ALTUSEN™
Enterprise KVM Solutions by ATEN

Matrix Plus™
MP0101
User Manual

www.aten.com

FCC Information

This is an FCC 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.

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.

RoHS

This product is RoHS compliant.

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.

Safety Instructions

General

- Read all of these instructions. Save them for future reference.
- Follow all warnings and instructions marked on the device.
- Do not place the device on any unstable surface (cart, stand, table, etc.). If the device falls, serious damage will result.
- Do not use the device near water.
- Do not place the device near, or over, radiators or heat registers.
- The device cabinet is provided with slots and openings to allow for adequate ventilation. To ensure reliable operation, and to protect against overheating, these openings must never be blocked or covered.
- The device should never be placed on a soft surface (bed, sofa, rug, etc.) as this will block its ventilation openings. Likewise, the device should not be placed in a built in enclosure unless adequate ventilation has been provided.
- Never spill liquid of any kind on the device.
- Unplug the device from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
- The device should be operated from the type of power source indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- The device is 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 uninterruptible power supply (UPS).

- Position system cables and power cables carefully; Be sure that nothing rests on any cables.
- When connecting or disconnecting power to hot pluggable power supplies, observe the following guidelines:
- Install the power supply before connecting the power cable to the power supply.
- Unplug the power cable before removing the power supply.
- If the system has multiple sources of power, disconnect power from the system by unplugging all power cables from the power supplies.
- 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.
- Ensure that proper airflow is provided to devices in the rack.
- Do not step on or stand on any device when servicing other devices in a rack.

Package Contents

The MP0101 package consists of an MP0101M master module, and optional modules that connect to it. Depending on the modules you purchased, your package will contain one or more of the following components:

Master Module (MP0101M):

- 1 Upgrade Cable
- 1 Power Adapter
- 1 User Manual*
- 1 Quick Start Guide
- 1 Registration Card

Console Modules (MP0101P; MP0101U):

- 1 Custom KVM Cable Set
- 1 Upgrade Cable
- 1 Power Adapter
- 1 User Manual*
- 1 Quick Start Guide
- 1 Registration Card

KVM Adapter Cables (MP0120; MP0130; MP0131):

- 1 Mounting bracket

Check to make sure that all of the components are present and in good order. If anything is missing, or was damaged in shipping, contact your dealer.

Read this manual thoroughly and follow the installation and operation procedures carefully to prevent any damage to the switch or to any other devices on the MP0101 installation.

***** Features may have been added to the MP0101 since this manual was printed. Please visit our website to download the latest version of the manual.

Manual Part No. PAPE-0269-1AXG
Printing Date: 10/2006

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About This Manual

This User Manual is provided to help you get the most from your CC1000 system. It covers all aspects of installation, configuration and operation. An overview of the information found in the manual is provided below.

Overview

Chapter 1, Introduction, introduces you to the MP0101 System. Its purpose, features and benefits are presented, and its front and back panel components are described.

Chapter 2, Installation, takes you through the procedures for installing the MP0101 both as a chained component of a Matrix KVM Switch setup, and in an independent, standalone, chained configuration.

Chapter 3, Basic Operation, explains the fundamental concepts involved in MP0101 operations.

Chapter 4, OSD Operation, provides detailed information for operating the MP0101 in an independent configuration using the MP0101's intuitive, mouse-driven OSD (On Screen Display) menus.

Chapter 5, Hotkey Operation, explains the concepts and procedures used in controlling the MP0101 in an independent configuration from the keyboard.

Chapter 6, Keyboard Emulation, provides tables that list the PC to Mac and PC to Sun keyboard emulation mappings.

Chapter 7, The Firmware Upgrade Utility, explains how to upgrade the MP0101's firmware with the latest available versions.

An Appendix, provides specifications and other technical information regarding the MP0101.

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.

ALTUSEN Information

Technical Support

North America Technical Phone Support	Registered ALTUSEN product owners are entitled to telephone technical support. Call the ALTUSEN Technical Support Center: 949-453-8885.
International Technical Phone Support	1. Contact your local dealer. 2. Call the ALTUSEN Technical Support Center:(886-2) 8692-6959.
Email Support	Email your questions and concerns to: support@aten.com
Online Support ◆ Troubleshooting ◆ Documentation ◆ Software Updates	Online troubleshooting that describes the most commonly encountered problems and offers possible solutions to them; online documentation (including electronically available manuals); and the latest drivers and firmware for your product are available at the ALTUSEN website: **http://www.aten.com**

Getting Help

For additional help, advice, and information, ALTUSEN provides several support options. If you need to contact ALTUSEN technical support with a problem, 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

Product Information

For information about all of ALTUSEN's products and how they can help you connect without limits, visit ALTUSEN on the web or contact an ALTUSEN Authorized Reseller.

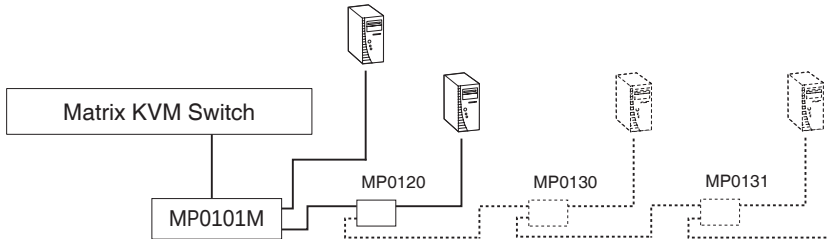
- In the United States of America, call: 866-ALTUSEN (258-8736)
- In Canada and South America, call: 949-453-8885
- In all other locations, call: 886-2-8692-6789
- Visit ALTUSEN on the web at http://www.aten.com for a list of locations and telephone numbers

Chapter 1
Introduction

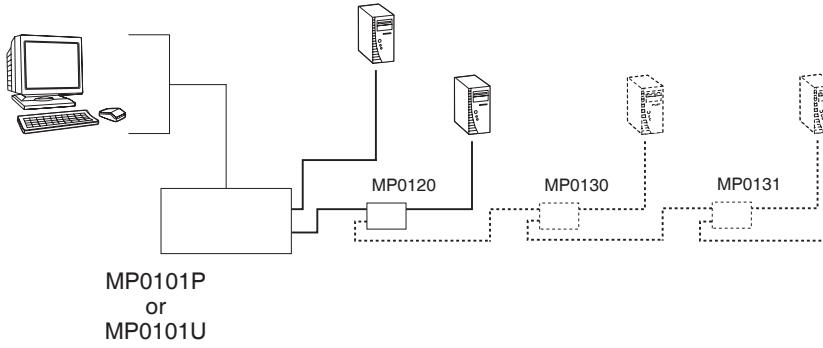
Overview

The MP0101 Matrix Plus system features a modular design that gives IT administrators a way of adding to their KVM switch installations on a one server at a time basis. With the MP0101, they can expand at their own pace, rather than having to purchase an entire KVM switch when it comes time to add a server or two.

The MP0101 can be configured in two ways: 1) as part of a Matrix KVM Switch installation; and 2) as an independent, standalone chain. When used with a Matrix KVM Switch installation, a *Master Module* (MP0101M) acts as a bridge between the switch and a KVM Adapter Cable. The KVM Adapter Cable then connects to a server's keyboard, video, and mouse ports. One computer can connect to the Master Module, and up to 15 additional KVM Adapter Cables can be daisy chained from the first one, so that up to 16 servers can be controlled from a single Matrix KVM Switch port.



With the independent, standalone configuration, a *Console Module* is used to bridge between a keyboard/video/mouse console and the KVM Adapter Cable. Up to 61 additional KVM Adapter Cables can be daisy chained from the first one, so that up to 62 servers can be controlled from a single KVM console.



The combination of Console and KVM Adapter Cables allows any combination of PS/2 and USB consoles to control any combination of PS/2, USB, or Sun computers. The use of Cat 5 cable and RJ-45 connectors, combined with Auto Signal Compensation (ASC), allow signals to travel up to 500 feet (150 meters) away and still maintain high video resolution, eliminating the need for KVM extenders.

Setup is fast and easy; plugging cables into their appropriate ports is all that is entailed. Access to any computer is easily accomplished either by means of a powerful menu driven OSD (On Screen Display) system, or by entering *Hotkey* combinations from the keyboard. A convenient *Auto Scan* feature also permits automatic scanning and monitoring of the activities of all computers running on the installation one by one.

