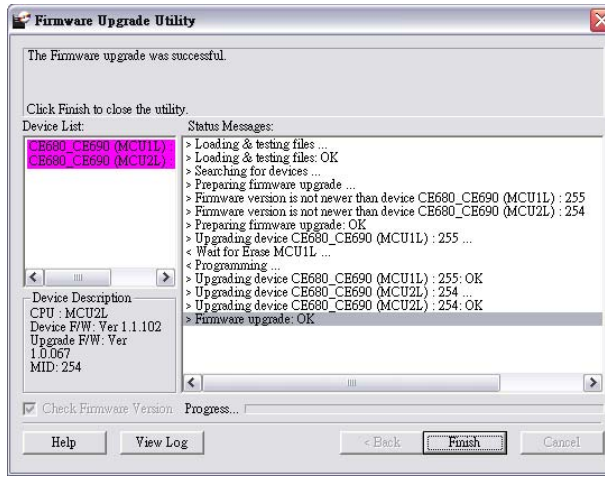
   If you did not enable **Check Firmware Version**, the Utility installs the upgrade files without checking whether or not they are a higher level.

As the upgrade proceeds, status messages appear in the **Status Messages** panel, and the progress toward completion is shown on the **Progress...** bar. The highlight / color of the device name in the **Device List** panel also changes as follows:

- Green - the device is being prepared for upgrade
- Blue - firmware upgrade is in progress
- Magenta - firmware upgrade is successful

Upgrade Succeeded

After the upgrade has completed, a screen appears to inform you that the procedure was successful:

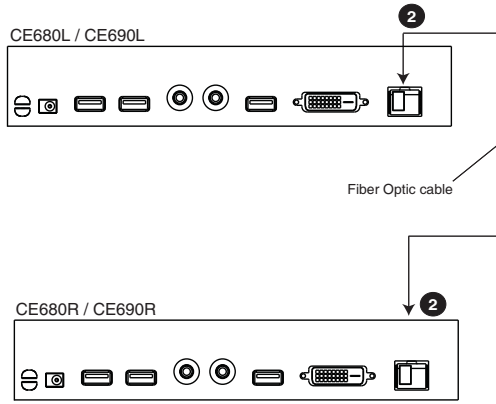


Click **Finish** to close the Firmware Upgrade Utility.

Local and Remote Mode

To prepare for the Firmware Upgrade of both Local and Remote units, do the following:

1. Turn off both CE680L / CE690L and CE680R / CE690R units and unplug their power adapters.
2. Make sure both units are connected using a Fiber Optic cable via the CE680L / CE690L's **Optical In/Out** ports.



3. Plug in the power adapter and power on the CE680R / CE690R.
4. Push and hold the **Operation Mode** pushbutton on the CE680L / CE690L front panel. This enables the Local / Remote Unit to operate in Firmware Upgrade Mode. Note that the LEDs on both Local and Remote units start flashing.
5. Use a Serial RS-232 cable to connect a COM port on your computer to the CE680L / CE690L's RS-232 port.

Note: The Serial RS-232 cable is not provided in the package.

Starting the Upgrade

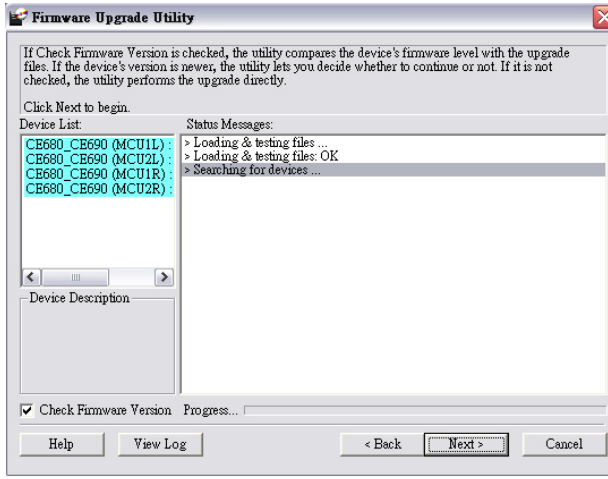
To upgrade your firmware:

1. Run the downloaded Firmware Upgrade Package file (CE680_CE690_Vx.x.xxx.exe)) – 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.

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

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



   The Utility inspects your installation. The Local and Remote Units are listed in the **Device List** panel and automatically selected for upgrade.

Note: 1. You can select either the Local or Remote Unit if you want to upgrade the devices individually, or select both devices to upgrade them together.

2. The screens used in this section show the CE680L / CE680R steps and 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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4. Click **Next** to perform the upgrade.

(Continues on next page.)

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**.

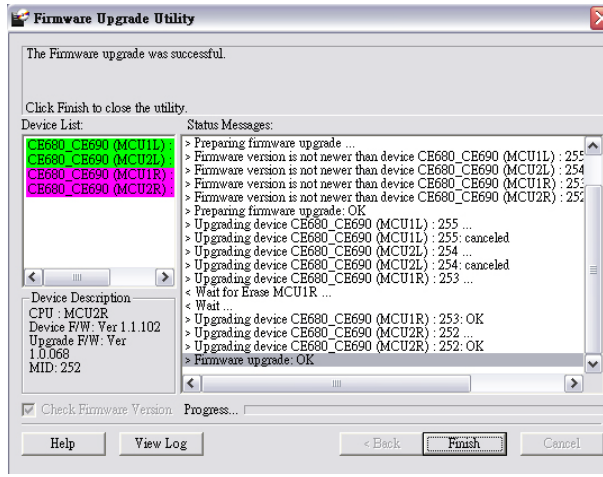
If you did not enable **Check Firmware Version**, the Utility installs the upgrade files without checking whether or not they are a higher level.

