USER'S GUIDE

kvm switch

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Introduction

Product Description

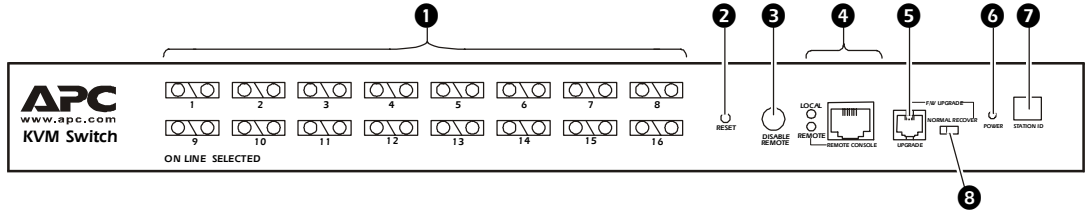
KVM Switch capabilities

- Connect up to 31 additional KVM Switches to control up to 512 computers from a single console.
- Add or remove switches or computers without having to remove power from the switch.

Features of the KVM Switch

- The "keep-alive" feature assures all the keyboard and mouse connections work properly if the KVM Switch loses power temporarily.
- Auto-sensing of KVM station positions for serially-connected installations, which are indicated on the front panel LED.
- Port names automatically reconfigure when the station sequence is changed.
- Two-level password security for an administrator and up to four users, with separate files for each. Only authorized users can view and control the computers.
- No software is required; select a computer by using the On-Screen Display (OSD) menu or Hot Key combination.
- AutoScan offers monitoring of connected computers.
- Use any PS/2-compatible mouse, Microsoft® Intellimouse explorer, or Logitech® FirstMouse+.

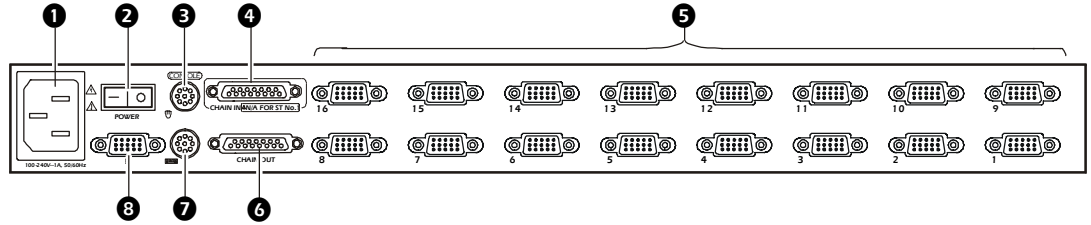
Front panel (AP5202 shown)



Item	Description
❶ Port LEDs	Each Port LED provides status information about a corresponding computer port. Each port consists of a left (**Online**) and right (**Selected**) LED pair. The following list describes the LED light indicators: • A GREEN **Online** LED indicates the corresponding attached computer port is up and running. • An ORANGE **Selected** LED indicates the corresponding attached computer has the KVM focus. Under normal conditions, the LED is steady. When accessing its port under Auto Scan Mode, the LED flashes. • Each time the KVM Switch begins to provide power, it performs a self-test. The **Online** and **Selected** LEDs blink once in succession during the self-test.
❷ Reset switch	Press the recessed **Reset** switch with a thin object (the end of a paper clip or ballpoint pen) to perform a system reset.
❸ Disable Remote button	Press to switch between local and remote access to the console.

	Item	Description
❹	Remote console	To use a remote console, plug the serial cable into the RJ-45 connector. When both a local and remote console are present, both can access the switch (not simultaneously). Push the **Disable Remote** button to toggle between the remote and the local console. When the remote console is in control, you can only view through the local console. When the local console is in control, you can only view through the remote console. The **Local** and **Remote** LEDs indicate which console is currently in use.
❺	RJ-11 serial port	The firmware upgrade cable plugs into the RJ-11 connector and transfers firmware upgrade data from the administrator's computer to the KVM Switch.
❻	Power LED	Indicates when the KVM Switch is receiving power.
❼	Station ID LED	Displays the station number of the KVM Switch.
❽	Firmware upgrade reset switch	The reset switch is in **NORMAL** position during normal operation or while performing a firmware upgrade. If the firmware upgrade operation does not succeed, slide the reset switch to the **RECOVER** position, turn the KVM Switch off, and then restart the KVM Switch. Slide the reset switch back to the **NORMAL** position, turn off the KVM Switch, and then restart the KVM Switch.