Features

MP0101M Master Module

- Chain down from any available Matrix KVM Switch computer port - supports a chain of up to 16 KVM Adapter Cables plus a single USB PC connection
- MP0101M Master Module can be up to 150 m away from the Matrix KVM Switch
- Hot pluggable; add or remove any components (modules and computers) without having to power off the Matrix KVM Switch
- Firmware can be upgraded “live” without taking down any components on the chain
- *Chain Alive* function supports power from both the attached computers and the chain bus - ensuring that the entire chain functions even if one of the computers on the chain loses power
- Keyboard and mouse emulation - computers boot even when the console focus is elsewhere
- Superior video quality - supports resolutions of up to 1280 x 1024 @ 60 Hz; DDC2B

Console Modules

- Supports a daisy chain of up to 62 KVM Adapter Cables plus attached computers
- Allows a single KVM console to control a local computer and up to 62 additional computers by means of the daisy chained KVM Adapter Cables
- Console conversion allows either the USB or PS/2 Console Module to control any type of computer - PC, Mac, or Sun
- Built in ASIC for greater reliability and compatibility
- Category 5 UTP Ethernet cable to chain to the KVM Adapter Cables
- High resolution video; up to 1280 x 1024 @ 60 Hz; 150m (max.)
- Automatic gain control

KVM Adapter Cables

- Auto Signal Compensation (ASC), no DIP switch setting needed for the different distances of up to 150 meters between the Console Module and the KVM Adapter Cable
- *Chain Alive* function supports power from both the attached computers and the chain bus - ensuring that the entire chain functions even if one of the computers on the chain loses power or is turned off
- Hot plug any computer or any KVM Module
- Firmware can be upgraded “live” without taking down any of the components
- Keyboard and mouse emulation - computers boot even when the console focus is elsewhere
- Multiplatform support: KVM Adapter Cables allow PC, Mac and Sun computers to coexist on the same chain
- The KVM Adapter Cable chain sequence positions are automatically detected and displayed on a two digit Station ID LED - no DIP switch setting necessary
- Cable length adjustment slides for a neat and tidy installation

Requirements

Console

The following equipment must be used for each console:

- A VGA, SVGA, or Multisync monitor capable of the highest resolution that you will be using on any computer in the installation.
- Either a PS/2 or a USB keyboard and mouse.

Computers

The following equipment must be installed on each computer:

- An HDB-15 video port or a Sun 13W3 video port (for legacy Sun systems).
- Either a PS/2 style (6 pin mini-DIN) mouse port and PS/2 style keyboard port; or USB ports (for a USB keyboard and USB mouse); or, for legacy Sun systems, a Sun style keyboard port (8 pin mini-DIN).

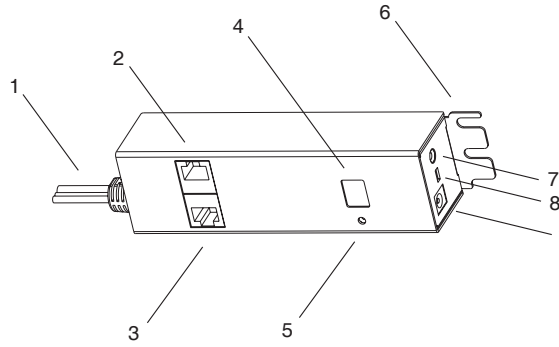
Note: The computer that attaches to the MP0101M (Master Module), must have a USB port for the attachment.

Cables and Modules

The following cables and modules are required for use with the MP0101 Matrix Plus KVM system:

Function		Cable
Matrix KVM Switch to MP0101M (Master Module)		Cat 5 Ethernet cable
Console Module to KVM Adapter Cable		
KVM Adapter Cable	For PS/2 Computers	MP0120
	For Sun Legacy Computers	MP0130
	For USB Computers (PC, Mac, and Sun)	MP0131

MP0101M (Master Module) Components



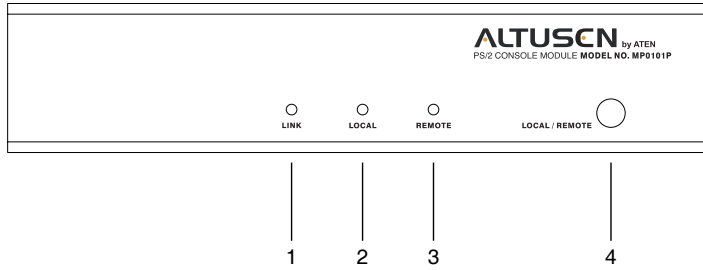
No.	Component	Description
1	KVM Cables	These cables connect to the video and USB ports of the computer attached to the MP0101M.
2	Chain In Port	The Cat 5 cable that connects the unit to a port on the Matrix KVM Switch plugs in here.
3	Chain Out Port	The Cat 5 cable that connects the unit to the first KVM Adapter Cable plugs in here.
4	Station ID LED	The MP0101M's Station ID displays here. As the first station on the chain of modules, it has a Station ID of **01**.
5	Link LED	Flashes to indicate that data transmission is taking place.
6	Mounting Bracket	You can use this bracket to attach the MP0101M to a system rack.
7	FW Upgrade Port	The Firmware Upgrade Cable plugs in here. Firmware upgrading is discussed in Chapter 7.
8	FW Upgrade Recovery Switch	During normal operation and while performing a firmware upgrade, this switch should be in the NORMAL position. See page 51 for firmware upgrade recovery details.
9	Power Jack	The power adapter cable plugs in here.

Console Module Components

Console Modules are used in a standalone installation. They provide the OSD and Hotkey control of the computers on your installation. They also provide flexibility by allowing either PS/2 or USB based keyboards and mice to be used with the system. Console conversion permits either type of console to access and control any type of computer (PS/2, USB, Mac, or Sun). The Console Module models are shown in the table below:

Module	Type
MP0101P	For PS/2 Consoles
MP0101U	For USB Consoles

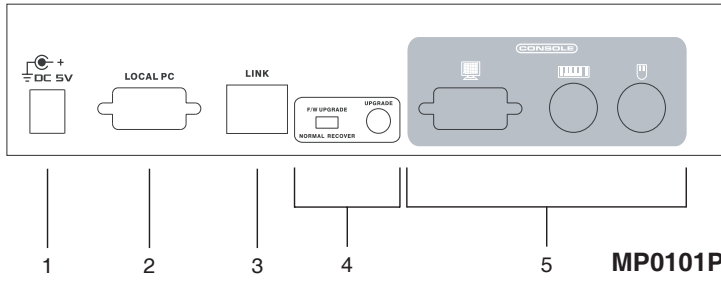
Front View

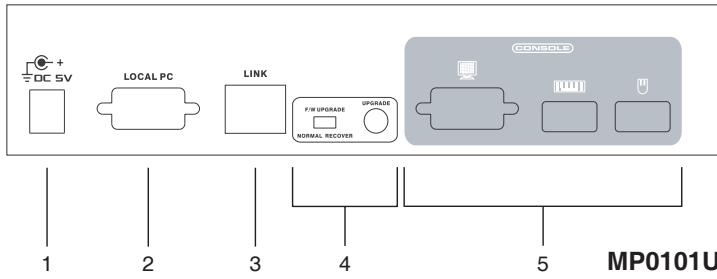


Note: Although, the MP0101P module is shown in the diagram, the front panel configuration of the MP0101U module is the same.

No.	Component	Description
1	Link	Flashes to indicate that data transmission is taking place.
2	Local	Lights to indicate that the locally attached computer has the KVM focus.
3	Remote	Lights to indicate that the KVM Adapter Cable chain has the KVM focus.
4	Local / Remote	Toggles between Local and Remote KVM focus.

Rear View





No.	Component	Description
1	Power Jack	The power adapter cable plugs in here.
2	Local KVM Port	The cable that links to the local computer plugs into this port.
3	Link	The Cat 5 cable that links to the KVM Adapter Cable plugs in here.
4	Firmware Upgrade Section	During normal operation the Firmware Upgrade switch should be in the NORMAL position. The Firmware Upgrade Cable that transfers the firmware upgrade data to the MP0101 system's modules plugs into the UPGRADE jack. Firmware upgrading details are discussed in Chapter 7.
5	Console Port Section	The cables from your keyboard, monitor, and mouse plug in here. The keyboard and mouse ports of both modules are labeled with an appropriate icon to indicate themselves. Additionally, the MP0101P's keyboard and mouse ports are color coded.

KVM Adapter Cables

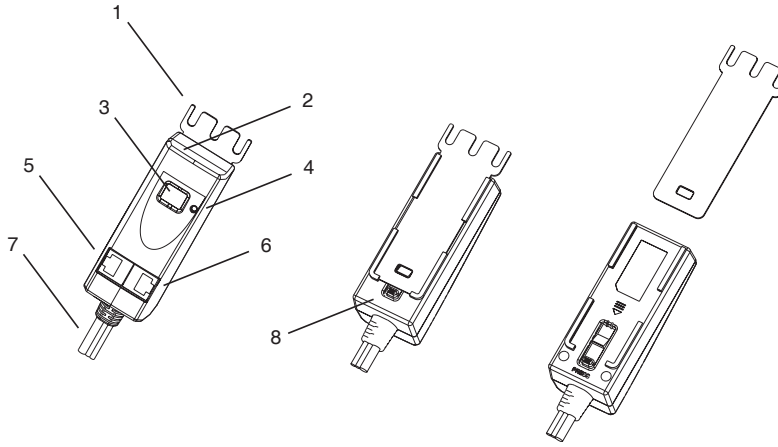
Overview

KVM Adapter Cables are used as signal translation intermediaries between the Console Modules and the computers, allowing either console (PS/2 or USB) to control any combination of PS/2 port computers; PC and Mac USB port computers; Sun USB port computers; and Sun legacy computers as shown in the table below:

Module	Computer Port Type
MP0120	PS/2
MP0130	Sun Legacy
MP0131	USB (PC, Mac, and Sun)

The modules are hot swappable - they can be removed and reinserted for configuration changes without having to close down any devices on the installation.