As the upgrade proceeds, status messages appear in the **Status Messages** panel, and the progress toward completion is shown on the **Progress...** bar. The highlight / color of the device name in the **Device List** panel also changes as follows:

- Green - the device is being prepared for upgrade
- Blue - firmware upgrade is in progress
- Magenta - firmware upgrade is successful

Upgrade Succeeded

After the upgrade has completed, a screen appears to inform you that the procedure was successful:



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

Upgrade Failed

For the Single Unit upgrade mode, if the *Upgrade Succeeded* screen does not appear, then the upgrade failed to complete successfully. You should repeat the upgrade procedure from the beginning.

For the Local and Remote Unit upgrade mode (upgrading both units at the same time), if the CE680L / CE690L upgrade failed, switch to Single Unit Mode.

Appendix

Safety Instructions

General

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

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

Rack Mounting

- Before working on the rack, make sure that the stabilizers are secured to the rack, extended to the floor, and that the full weight of the rack rests on the floor. Install front and side stabilizers on a single rack or front stabilizers for joined multiple racks before working on the rack.
- Always load the rack from the bottom up, and load the heaviest item in the rack first.
- Make sure that the rack is level and stable before extending a device from the rack.
- Use caution when pressing the device rail release latches and sliding a device into or out of a rack; the slide rails can pinch your fingers.
- After a device is inserted into the rack, carefully extend the rail into a locking position, and then slide the device into the rack.
- Do not overload the AC supply branch circuit that provides power to the rack. The total rack load should not exceed 80 percent of the branch circuit rating.
- Make sure that all equipment used on the rack – including power strips and other electrical connectors – is properly grounded.
- Ensure that proper airflow is provided to devices in the rack.
- Ensure that the operating ambient temperature of the rack environment does not exceed the maximum ambient temperature specified for the equipment by the manufacturer.
- Do not step on or stand on any device when servicing other devices in a rack.

Technical Support

International

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

North America

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

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			CE680L / CE690L	CE680R / CE690R
Connectors	KVM Ports	Video	1 x DVI-D Female (White)	N/A
		Speakers	1 x Mini Stereo Jack Female (Green)	N/A
		Mic.	1 x Mini Stereo Jack Female (Pink)	N/A
		USB (Keyboard / Mouse)	1 x USB Type B Female (White)	N/A
		USB (Touchscreen panel)	1 x USB Type B Female (White)	N/A
	Console Ports	Keyboard	1 x USB Type A Female (White)	
		Video	1 x DVI-D Female (White)	
		Mouse	1 x USB Type A Female (White)	
		Speakers	1 x Mini Stereo Jack Female (Green)	
		Mic.	1 x Mini Stereo Jack Female (Pink)	
		USB (Touchscreen panel)	1 x USB Type A Female (White)	
	RS-232		1 x DB-9 F (Black)	1 x DB-9 M (Black)
	Power		1 x DC Jack (Black)	
	Optical In/Out		1 x bi-directional SFP (LC)	
LEDs	Local		1 (Green)	N/A
	Remote		1 (Green)	1 (Green)
	Link		N/A	1 (Green)
Switches	Operation Mode Selection		1 x Pushbutton	
	Wakeup PC		N/A	1 x Pushbutton
Emulation	Keyboard / Mouse / Touchscreen panel		USB / USB / USB	

Function		CE680L / CE690L	CE680R / CE690R
Fiber Optics	Operating Distance	600 m (CE680) / 20 km (CE690) with Single Mode (SM) fiber	
	Wavelength	1310 / 1550 nm for SM	
	Data Rate	Single fiber: 1920 x 1200 @60 Hz (24-bits; 3.125G bps)	
Power Consumption		DC5.3V, 10.2W	DC5.3V, 9.0W
Environment	Operating Temp.	0–50ºC	
	Storage Temp	-20–60ºC	
	Humidity	0–80% RH, Non-condensing	
Physical Properties	Housing	Metal	
	Weight	1.10 kg	1.08 kg
	Dimensions (L x W x H)	21.50 x 16.29 x 4.18 cm	

Note: 1. Operating distance is approximate. A typical maximum distance may vary depending on factors such as fiber type, bandwidth, connector splicing, losses, modal or chromatic dispersion, environmental factors, and kinks.

2. It is recommended that you use a Single Mode optical fiber cable that conforms to IEC 60793-2-50 B1.1 or ITU-T G.652.B specifications.

Limited Warranty

IN NO EVENT SHALL THE DIRECT VENDOR'S LIABILITY EXCEED THE PRICE PAID FOR THE PRODUCT FROM DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE PRODUCT, DISK, OR ITS DOCUMENTATION.

The direct vendor makes no warranty or representation, expressed, implied, or statutory with respect to the contents or use of this documentation, and especially disclaims its quality, performance, merchantability, or fitness for any particular purpose.

The direct vendor also reserves the right to revise or update the device or documentation without obligation to notify any individual or entity of such revisions, or update. For further inquiries, please contact your direct vendor.