Rear panel (AP5202 shown)



	Item	Description
❶	Power inlet	3-pin, AC power inlet
❷	Power switch	Rocker-style switch for turning the switch on or off
❸	Mouse connector	Connects to a PS/2-style mouse
❹	Chain In port	Serially connects one KVM Switch to another. This port is not used for the highest-level KVM Switch in a cascaded setup
❺	Computer connections	Monitors connected computers
❻	Chain Out port	Serially connects one KVM Switch to another
❼	Keyboard connector	Connects to a PS/2-style keyboard
❽	Monitor connector	Connects to a VGA, SVGA, or Multisync monitor capable of the highest resolution that you plan to use on any computer in the installation

OSD Operation

Overview

The On-Screen Display (OSD) uses menu options to configure and control various operations such as editing port names and performing operations on multiple computers.

The OSD also provides security over the KVM. For example, the administrator can assign access privileges to users, such as the right to access or view certain computers connected to the KVM.

The OSD main menu displays a list of function key controls, connected computers, and symbols that indicate the status of a computer. The OSD includes a two-level password system: Administrator and User.

To activate the OSD main menu:

1. Press the pre-assigned hotkey, SCROLL LOCK, twice to access the login window.

   Optionally, you can assign the control key as the main menu hotkey. See OSD HOTKEY.

2. Do either of the following:
   - Enter a valid password in the password field, and press ENTER.
   - For a first-time OSD activation, or if the password has not been set, leave the password field blank, and press ENTER.

The OSD main menu appears in Administrator mode. Administrator mode provides access to both Administrator and User functions and lets you set up operations (including future password authorization).

OSD navigation

Use any of the following methods to navigate the OSD main menu screen:

- To dismiss the main menu and deactivate the OSD, press ESC or click the X at the upper-right hand corner of the screen.
- To log off of the OSD, press F8 or click F8 LOUT at the top of the screen.
- To move up or down through the list one line at a time, press the up or down arrows key or click the up or down arrow symbols on the OSD's right scroll bar.
- To move up or down through the list one screen at a time, press the PGUP or PGDN key or click the up or down arrow symbols on the OSD's right scroll bar.
- To activate a port, double-click its name in the list or highlight the name, and press ENTER.

Each action returns you to the menu.

OSD main menu headings

Heading	Description
SN-PN	List the Port ID numbers (Station Number - Port Number) for all computer ports on the installation. To access a computer, move the highlight bar over a computer in the list, and press ENTER.
QV	An arrowhead appears in this column to indicate ports selected for Quick View (see SET QUICK VIEW PORTS).
	A sun symbol appears in this column to indicate computers that are receiving power are currently online.
NAME	You can provide a unique port name that appears in this column (see EDIT PORT NAMES).

OSD Functions

The OSD provides a series of function keys to configure and control various computer operations. For example, you can switch to any port, scan selected ports, and limit the list of ports you want to view. You can also manage port names or make OSD setting adjustments.

To access any OSD function do one of the following:

- Press the desired function key on your keyboard.
- Click a function key menu option located at the top of the main menu screen.

A submenu appears that corresponds to your selected function key.

Press ESC to return to the previous menu level.

GOTO (F1). To activate the GOTO function, press F1 or click the **F1** menu option located at the top of the main menu screen.

GOTO allows you to switch directly to a port by typing the port's name or the port ID. The last line on the OSD screen prompts you to select by name or port ID.

- To use the name method: type 1 and the port name, then press ENTER.
- To use the port ID method: type 2 and the port ID, then press ENTER.
- To return to the OSD main menu screen without selecting a port, press ESC.

LIST (F2). To activate the LIST function, press F2 or click the **F2** menu option located at the top of the main menu screen.

LIST allows you to broaden or narrow the scope of ports listed on the OSD.

To activate a submenu option, move the highlight bar to the desired option, and press ENTER. An icon to the left of the menu option indicates your selection.

The following table provides a description of each **F2 LIST** submenu option:

Main Option	Description
ALL	Lists all the ports on the installation.
POWERED ON	Lists only those ports with attached computers that are turned on.
QVIEW	Lists only the ports selected as Quick View Ports (see SET QUICK VIEW PORTS).
QVIEW + POWERED ON	Lists only those ports selected as Quick View Ports with their attached computers turned on.

SET (F3). To activate the SET function, press F3 or click the **F3** menu option at the top of the main menu screen.