KVM Adapter Cable Components



No.	Component	Description
1	Mounting Bracket	You can use this bracket to attach the module to a system rack.
2	Firmware Upgrade Switch	During normal operation this switch should be in the NORMAL position. Firmware upgrading details are discussed in Chapter 7.
3	Station ID LED	The module's Station ID (signifying its sequence in the chain), displays here.
4	Link LED	Flashes to indicate that data transmission is taking place.
5	Chain In Port	The Cat 5 cable from the Master or Console Module (if this is the first KVM Adapter Cable on the chain), or to a prior KVM Adapter Cable on the chain, plugs in here.
6	Chain Out Port	The Cat 5 cable that connects the module to the subsequent module on the chain, plugs in here.
7	KVM Cables	These cables connect the module to the computer. The cables have different plug configurations depending on the module type. See the installation diagrams on p. 13 for details.
8	Mounting Bracket Release Button	If you choose not to attach the module to a system rack and want to remove the bracket, press this button and slide the bracket out.

Chapter 2
Installation

Matrix KVM Switch Cascade Chain

To install the MP0101 system as a chain cascaded from a Matrix KVM Switch port, refer to the Installation Diagrams on pp. 12 and 13 (the numbers in the diagram correspond with the numbers of the instruction steps), and do the following:

1. Use Cat. 5 cable to connect any port on the Matrix KVM Switch's rear panel to the *Chain In* port of the Master Module (MP0101M).

   Note: The distance between the switch and the Master Module must not exceed 150m (500').

2. Connect the Master Module's KVM cables to the video and USB ports of the computer you are installing.

   Note: The computer must have a USB port and USB host controller installed on the system.

3. Use Cat. 5 cable to connect the *Chain Out* port of the Master Module to the Chain In port of a KVM Adapter Cable that is appropriate for the computer you are connecting it to (see the table on p. 5 for details).

   Note: The distance between the Master Module and the KVM Adapter Cable must not exceed 0.5 m.

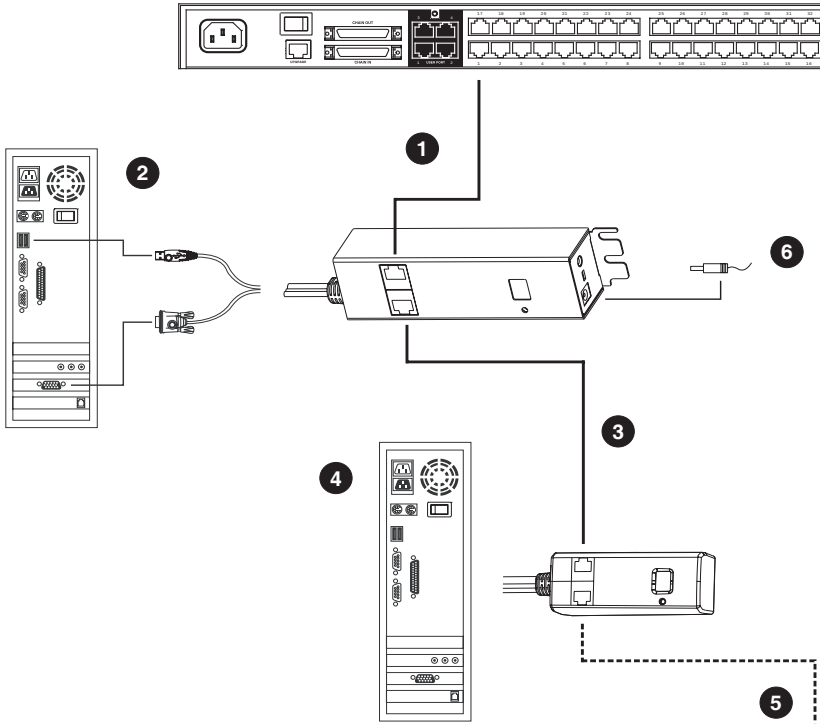
4. Connect the KVM Adapter Cable's KVM cables to their respective ports on the computer you are installing (see the installation diagram on p. 13 for details).

5. Repeat steps 3 and 4 for all the computers you wish to install on the chain.

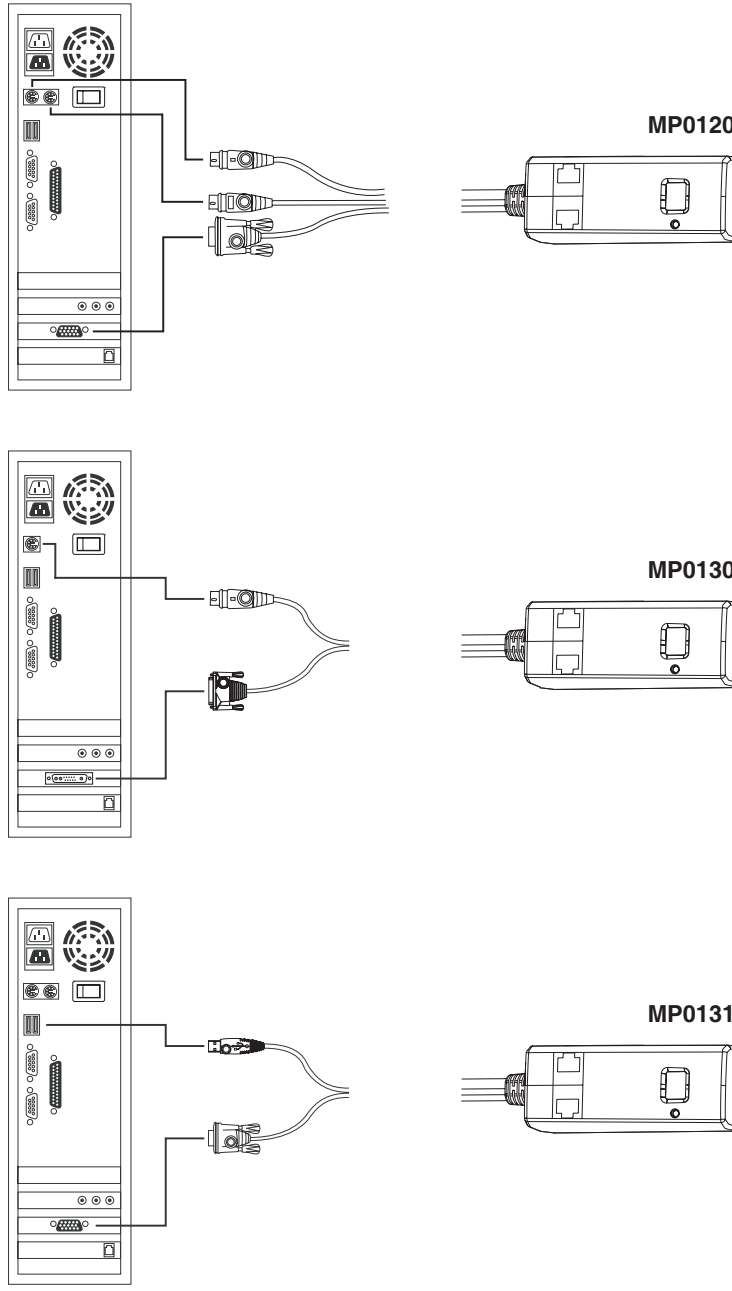
   Note: The distance between the modules must not exceed 0.5 m.

6. After all your computers have been cabled up, plug the Master Module's power adapter into an AC source, then plug the power adapter cable into it's Power Jack.

Matrix KVM Switch Cascade Chain Installation Diagram



KVM Adapter Cable Connection Diagram



Standalone Chain

To install the MP0101 system as a standalone chain, refer to the installation diagrams on pp. 13 and 15 (the numbers in the diagram correspond with the numbers of the instruction steps), and do the following:

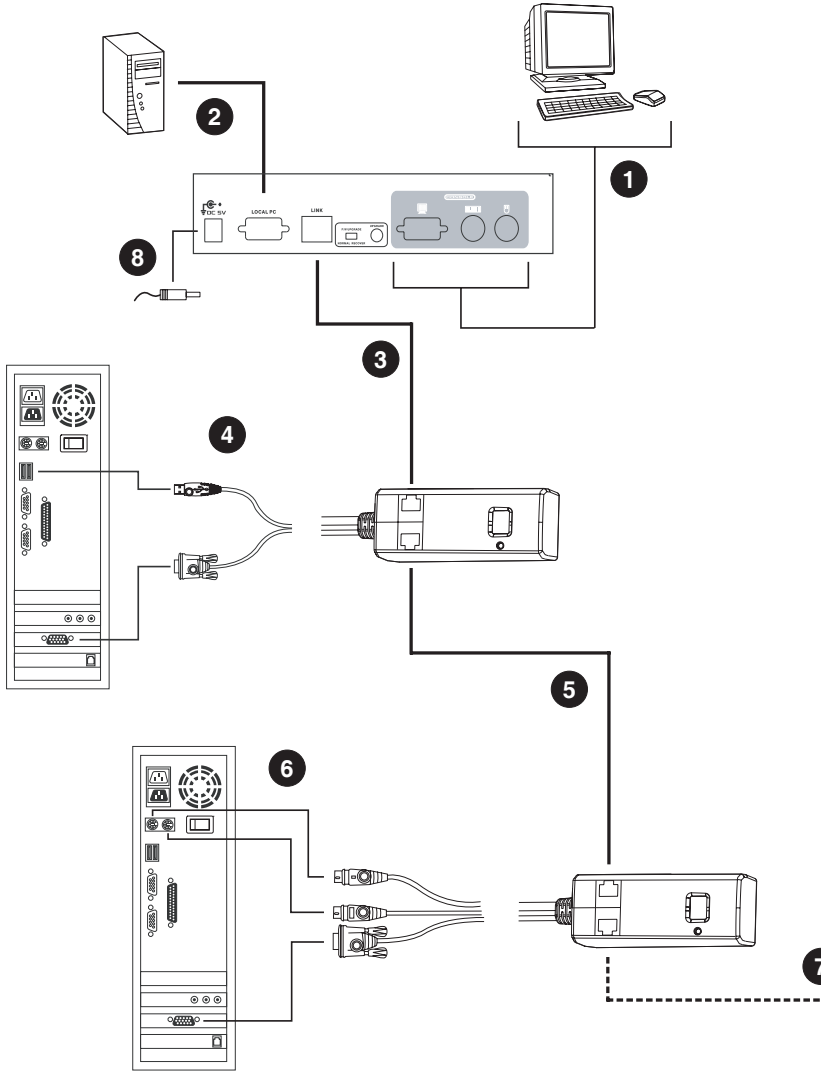
1. Plug your keyboard, mouse, and monitor into their respective ports on the Console Module. Each port is marked with an icon to indicate itself.
2. Use the KVM cable supplied with your module to connect your *Local* computer (one that is not part of your MP0101 chain) to the LOCAL PC port of the Console Module.
3. Use Cat. 5 cable to connect the Console Module's *Link* port to the *Chain In* port of a KVM Adapter Cable that is appropriate for the computer you are connecting it to (see the table on p. 5 for details).
4. Connect the KVM Adapter Cable's KVM cables to their respective ports on the computer you are installing (see the installation diagram on p. 13 for details).
5. Use Cat. 5 cable to connect the KVM Adapter Cable's *Chain Out* port to the *Chain In* port of the next KVM Adapter Cable you will be using.
6. Plug the KVM Adapter Cable's KVM cables into their respective ports on the computer you are installing.
7. Repeat steps 5 and 6 for any other modules you wish to install on the chain.

Note: 1. The distance between the Console Module and the farthest KVM Adapter Cable must not exceed 150m (500').

2. The distance between the modules must not exceed 0.5 m.

8. After all your computers have been cabled up, plug the Console Module's power adapter into an AC source, then plug the power adapter cable into it's Power Jack.

Standalone Chain Installation Diagram



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Chapter 3
Basic Operation

Topology Considerations

The use of RJ-45 connectors, combined with Auto Signal Compensation (ASC), allow signals to travel up to 150 meters (500 feet) and still maintain reliability and high video resolution. This allows the MP0101 installation to take advantage of the internal Cat 5e and Cat 6 wiring built in to most modern commercial buildings.

Note: Although the MP0101 supports legacy Cat 5 wiring, the performance and video quality may degrade over longer distances.

Since the data signals are not transmitted in packets, the transmission cannot go through network hubs or switches. Passive components such as patch panels, keystone jacks, patch cables, etc. can be used to channel the traffic, instead.

Hot Plugging

The MP0101 supports *hot plugging* - modules can be removed and added back into the installation by unplugging their cables from the ports without the need to shut down any of the components on the installation.

Powering Off and Restarting

Powering off the Matrix KVM Switch or Console Module does not affect the KVM Adapter Cables or the computers chained to them. When you restart, you regain control immediately. To replace a Matrix KVM Switch switch or Console Module, simply power it down; unplug the cables and plug them into the new unit; then power the new unit on.

Note: If any of the computers behave strangely after powering off and restarting, or changing a switch, simply restart the computer.

Port Selection

Port Selection is accomplished either by means of a menu driven OSD (On Screen Display), or by entering hotkey combinations from the keyboard. OSD port selection is discussed in *OSD Operation*, Chapter 4; hotkey port selection is discussed in *Hotkey Operation*, Chapter 5.

Although hotkeys are handy for a single stage installation, we strongly recommend you use the more powerful and versatile OSD – especially for daisy chained, cascaded, and combined installations.

Port ID Numbering

Each computer port on an MP0101 installation is assigned a unique Port ID. You can access and control any computer on the installation by specifying the Port ID of the port that it is connected to.

Matrix KVM Switch Chain Installations

Computers that are part of an installation that is chained down from a Matrix KVM Switch computer port have a two-part Port ID. The first part represents the switch's computer port that the MP0101 chain connects to. The second number is the number that displays on the KVM Adapter Cable's Station ID LED.

For example, a computer attached to a KVM Adapter Cable with a Station ID of **06** that is part of a chain that connects back to computer port 12 of a KM0432 switch, would have a Port ID of **12-06**.

See the Matrix KVM Switch's User Manual for more details about Port ID numbering.

Standalone Installations

For computers that are part of a standalone installation, the Port ID is simply the number that displays on the KVM Adapter Cable's Station ID LED. For example, a computer attached to a KVM Adapter Cable with a Station ID of **14**, would have a Port ID of **14**.

Chapter 4
OSD Operation

OSD Overview

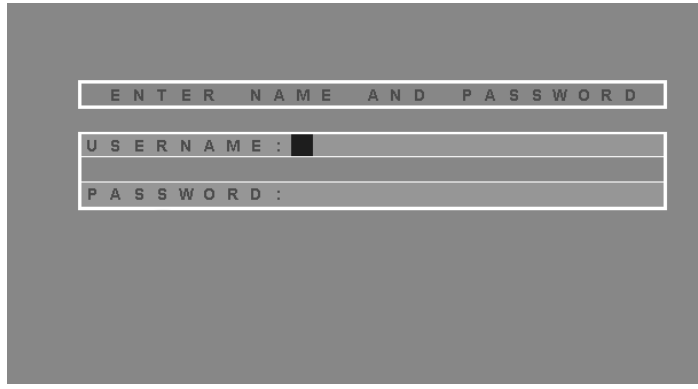
On a Matrix KVM Switch Chain Installation, the switch's OSD governs the computers attached to the MP0101 modules as part of its cascaded OSD setup. Therefore, this chapter only deals with the OSD operation of a standalone MP0101 installation. You can refer to the switch's User Manual for its OSD operation details.

The MP0101 On Screen Display (OSD) provides a visual, menu-driven, mouse enabled, interface that offers quick and convenient computer access and control, as well as efficient system administration including user management (access rights, passwords, etc.).

Each OSD menu option activates a function that configures and controls the operation of the KVM installation. All procedures start from the OSD Main Screen. To bring up the OSD Main Screen, tap the **Scroll Lock** key twice.

Note: [Scroll Lock] is the default OSD hotkey. You can optionally change the hotkey to the **Ctrl** key (see *OSD HOTKEY,* page 24, for details).

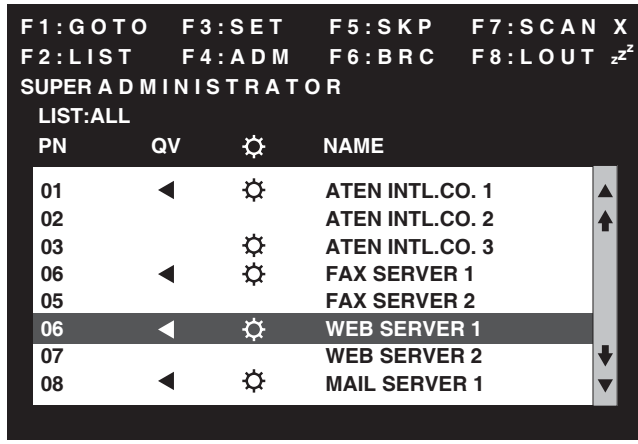
The login dialog box appears:



Key in a valid username and password, then press **[Enter]**.

Note: If this is the first time that the OSD is being run, or if the password function has not been set, simply press **[Enter]**. The OSD Main Screen comes up in Super Administrator Mode. In this mode, you have access to all Administrator and User functions, and can set up operations (including password authorization for the future), as you would like.

After you log in, a screen similar to the one below appears:



Note: 1. The diagram depicts the Super Administrator's Main Screen. The User Main Screen does not show the **F4** and **F6** functions, since these are reserved for the Administrator and can't be accessed by ordinary Users.

2. The OSD always starts in List view, with the highlight bar at the same position it was in the last time it was closed.

3. Only the ports that have been set accessible by the Administrator for the currently logged in User are visible (see *SET ACCESSIBLE PORTS*, page 28, for details).

OSD Navigation

- To dismiss the Main Screen, and deactivate OSD, Click the **X** at the upper right corner of the OSD Window; or press **[Esc]**.
- To Logout, Click **F8** or the $_{Z}Z^{Z}$ symbol at the top of the Main Screen, or press **[F8]**.
- To move up or down through the list one line at a time, Click the Up and Down Triangle symbols (▲▼) or use the Up and Down Arrow Keys. If there are more list entries than there is room for on the Main Screen, the screen will scroll.
- To move up or down through the list one screen at a time, Click the Up and Down Arrow symbols (🡅🡇), or use the [Pg Up] and [Pg Dn] keys. If there are more list entries than there is room for on the Main Screen, the screen will scroll.
- To bring the KVM focus to a port, Double Click it, or move the Highlight Bar to it then press **[Enter]**.
- After executing any action, you automatically go back to the menu one level above.

OSD Main Screen Headings

Heading	Explanation
PN	This column lists the Port Numbers for all the computers on the installation. The Port Number refers to the position of the KVM Adapter Cable that the computer is connected to in the chain. The simplest method to access a particular computer is move the Highlight Bar to it, then press **Enter**.
QV	If a port has selected for Quick View scanning (see *Set Quick View Ports*, p. 28), an arrowhead displays in this column to indicate so.
☼	The computers that are powered on and are On Line have a Sun symbol in this column to indicate so.
NAME	If a port has been given a name (see *Edit Port Names*, p. 27), its name appears in this column.