SET allows an Administrator or User to set up a unique working environment profile. The stored profile activates each time a corresponding user logs into the system.

To activate a submenu option, move the highlight bar to the desired option, and then press ENTER. An icon to the left of the menu option indicates your selection.

The following table provides a description of each **SET** submenu option:

Main Option	Description
OSD HOTKEY	Selects which hotkey combination activates the OSD: press SCROLL LOCK twice or press CTRL twice. The default hotkey combination is SCROLL LOCK. The CTRL hotkey combination may conflict with other programs running on computers.
PORT ID DISPLAY POSITION	Allows you to position the Port ID display on your monitor. The upper-left corner is the default position. To position the Port ID display anywhere on the screen, use the mouse or arrow keys. You can also use the arrow keys on the numeric keypad (with NUMLOCK off). To lock the position and return to the **Set** menu, press ENTER or double-click the mouse.
PORT ID DISPLAY DURATION	Determines the number of seconds a Port ID appears on-screen after a port change has occurred. Select from: • User Defined: Type the number of seconds (from 1–255) and then press ENTER. The default is three seconds. • A value of zero disables the function. • Always On displays the Port ID at all times.
PORT ID DISPLAY MODE	Determines how a Port ID displays on-screen; displays the port number, port name, or both (default).
SCAN DURATION	Sets the amount of time a port displays on-screen each time you activate SCAN (see SCAN (F7)). Type a value from 1 to 255 seconds, and press ENTER. The default is five seconds. A value of zero disables this function.

Main Option	Description
SCAN/SKIP MODE	Select the computer accessed in Skip (see SKP (F5)) and Auto Scan (see SCAN (F7)) mode. The default is ALL. Select from: • ALL: all ports set as accessible (see SET ACCESSIBLE PORTS) by a user. • POWERED ON: all ports set as accessible by a user and receiving power. • QUICK VIEW: all ports set as accessible by a user and selected as Quick View ports (see SET QUICK VIEW PORTS). • QUICK VIEW + POWERED ON: all ports set as accessible by a user, selected as Quick View, and receiving power.
SCREEN BLANKER	The screen clears when there is no console input for the number of minutes specified. Type a value from 1–30 minutes, and press ENTER. A value of zero (the default) disables this function.
HOTKEY COMM AND MODE	If a software conflict occurs, you can enable or disable the HotKey function.

ADM (F4). To activate the ADM function, press F4 or click the **F4** menu option located at the top of the main menu screen.

ADM is an Administrator function that allows the Administrator to configure and control the overall operation of the OSD.

To activate a submenu option, either move the highlight bar to the desired option and press ENTER, or double-click the option. An icon to the left of the menu option indicates your selection.

The following table describes each **ADM** submenu option:

Main Option	Description
SET USERNAME AND PASSWORD	Sets username and passwords for one administrator and four users: 1. Select either the administrator or user fields, 2. On password screen, enter a username and a unique password consisting of up to 15 alphanumeric characters. 3. Reenter the password in the Confirm field, and press ENTER. Press ESC to return to the previous menu. **NOTE:** To modify or delete an existing username or password, press BACKSPACE to erase the characters. **CAUTION:**For effective security, you must enter usernames and passwords for four users. If you leave any username or password field blank, an unauthorized user can log on without entering a username and password.
SET LOGOUT TIME	Automatically logs off a user when there is no console input fro the number of minutes specified. Other users may access computers when the primary user has not logged off but is no longer accessing computers. To set the timeout value, type a value from 1 to 180 minutes, and press ENTER. A value of zero (the default) disables this function.

Main Option	Description
EDIT PORT NAMES	You can assign a unique name to each port to recognize a port's corresponding computer. To create, modify, or delete port names: 1. Click on or highlight a port using the navigation keys, and press ENTER. 2. Type in a new port name or modify/delete an existing name. The maximum number of characters allowed is twelve, and the following characters are valid: •Alphabetic: A–Z •Numeric: 0–9 •+-/: and Space Port names are not case sensitive and appear as all capital letters regardless of how they were input. 3. When you are finished, press ENTER to save your changes. Press ESC to cancel.
RESTORE DEFAULT VALUES	Returns current settings to the original factory default settings. See OSD default settings.
CLEAR THE NAME LIST	Returns current settings to the original factory default settings and clears assigned port names.
ACTIVATE BEEPER	Activates a beeper sound each time the Auto Scan function (see SCAN (F7)) accesses a port or an invalid entry is made on an OSC menu. • Select Y (Yes) to activate the beeper (default). • Select N (No) to deactivate the beeper.