OSD Functions

OSD functions configure and control the OSD. Examples of what can be accomplished with the OSD include: rapidly switching to any port; auto scanning specifically selected ports; limiting the list of ports you wish to view; designating a port as a Quick View Port; managing port names; user management, system administration, and making OSD setting adjustments.

To access an OSD function:

1. Either Click a Function Key field at the top of the Main Screen, or press a Function Key on the keyboard.
2. In the Submenus that appear make your choice either by Double Clicking it, or moving the Highlight Bar to it, then pressing **[Enter]**.
3. Press **[Esc]** to return to the previous menu level.

A complete description of the MP0101's OSD operations are given in the sections that follow.

F1 GOTO

GOTO allows you to switch directly to a port either by keying in the port's *Name*, or its *Port ID*.

- To use the Name method, key in **1**; key in the port's Name; then press **[Enter]**.
- To use the Port ID method, key in **2**; key in the *Port ID*; then press **[Enter]**.

Note: You can key in a partial Name or Port ID. In that case, the screen will show all the computers that the User has *View* rights to (see *SET ACCESSIBLE PORTS*, p. 28), that match the Name or Port ID pattern, regardless of the current List settings (see *F2 LIST*, p. 23, for details).

To return to the OSD Main Screen without making a choice, press [Esc].

F2 LIST

Many of the OSD functions only operate on the computers that are currently displayed (listed) on the Main Screen. This function lets you broaden or narrow the scope of which ports the OSD lists on the Main Screen. The submenu choices and their meanings are given in the table below:

Choice	Meaning
ALL	Lists all of the ports on the installation that have been set *Accessible* for the user (see *SET ACCESSIBLE PORTS*, p. 28).
POWERED ON	Lists only the ports that have their attached computers Powered On.
QVIEW	Lists only the ports that have been selected as Quick View Ports (see *SET QUICK VIEW PORTS*, p. 28).
QVIEW + POWERED ON	Lists only the ports that have been selected as Quick View Ports (see *SET QUICK VIEW PORTS*, p. 28), and that have their attached computers Powered On.

Move the Highlight Bar to the choice you want, then press **[Enter]**. An icon appears before the choice to indicate that it is the currently selected one.

F3 SET

This function allows each operator to set up his own working environment. A separate profile for each is stored by the OSD and is activated according to the *Username* that is provided during Login.

To change a setting:

1. Double Click it; or move the highlight bar to it, then press **[Enter]**.
2. After you select an item, a submenu with further choices appears. To make a selection, either Double Click it; or move the Highlight Bar to it, then press **[Enter]**. An icon appears before the selected choice to indicate which one it is.

Note: All your setting changes are stored in temporary memory and remain in effect for the duration of your session. The changes only become permanent when you Log out of the OSD (see p. 33). If you shut down the MP0101 without first logging out, your changes are discarded.

The settings are explained in the following table:

Setting	Function
OSD HOTKEY	Selects which hotkey activates the OSD function: **[Scroll Lock] [Scroll Lock]** or **[Ctrl] [Ctrl]**. Since the Ctrl key combination may conflict with programs running on the computers, the default is the Scroll Lock combination.
PORT ID DISPLAY POSITION	Allows you to position where the Port ID appears on the monitor. The default is the upper left corner, but you can have it appear anywhere on the screen. Use the Mouse or the Arrow Keys plus Pg Up, Pg Dn, Home, End, and 5 (on the numeric keypad with Num Lock off), to position the Port ID display, then Double Click or press **[Enter]** to lock the position and return to the Set submenu.

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Setting	Function
PORT ID DISPLAY DURATION	Determines how long a Port ID displays on the monitor after a port change has taken place. The choices are: **User Defined** - which lets you select the amount of time (from 1 - 255 sec.); and **Always On** - which displays the Port ID at all times. If you select *User Defined*, key in the number of seconds, then press **[Enter]**. The default is 3 Seconds. A setting of 0 (zero) disables this function.
PORT ID DISPLAY MODE	Selects how the Port ID is displayed: the Port Number alone (**PORT NUMBER**); the Port Name alone (**PORT NAME**); or the Port Number plus the Port Name (**PORT NUMBER + PORT NAME**). The default is PORT NUMBER + PORT NAME).
SCAN DURATION	Determines how long the focus dwells on each port as it cycles through the selected ports in Auto Scan Mode (see *F7 SCAN*, p. 32). Key in a value from 1 - 255 seconds, then press **[Enter]**. Default is 5 seconds; a setting of 0 disables the Scan function.
SCAN/SKIP MODE	Selects which computers will be accessed under Skip Mode (see *F5 SKP*, p. 30), and Auto Scan Mode (see *F7 SCAN*, p. 32). Choices are: **ALL** - All the Ports which have been set Accessible (see *SET ACCESSIBLE PORTS*, p. 28); **POWERED ON** - Only those Ports which have been set Accessible and are Powered On; **QUICK VIEW** - Only those Ports which have been set Accessible and have been selected as Quick View Ports (see *SET QUICK VIEW PORTS*, p. 28); **QUICK VIEW + POWERED ON** - Only those Ports which have been set Accessible and have been selected as Quick View Ports and are Powered On. The default is ALL. **Note:** The Quick View choices only show up on an Administrator's screen, since only he has *Quick View* setting rights (see *SET QUICK VIEW PORTS*, p. 28, for details).
SCREEN BLANKER	If there is no input from the console for the amount of time set with this function, the screen is blanked. Key in a value from 1 - 30 minutes, then press **[Enter]**. A setting of 0 disables this function. The default is 0 (disabled).
HOTKEY COMMAND MODE	Enables / Disables the hotkey Command function in case a conflict with programs running on the computers occurs. The default is enabled.

F4 ADM

F4 is a Super Administrator and Administrator only function. It allows them to configure and control the overall operation of the OSD. To change a setting Double Click it; or use the Up and Down Arrow Keys to move the highlight bar to it then press **[Enter]**.

After you select an item, a submenu with further choices appears. Double Click the choice you want, or move the Highlight Bar to it then press **[Enter]**. An icon appears before the selected choice to indicate which one it is. The settings are explained in the following table:

Note: All your setting changes are stored in temporary memory and remain in effect for the duration of your session. The changes only become permanent when you Log out of the OSD (see p. 33). If you power off the MP0101 without first logging out, your changes are discarded.

Setting	Function
SET USERNAME AND PASSWORD	This function is used to set Usernames and Passwords: 1. One Super Administrator, one Administrator, and four User passwords can be set. 2. After you key in a name for the Super Administrator, Administrator, or User, a screen that allows you to key in the username and password appears. The username and password may be up to 15 characters long, and can consist of any combination of letters and numbers (A - Z, 0 - 9). 3. For each individual, key in the Username and Password, then press **[Enter]**. 4. To modify or delete a previous Username and/or Password, use the backspace key to erase individual letters or numbers.
SET LOGOUT TIMEOUT	If there is no input from the console for the amount of time set with this function, the Operator is automatically logged out. A login is necessary before the console can be used again. This enables other Operators to gain access to the computers when the original Operator is no longer accessing them, but has forgotten to log out. To set the timeout value, key in a number from 1 - 180 minutes, then press **[Enter]**. If the number is 0 [zero], this function is disabled. The default is 0 (disabled).

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Setting	Function
EDIT PORT NAMES	To help remember which computer is attached to a particular port, every port can be given a name. This function allows the Administrator to create, modify, or delete port names. To Edit a port name: 1. Click the port you want, or use the Navigation Keys to move the highlight bar to it, then press **[Enter]**. 2. Key in the new Port Name, or modify/delete the old one. The maximum number of characters allowed for the Port Name is 15. Legal characters include: ◆ All alpha characters ◆ All numeric characters ◆ **+ - / : .** and **Space** Case does not matter; the OSD displays the Port Name in all capitals no matter how they were keyed in. 3. When you have finished editing, press **[Enter]** to have the change take effect. To abort the change, press **[Esc]**.
RESTORE DEFAULT VALUES	This function is used to undo all changes and return the setup to the original factory default settings (see *OSD Factory Default Settings*, page 57) - except for the *Names* settings that were assigned to the Ports, which are saved.
CLEAR THE NAME LIST	This function is similar to Restore Default Values. The difference is that it also clears the *Names* settings along with undoing all changes and returning the setup to the original factory default settings.
ACTIVATE BEEPER	Choices are **Y** (for Yes), or **N** (for No). When activated, the beeper sounds whenever a Port is changed; when activating the Auto Scan function (see *F7 SCAN*, page 32); or an invalid entry is made on an OSD menu. The default is Y (activated).

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Setting	Function
SET QUICK VIEW PORTS	This function lets the Administrator select which Ports to include as Quick View ports. ◆ To select/deselect a port as a Quick View Port, Double Click the port you want, or use the Navigation Keys to move the highlight bar to it, then press **[Enter]**. ◆ When a port has been selected as a Quick View Port, an arrowhead displays in the QV column of the LIST on the Main Screen to indicate so. When a port is deselected, the arrowhead disappears. ◆ If one of the Quick View options is chosen for the LIST view (see *F2 LIST*, p.see *F2 LIST*, page 23), only a Port that has been selected here will display on the List. ◆ If one of the Quick View options is chosen for Auto Scanning (see *SCAN/SKIP MODE*, p.see *SCAN/SKIP MODE*, page 25), only a Port that has been selected here will be Auto Scanned. The default is for no ports to be selected.
SET ACCESSIBLE PORTS	This function allows the Administrator to define Operator access to the computers on the installation on a Port-by-Port basis. For each Operator, select the target Port; then press **[Spacebar]** to cycle through the choices: **F** (Full access), **V** (View Only), or blank (No access). Repeat until all access rights have been set, then press **[Enter]**. The default is **F** for all users on all Ports. A blank setting means that no access rights are granted. The Port will not show up on the User's LIST on the Main Screen.
SET ACCESS TIMEOUT	If there is no input from the console accessing a particular port for the amount of time set with this function, the port is released, allowing it to be accessed by the other consoles. To set the timeout value, key in a number from 0 - 255 seconds, then press **[Enter]**. If the number is 0 [zero], this function is disabled. The default is 5 seconds.

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SET KEYBOARD LANGUAGE	This function allows the Administrator to define the keyboard language layout for each port. To assign a keyboard language, select the target port; then press the [**Spacebar]** to cycle through the choices: US English; Japanese; or French. The default is US English.
SET OPERATING PLATFORM	This function allows the Administrator to define the operating platform for the computer connected to each port. To assign an operating platform, select the target port; then press the **[Spacebar]** to cycle through the choices: Windows (PC compatible); Mac; and Sun. The default is Windows (PC compatible).
FIRMWARE UPGRADE	In order to upgrade the MP0101's firmware (see Chapter 7), you must first invoke Firmware Upgrade Mode with this setting. Only the Super Administrator on the Master Station can utilize this function.

F5 SKP

This function enables you to easily skip backward or forward - switching the console focus from the currently active computer port to the previous or next available one.

- The selection of computers to be available for Skip Mode switching is made with the *Scan/Skip Mode* setting under the **F3 SET** function (see p. 24).
- When you are in Skip Mode:
  - Press **[←]** to cycle down through the ports (5 → 4 → 3, etc.). When you get to the first port, you cycle back to the last one.
  - Press **[→]** to cycle up through the ports (3 → 4 → 5, etc.). When you get to the last port, you cycle back to the first one.

Note: When you Skip, you only Skip to the previous or next available computer that is in the *Scan/Skip Mode* selection (see p. 25).

- When the focus switches to a Port has been selected for *Scan/Skip Mode*, a Left/Right Triangle symbol appears before its Port ID Display to indicate so.
- While Skip Mode is in effect, the console will not function normally. You must exit Skip Mode in order to regain control of the console.
- To exit Skip Mode, press **[Spacebar]** or **[Esc]**.

F6 BRC

F6 is a Super Administrator or Administrator only function. Clicking the **F6** field, or pressing **[F6]**, invokes Broadcast (BRC) Mode. When this function is in effect, commands sent from the console are broadcast to all available computers on the installation.

This function is particularly useful for operations that need to be performed on multiple computers, such as performing a system wide shutdown, installing or upgrading software, etc.

BRC works in conjunction with the **F2 LIST** function. The LIST function (see p. 23), is used to broaden or narrow the focus of which Ports appear on the OSD Main Screen. When you Broadcast a command, it only goes to the Ports currently selected to be listed on the OSD Main Screen.

- While BRC Mode is in effect, a Speaker symbol appears before the Port ID Display of the port that currently has the console focus.
- While BRC Mode is in effect, the mouse will not function normally. You must exit BRC Mode in order to regain control of the mouse.
- To exit BRC Mode, invoke the OSD (with the OSD hotkey), then Click the **F6** field, or press **[F6]**, to turn BRC Mode off.

F7 SCAN

This function allows you to automatically switch among the available computers at regular intervals so that you can monitor their activity without having to take the trouble of switching yourself.

- The selection of computers to be included for Auto Scanning is made with the *Scan/Skip Mode* setting under the **F3 SET** function (see p. 24).
- The amount of time that each Port displays for is set with the *Scan Duration* setting under the **F3 SET** function (see p. 24). When you want to stop at a particular location, press the **[Spacebar]** or **[Esc]** to stop scanning and exit *Auto Scan Mode*.
- If the scanning stops on an empty port, or one where the computer is attached but is powered Off, the monitor screen will be blank, and the mouse and keyboard will have no effect. Simply wait - after the *Scan Duration* time is up, the Scan function will move on to the next port.
- As each computer is accessed, an **S** appears in front of the Port ID display to indicate that it is being accessed under *Auto Scan Mode*.
- While Auto Scan Mode is in effect, the console will not function normally. You must exit Auto Scan Mode in order to regain control of the console.
- While you are in Auto Scan Mode, you can pause the scanning in order to keep the focus on a particular computer either by pressing **P**, or with a Left Click of the mouse. See *Invoking Auto Scan:*, page 38, for details.
- To exit Auto Scan Mode, press the **[Spacebar]** or **[Esc]**.

F8 LOUT

LOUT (Log Out) logs you out of OSD control of the computers, and blanks the Console screen. This is different from simply pressing **[Esc]** to deactivate the OSD when you are at the Main Screen. With this function you must log in all over again to regain access to the OSD, whereas with **[Esc]**, all you have to do to reenter the OSD is tap the OSD hotkey.

Note: 1. When you reenter the OSD after logging out, the screen stays blank except for the OSD Main Screen. You must input your password before you can continue.

2. If you reenter the OSD after logging out, and immediately use **[Esc]** to deactivate the OSD without having selected a port from the OSD menu, a Null Port message displays on the screen. The OSD hotkey will bring up the Main OSD Screen.

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Chapter 5
Hotkey Operation

On a Matrix KVM Switch Chain Installation, the switch's Hotkey feature governs the computers attached to the MP0101 modules. Therefore, this chapter only deals with the Hotkey operation of a standalone MP0101 installation. You can refer to the switch's User Manual for its Hotkey operation details.

Hotkey Port Control

Hotkey Port Control allows you to provide KVM focus to a particular computer directly from the keyboard.

Note: Hotkeys work best in single stage and basic cascaded or daisy chained installations. For complicated daisy chain+cascaded installations, it is simpler, more convenient, and more efficient to use the OSD.

The MP0101 System provides the following Hotkey Port Control features:

- Local or Remote Selection
- Selecting the Active Port
- Auto Scanning
- Skip Mode Switching

Invoking Hotkey Mode

Most hotkey operations begin by invoking Hotkey Mode (HKM). Invoking HKM takes three steps:

1. Hold down the **Num Lock** key
2. Press the ***** key or the - (minus) key
3. Simultaneously release both keys

   `[Num Lock] + [*]`

   or

   `[Num Lock] + [-]`

When HKM is active:

- The Caps Lock, and Scroll Lock LEDs flash in succession to indicate so. They stop flashing and revert to normal status when you exit HKM.
- A Command Line appears at the bottom of the monitor screen. The command line prompt is the word *Hotkey:* in white text on a blue background. Text that you key in while in HKM displays here.
- Ordinary keyboard and mouse functions are suspended - only Hotkey compliant keystrokes and mouse clicks (described in the sections that follow), can be input.
- Pressing **[Esc]** or **[Spacebar]** exits HKM.

Local or Chained (Remote) Selection

You can toggle the console focus between the Local Computer and the Chained installation (this is similar to using the Console Module's Local/Remote switch), as follows:

1. Hold down the **Num Lock** key
2. Press and release the ***** key or the - (minus) key twice
3. Release the **Num Lock** key

Selecting the Active Port

Each computer port is assigned a Port ID (see *Port ID Numbering*, page 18. You can directly access any computer on the installation with a Hotkey combination that specifies the Port ID of the computer port that the computer is connected to. The steps involved are:

1. Invoke HKM (see p. 35).
2. Key in the Port ID

   The Port ID numbers display on the Command Line as you key them in. If you make a mistake, use [Backspace] to erase the wrong number.
3. Press **[Enter]**

   After you press [Enter], the KVM focus switches to the designated computer and you automatically exit HKM.

Auto Scanning

Auto Scan switches among all the computer ports that are accessible to the current Operator at regular intervals (see *Scan/Skip Mode*, p. 25, for information regarding accessible ports). This function is convenient for automatically monitoring the activity of the computers on the installation.

Setting the Scan Interval:

The amount of time Auto Scan dwells on each port is set with the *Scan Duration* setting of the OSD **F3 SET** function (see p. 24). You can change the scan interval before activating Hotkey Auto Scanning, if you wish, with the following Hotkey combination:

1. Invoke HKM (see p. 35).
2. Key in **[T] [n]**

   Where [T] is the letter **T**, and [n] is a number from 1-255 that represents the number of seconds for the dwell time.

   The letter **T** and the numbers display on the Command Line as you key them in. If you make a mistake, use **[Backspace]** to erase the wrong number.
3. Press **[Enter]**

   After you press [Enter], you automatically exit HKM, and are ready to invoke Auto Scanning.

Invoking Auto Scan:

To start Auto Scanning, key in the following Hotkey combination:

1. Invoke HKM (see p. 35).
2. Press **[A]**.

   After you press **A**, you automatically exit HKM, and enter Auto Scan Mode, and Auto Scanning begins.