Main Option	Description
SET QUICK VIEW PORTS	Quick View ports allow users to scan and view selected ports, saving time for a large installation base. To select which ports are included as Quick View ports, select or deselect a port by either double-clicking the port or moving the highlight bar to the port and pressing ENTER. An arrowhead in the QV column on the main menu list, indicates ports selected as Quick View. Setting a port as a Quick View port causes the following: • If a user selects either the QVIEW or QVIEW + POWER ON options for LIST (F2), only those ports selected as Quick View appear in the main menu list. • If a user selects either the QVIEW or QVIEW + POWER ON options for SCAN/SKIP MODE, only those ports selected as Quick Views are auto-scanned.
SET ACCESSIBLE PORTS	You can determine user access to connected computers on a port-by-port basis: • F (full access) default • V (view only) • Blank (no access): The port does not display on the user's main menu list. To set user access, select the target port, and press the SPACEBAR to cycle through each selection (F, V, blank). Repeat for all user access rights, and press ENTER when finished.
RESET STATION IDS	If you change a KVM station position in the serial connection, OSD settings no longer correspond with the position. Use this function to re-scan KVM station position and update the OSD. **NOTE:** Only KVM station numbers update. You must reset all administrator settings for all KVM stations affected by the change. Port names are not affected.
FIRMWARE UPGRADE	Activate Firmware Upgrade mode to upgrade the KVM Switch's firmware.

To recover from a lost password:

1. Turn off the power to the KVM Switch.
2. Open the cover of KVM Switch, and short the jumper marked "Restore Default Password".
3. Turn the power of KVM Switch while this jumper is shorted. Wait until the LEDs stop blinking and then turn off the power.
4. Resume the jumper to the open position, and put the cover on.
5. Turn the power back on for the KVM Switch. The assigned user names and passwords will all be cleared. Start the OSD with the default user name and password.

SKP (F5). To activate the SKP function, press F5 or click the **F5** menu option at the top of the main menu screen.

SKP enables you to switch the console focus from the current active computer port to the next or preceding computer port. The SET function (see SET (F3)) determines which computers are available for Skip Mode switch selection.

For navigation functions, see the Hot Key summary table.

- When you select a port for Scan/Skip Mode, a triangle symbol appears to the left of the Port ID.
- The console does not function normally while in Skip mode. You must exit Skip mode to regain console control.
- To exit Skip mode, press the SPACEBAR or ESC.

BRC (F6). To activate the BRC function, press F6 or click the **F6** menu option located at the top of the main menu screen.

BRC is an Administrator function that enables Broadcast mode (BRC). In Broadcast mode, commands sent from the console are broadcast to all available computers connected to the KVM Switch system.

The BRC function is especially useful for performing operations on multiple computers, such as a system-wide shutdown or software upgrade. For example, if you turn Broadcast on and press CTRL+ALT+DEL, all computers listed on the OSD reboot.

F6 BRC works with the LIST function. LIST defines the ports that appear in the OSD main menu list. When you broadcast a command, only those ports that appear in the OSD main menu list receive the command.

While BRC mode is in effect:

- A speaker symbol appears next to the Port ID Display of the port with the current console focus.
- The mouse does not function normally. You must exit BRC mode to regain mouse control.
- To exit BRC mode, activate the OSD (use the OSD hotkey), and then press F6 or click the **F6** menu option.

SCAN (F7). To activate the SCAN function, press F7 or click the **F7** menu option at the top of the main menu screen.

SCAN allows you to switch automatically among available computers at regular user-defined intervals.

The SCAN function operates as follows:

- Use the F3 SET Scan/Skip Mode (see SCAN/SKIP MODE) setting to select the computers you want included each time you activate SCAN.
- Use F3 SET Scan Duration (see SCAN DURATION) to set the amount of time each port displays on-screen each time you activate SCAN. Press SPACEBAR to stop at a particular port and exit Auto Scan Mode.
- If scanning encounters an empty port or one with a corresponding computer that is turned off, the monitor screen appears blank and the mouse and keyboard input have no effect. Scanning moves to the next port after the assigned scan duration time.
- The letter S appears to the left of the Port ID display, indicating that the port is being accessed under Auto Scan Mode.
- The console does not function normally while in Auto Scan mode. Exit Auto Scan Mode to regain console control.
- Press P or left-click the mouse to pause scanning in order to keep the focus on a particular computer.
- To exit Auto Scan Mode, press the SPACEBAR or ESC.

LOUT (F8). To activate the LOUT function, press F8 or click the **F8** menu option at the top of the main menu screen.

LOUT logs you off and exits the OSD. To regain access to the OSD, you must activate and log on to the OSD. Pressing ESC instead temporarily deactivates the OSD, allowing you to regain access by pressing the OSD Hotkey without a login sequence.

Note

After you reenter the OSD, the OSD main menu appears and the screen stays blank. You must input your password to continue.

After re-entry, if you immediately press ESC without first selecting a port from the OSD menu, a Null Port message appears on-screen. Press the OSD hotkey to display the OSD main menu screen.

OSD default settings

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	Port Number + Port Name
Scan duration	5 seconds
Scan/Skip mode	ALL
Screen Blanker	0 (disabled)
Logout timeout	0 (disabled)
Beeper	Y (activated)
Accessible ports	F (full) for all users on all ports

Hot-Plugging

Description and Availablility

The KVM Switch supports hot-plugging: you can remove or add components to the system by unplugging or plugging their cables at the ports without shutting down the unit.

This feature may not work properly if your computer operating system does not support hot-plugging.

Operation

Switching station positions

Switch KVM station positions by unplugging a KVM station from one port and plugging it into a different one. Then, reset the OSD to correspond the change for the OSD menus.

See RESET STATION IDS for details.

Hot-Plugging computer ports

Manually reconfigure the OSD information for the new port information so that the OSD menus correspond to the change. See SET (F3) and ADM (F4) for details.

Hot-Plugging console ports

You can hot-plug the keyboard, the monitor, and the mouse. When hot-plugging the mouse:

- If you use the same mouse, unplug it and plug it back into the KVM Switch.
- If you use a different mouse, all KVM stations and computers on the installation must be shut down for ten seconds and then restarted after you plug in the mouse.

See also

See the *Installation and Quick-Start Manual* included with the KVM Switch for instructions on restarting the switch.

Note

If there is no response to keyboard or mouse input, press the **Reset** switch on the front panel.

Powering off and restarting

After turning off the KVM Switch for any reason, perform these steps. Before applying power to the KVM Switch:

1. Remove power from all connected computers.

Note

Unplug the power cord of any computer with the **Keyboard Power On** function enabled; otherwise, the station continues to receive power from the computers.

2. Wait 10 seconds, and then plug in the KVM Switch.
3. Apply power to the computers only after the KVM Switch is running.

Note

If you shut down more then one station, apply power to the highest-numbered station first, continuing down to the lowest-numbered station.

Port ID numbering

Each computer port on a KVM Switch system has a unique assigned Port ID. The Port ID includes two parts: a Station Number and a Port Number.

- Station Number—A two-digit number indicating the switch's position in the cascading sequence. The Station Number corresponds to the number displayed on the front panel **Station ID** LED.
- Port Number—A two-digit number indicating the corresponding connection port on the switch station.
- The Station Number precedes the Port Number.
- Station and Port numbers 1 through 9 include a leading zero and display as 01 through 09. For example, a computer attached to Port 6 of Station 12 has a Port ID of 12-06.

Port selection

Select ports by entering Hotkey combinations from the keyboard or by using the On-Screen Display (OSD).

See Selecting the active port for more information on Hotkey Port Selection. See OSD Operation for more information on Hotkey Port Selection.

Hot Key Operation

Features

Purpose

Hot Keys allow you to use keyboard sequences that perform a variety of actions for KVM Switch operations. This chapter provides information about each Hot Key operation and instructions for using the Hot Key port controls.

Hot Key Port Control

Hot Key Port Control allows you to monitor a computer directly from the keyboard. The KVM Switch includes the following Hot Key Port Control features:

- Selecting the Active Port
- Auto Scanning
- Skip Mode

Activating Hot Key Mode

To activate or deactivate Hot Key mode, press NUM LOCK and the hyphen key at the same time.

Release the hyphen key within ½ second. Otherwise Hot Key activation stops and has no effect.

When Hot Key mode is active, the following changes occur:

- Caps Lock and Scroll Lock LEDs flash in succession. These stop flashing and revert to normal status after you exit Hot Key mode.
- The screen displays the words `Hot Keys` and all subsequent keyed-in Hot Key information.
- Ordinary keyboard and mouse function have no effect. You may only input Hot Key-compliant keystrokes and mouse clicks (as described in the following sections).