   - While you are in Auto Scan Mode, you can pause the scanning in order to keep the focus on a particular computer either by pressing **P** or with a Left Click of the mouse. During the time that Auto Scanning is paused, the Command Line displays: **Auto Scan: Paused.**
     - *Pausing* and *Exiting* are the two ways to stop scanning and keep the focus on a particular computer. If you intend to continue scanning after a brief stop, *Pausing* is more convenient than *Exiting* Auto Scan Mode completely.
     - This is because when you Resume scanning after Pausing, you start from where you left off. On the other hand, if you Exit and then restart Auto Scan, you start over from the very first computer on the installation.
     - To *Resume* Auto Scanning after you Pause, press any key or Left Click. Scanning continues from where it left off.
   - While Auto Scan Mode is in effect, ordinary keyboard and mouse functions are suspended - only Auto Scan Mode compliant keystrokes and mouse clicks can be input. You must exit Auto Scan Mode in order to regain normal control of the console.

3. To exit Auto Scan Mode press **[Esc]** or **[Spacebar]**. Auto Scanning stops when you exit Auto Scan Mode.

Skip Mode

This feature allows you to switch between computers in order to monitor them manually. In contrast to Auto Scanning, which automatically switches after a fixed interval, Skip Mode lets you dwell on a particular port for as long or as little as you like. To invoke Skip Mode, key in the following Hotkey combination:

1. Invoke HKM (see p. 35).
2. Key in **[Arrow]**
   - Where [Arrow] refers to the Up or Down Arrow key. After you press **[Arrow]**, you automatically exit HKM, and enter Skip Mode where you can switch ports as follows:

     ← Cycles down through the ports (5 → 4 → 3, etc.). When you get to the first port, you cycle back to the last one.

     → Cycles up through the ports (3 → 4 → 5, etc.). When you get to the last port, you cycle back to the first one.

   - Once you are in Skip Mode, you can keep on skipping by pressing the Arrow keys. You don't have to use the [NumLock] + [*****] combination each time you want to skip.
   - While Skip Mode is in effect, ordinary keyboard and mouse functions are suspended - only Skip Mode compliant keystrokes can be input. You must exit Skip Mode in order to regain normal control of the console.

   Note: When you Skip, you only Skip to the previous or next available computer that is in the *Scan/Skip Mode* selection (see p. 25).

3. To exit Skip Mode, press **[Esc]** or **[Spacebar]**.

Hotkey Beeper Control

The Beeper (see Activate Beeper, p. 27) can be Hotkey toggled On and Off. To toggle the Beeper, key in the following Hotkey combination:

1. Invoke HKM (see p. 35).
2. Press **[B]**

After you press B, the Beeper toggles On or Off. The Command Line displays Beeper On or Beeper Off for one second; then the message disappears and you automatically exit HKM.

Hotkey Summary Table

[Num Lock] + [*] or [Num Lock] + [-]	[*] or [-]	Toggles the console focus between the Local Computer and the Chained installation.
	[Port ID] [Enter]	Switches access to the computer that corresponds to that Port ID.
	[T] [n] [Enter]	Sets the Auto Scan interval to **n** seconds - where **n** is a number from 1 - 255.
	[A]	Invokes Auto Scan Mode. When Auto Scan Mode is in effect, [P] or Left Click pauses Auto Scanning. When Auto Scanning is paused, pressing Any Key or another Left Click resumes Auto Scanning.
	[←]	Cycles up through the ports (5 → 4 → 3, etc.). When you get to the first port, you cycle back to the last one.
	[→]	Cycles down through the ports (3 → 4 → 5, etc.). When you get to the last port, you cycle back to the first one.
	[B]	Toggles the Beeper On or Off.

Chapter 6
Keyboard Emulation

The MP0101 provides the utmost in flexibility for your installation by offering multiplatform support. Through the use of Console Modules and KVM Adapter Cables, PS/2 and USB interfaces can be mixed and matched at the console side, and PS/2, USB and Sun interfaces can be mixed and matched at the computer side. With this approach, either type of console can access and control multiple computer types - PC compatible, Sun and Mac.

The PC Compatible (101/104 key) keyboard can emulate the functions of the Sun and Mac keyboards. The corresponding functions are shown in the tables on the following pages.

Mac Keyboard Emulation

PC Keyboard	Mac Keyboard
[Shift]	Shift
[Ctrl]	Ctrl
	⌘
[Ctrl] [1]	Mute
[Ctrl] [2]	V_DN
[Ctrl] [3]	V_UP
[Ctrl] [4]	⏏
[Alt]	L Alt/Option
[Prt_Sc]	F13
[Scroll Lock]	F14
	=
[Enter]	Return
[Back Space]	Delete
[Ins]	Help
[Ctrl] 	F15

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

Sun Keyboard Emulation

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.

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Chapter 7
The Firmware Upgrade Utility

Introduction

The purpose of the Windows-based Firmware Upgrade Utility (FWUpgrade.exe) is to provide an automated process for make upgrading the MP0101's firmware as smooth and painless as possible.

The Utility comes as part of a Firmware Upgrade Package that is specific for each device. As new firmware revisions become available, new firmware upgrade packages are posted on our web site:

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

Check the web site regularly to find the latest packages and information relating to them.

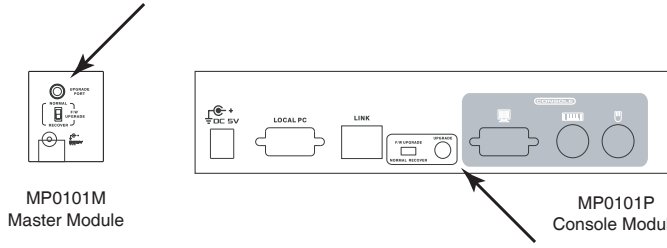
Before You Begin

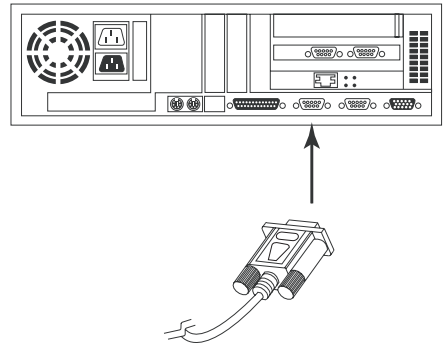
To prepare for the firmware upgrade, do the following:

1. From a computer that is not part of your MP0101 installation go to our Internet support site and choose the model name that relates to your device to get a list of available Firmware Upgrade Packages.

   Note: On a standalone installation, this would be a computer different from the one connected to the LOCAL PC port.

2. Choose the Firmware Upgrade Package you want to install (usually the most recent), and download it to your computer.
3. On a Matrix KVM Switch chained installation, disconnect the chain from the switch by unplugging the Cat 5 cable that links the Master Module to the switch's computer port.
4. Use the Firmware Upgrade Cable that came with your MP0101 package to connect a COM port on your computer to the Firmware Upgrade Port on the Master Module (for Matrix KVM Switch chained installations) or Console Module (for standalone installations).





5. Shut down all of the computers on the MP0101 chain.
6. From your console, bring up the OSD (see p. 19) and select the **F4ADM** function.
7. Scroll down to FIRMWARE UPGRADE. Press [Enter], then press [Y] to invoke Firmware Upgrade Mode.

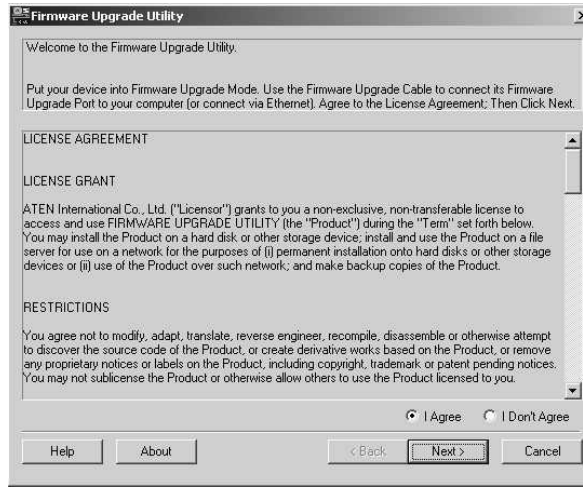
Performing the Upgrade

Starting the Upgrade

To upgrade your firmware:

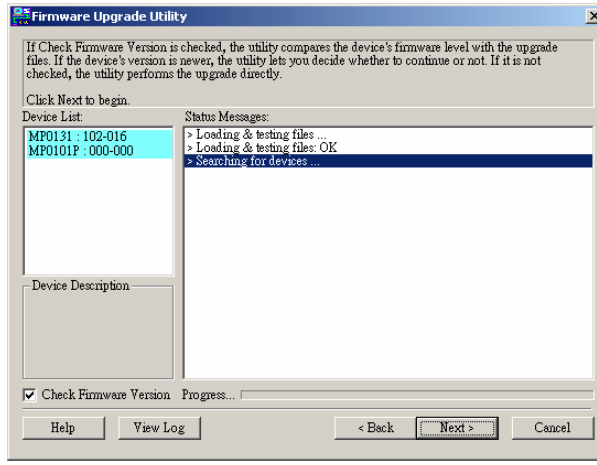
1. Run the downloaded Firmware Upgrade Package file - either by double clicking the file icon, or by opening a command line and keying in the full path to it.

   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:

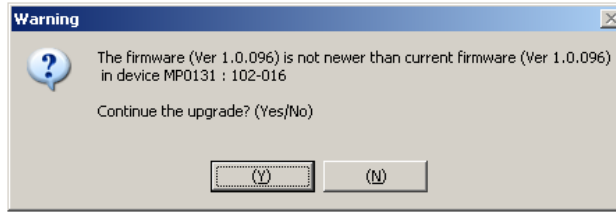


The Utility inspects your installation. The devices capable of being upgraded by the package are listed in the *Device List* panel.

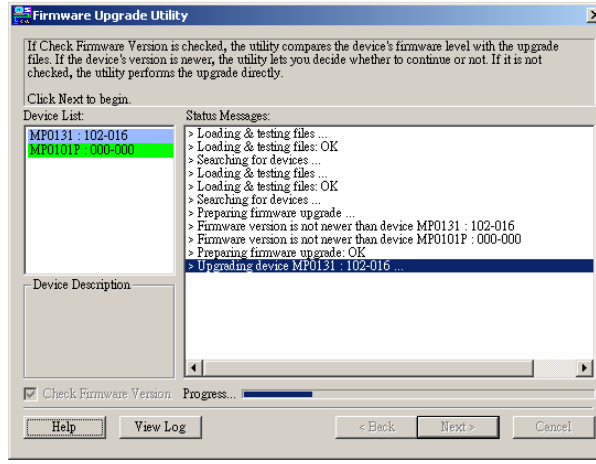
Note: 1. Although only one device type is shown in the list (MP0131, for example), all units of that type receive the upgrade.

2. A blue background behind the device name indicates that it is ready to be upgraded.

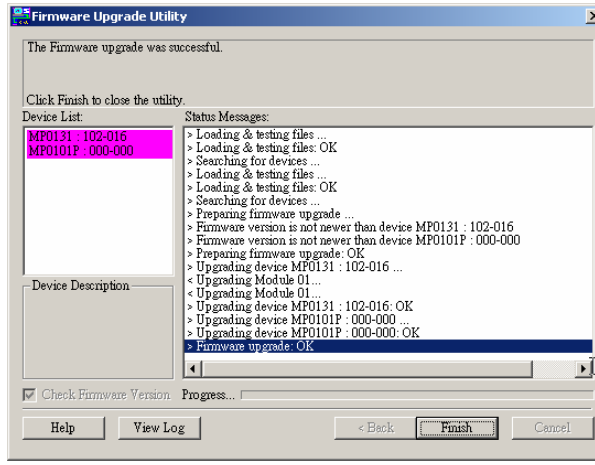
4. When the list is complete, click **Next** to start the upgrade.
   - If you enabled *Check Firmware Upgrade*, the Utility compares the device's firmware level with that of the upgrade files. If it finds that the device's version is higher, it brings up a dialog box informing you of the situation and gives you the option to Continue or Cancel.



   - If you didn't enable *Check Firmware Upgrade*, the Utility installs the upgrade files without checking their version level.
   - While a device group is being upgraded, the background behind its name changes to green and blinks on and off to indicate that upgrading for that device group is in progress.
   - As the Upgrade proceeds, status messages appear in the *Status Messages* panel, and the progress toward completion is shown on the *Progress* bar



- As each device update completes, its status is reported in the *Status Messages* panel.
- When a device group upgrade is successful, the background behind the device group name changes to pink to indicate so; if a member of a device group fails to upgrade successfully, the background behind the group name changes to red to indicate that there was an upgrade failure in the group. Check the Status Messages to ascertain which device failed to upgrade.



5. When upgrading for all the devices has completed, click **Finish** to close the Firmware Upgrade Utility.

Upgrade Failed

If a member of a device group fails to complete the upgrade successfully:

1. Click **Finish** to close the Firmware Upgrade Utility.
2. Start the firmware upgrade procedure again (see p. 47).
3. When the Device List is complete, Click on the device group that the failed device belongs to in the Device List panel (see p. 48).
4. Click **Next** to start the upgrade.

Firmware Upgrade Recovery

If the firmware upgrade procedure is unnaturally aborted (due to a power outage, for example), the switch that was being upgraded at the time may become inoperable, and may be incapable of accepting a normal firmware upgrade.

If this occurs, to recover, do the following:

1. Power the unit off.
2. Slide the unit's *Firmware Upgrade Recovery Switch* to the RECOVER position (see pp. 6, 8 and 10).
3. Power the unit back on.
4. Slide the Recovery Switch back to the NORMAL position.
5. Start the firmware upgrade procedure (see p. 47).

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Appendix

Specifications

Master Module

Function		MP0101M
Connectors	Local Computer KB & Mouse	1 x USB Type A (On Molded Cable)
	Local Computer Video	1 x HDB-15 Male (On Molded Cable)
	Link to Matrix KVM Switch	1 x RJ-45 Female
	Link to KVM Adapter Cable	1 x RJ-45 Female
	Firmware Upgrade	4 Pin Earphone Jack
	Power	1 x DC 5V Jack
LEDs	Station ID	2 x 7 Segments
	Link	1 (Green)
Switches		1 x Slide (FW Upgrade Recovery)
Power Consumption		DC5V; 1.75W
Environment	Operating Temp.	0–40^{o} C
	Storage Temp.	-20–60^{o} C
	Humidity	0–80% RH, NC
Physical Properties	Housing	Metal
	Weight	0.445 kg
	Dimensions	17.85 x 4.20 x 3.50 cm

Console Modules

Function		MP0101P	MP0101U
Connectors	Console KB	1 x mini-DIN-6 Female	1 x USB Type A Female
	Console Video	1 x HDB-15 Female	
	Console Mouse	1 x mini-DIN-6 Female	1 x USB Type A Female
	Link to KVM Adapter Cable	1 x RJ-45 Female	
	Link to LOCAL Computer	1 x SPHD-15 Female (Yellow for PS/2 or Green for USB)	
	Firmware Upg.	4 Pin Earphone Jack	
	Power	1 x DC 5V Jack	
LEDs	Link	1 (Green)	
	Local	1 (Orange)	
	Remote	1 (Orange)	
Switches	FW Upg. Recov.	1 x Slide	
	Local/Remote	1 x Pushbutton	
Video		1280 x 1024 @ 60 Hz; 150 m	
Power Consumption		DC5V; 2.0W	DC5V; 2.6W
Environment	Operating Temp.	0–40^{o} C	
	Storage Temp.	-20–60^{o} C	
	Humidity	0–80% RH	
Physical Properties	Housing	Metal	
	Weight	0.725 kg	
	Dimensions	21.26 x 8.91x 5.55 cm	

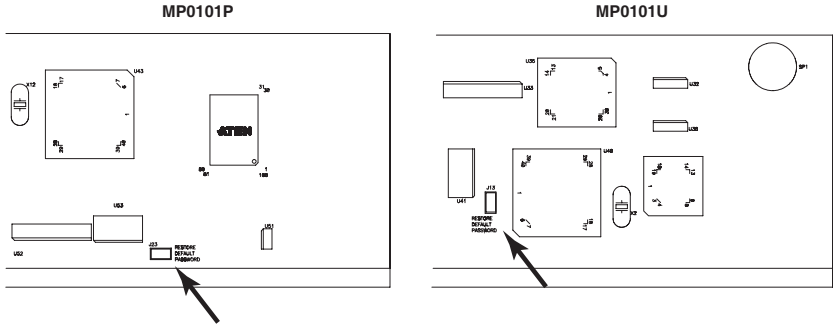
KVM Adapter Cables

Function		MP0120	MP0131	MP0130
Connectors	KB	1 x mini-DIN-6 M	1 x USB Type A M	1 x mini-DIN-8 M
	Mouse	1 x mini-DIN-6 M		
	Video	1 x HDB-15 M		1 x 13W3 M
	Chain In	1 x RJ-45 Female		
	Chain Out	1 x RJ-45 Female		
LEDs	Station ID	2 x 7segments		
	Link	1 (Green)		
Switches		1 x Slide (FW Upgrade Recovery)		
Power Consumption		DC5V; 1.2W	DC5V; 1.5W	DC5V; 1.0W
Environment	Operating Temp.	0–40^{o} C		
	Storage Temp.	-20–60^{o} C		
	Humidity	0–80% RH		
Physical Properties	Housing	Plastic		
	Weight	0.250 kg		0.260 kg
	Dimensions	13.83 x 4.20 x 4.20 cm		

Clear Login Information

If you are unable to perform an Administrator login (because the Username and Password information has become corrupted, or you have forgotten it, for example), you can clear the login information with the following procedure:

1. Power off the switch and remove the top cover of the Switch module case.
2. Short the jumper labeled *Restore Default Password* at the right front of the switch's main board.



3. Power on the switch.

   When you power the switch on, the following message appears on the LCD display:

   ```
   USERNAME AND PASSWORD INFORMATION HAS BEEN CLEARED.
   PLEASE POWER OFF THE SWITCH, REMOVE THE JUMPER, CLOSE
   THE CASE, THEN RESTART.
   ```

4. After you start back up, the OSD login function acts exactly the way it did the first time the switch was run, and you can reset passwords for the Administrators and Users.

OSD Factory Default Settings

The factory default settings are as follows:

Setting	Default
OSD Hotkey	[Scroll Lock] [Scroll Lock]
Port ID Display Position	Upper Left Corner
Port ID Display Duration	3 Seconds
Port ID Display Mode	The Port Number plus the Port Name
Scan Duration	5 Seconds
Scan/Skip Mode	All
Screen Blanker	0 (Disabled)
Hotkey Command Mode	Enabled
Logout Timeout	0 (Disabled)
Beeper	Y (Activated)
Quick View Ports	No ports selected
Accessible Ports	F (Full) For all Users on all Ports
Access Timeout	5 seconds
KB Lang. Operating Platform	PC compatible

Limited Warranty

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