Press ESC to exit Hot Key mode.

Keystroke Sequences

Selecting the active port

Each computer port is assigned a Port ID. Directly access any computer on the installation with a Hot Key combination that specifies the Port ID of the connected computer's port.

To select the active port:

1. Activate Hot Key mode by pressing NUM LOCK and the hyphen key at the same time.
2. Enter the Port ID.

The Port ID displays on the Command Line as you type each number. For example, enter `0305` to switch to Port 5 of the third KVM Switch on the chain. Use BACKSPACE to erase an incorrectly typed number.

3. Press ENTER. The KVM Switch will focus on the designated computer and exit Hot Key mode.

Auto Scan

Auto Scan automatically switches among all the active computer ports that are accessible to the currently logged-on User at regular intervals in order to monitor their activity.

For more information on Scan/Skip mode, see Skip mode.

Setting the Scan Interval. Use the Scan Duration setting of the OSD SET function to set the amount of time Auto Scan waits on each port. You can also change the scan interval before activating Hot Key Auto Scanning with the following Hot Key combination:

1. Activate Hot Key mode by pressing NUM LOCK and the hyphen key at the same time.
2. Type T and a number from 1 to 255 (the wait time, in seconds).

   The letter T and the numbers display on the command line as you type them. Use BACKSPACE to erase an incorrectly typed number.
3. Press ENTER.

Activating Auto Scan. To activate Auto-Scanning, enter the following Hot Key combination:

1. Activate Hot Key mode by pressing NUM LOCK and the hyphen key at the same time.
2. Press A. Hot Key mode stops automatically and Auto-Scanning begins.

How to pause Auto Scan. While in Auto Scan mode, pause scanning to keep the focus on a particular computer by either pressing P or left-clicking the mouse. While Auto-Scanning is paused, the command line displays `Auto Scan: Paused`.

To resume Auto-Scanning, press any key or left-click the mouse.

Use pausing if you want to keep the focus on a particular computer rather than exit Auto Scan mode. With this method, you start from where you stopped when scanning resumes. If you exit and restart, scanning begins from the first computer on the installation.

To exit Auto Scan mode, press ESC or SPACEBAR.

While Auto Scan mode is in effect, ordinary keyboard and mouse functions are suspended and only Auto Scan mode-compliant keystrokes and mouse clicks may be input. For normal control of the console, exit Auto Scan mode.

Skip mode

Skip mode allows you to monitor computers manually. Unlike Auto-Scanning, which automatically switches after a fixed interval, Skip mode lets you monitor a particular computer for a variable amount of time.

To activate Skip mode:

1. Activate Hot Key mode by pressing NUMLOCK and the hyphen key at the same time.
2. Skip by pressing the arrow keys.
3. To exit Skip mode, press ESC or SPACEBAR.

While Skip mode is in effect, ordinary keyboard and mouse functions are suspended and only Auto Scan mode-compliant keystrokes and mouse clicks may be input. For normal control of the console, exit Skip mode.

Hot Key Beeper control

Use Hot Keys to toggle the Beeper On and Off.

To toggle the Beeper:

1. Activate Hot Key mode by pressing NUMLOCK and the hyphen key at the same time.
2. Press B.

The Beeper toggles On or Off. The command line displays Beeper On or Beeper Off for one second, and Hot Key mode stops.

Hot Key summary table

The following table summarizes Hot Key operations on the KVM Switch:

Action		Description
NUM LOCK + hyphen	Port ID	Switches access to the computer corresponding to the port ID.
	T + number 1–255	Sets the Auto Scan interval to a number of seconds from 1 to 255.
	A	• Activates Auto Scan mode. • To pause Auto Scan, press P or left-click the mouse. • To resume Auto Scan, press any key or left-click the mouse.
	←	Activates Skip mode and skips from the current port to the preceding port.
	→	Activates Skip mode and skips from the current port to the next port.
	↑	Activates Skip mode and skips from the current port to the last port of the previous KVM station.
	↓	Activates Skip mode and skips from the current port to the first port of the next KVM station.
	B	Toggles the beeper on or off.

Firmware Upgrade

How to Upgrade Firmware

The Windows Firmware Upgrade Utility provides an automated method to upgrade the KVM Switch firmware. This software is included as part of a firmware upgrade package, specific for each device.

Check for the latest information, and download new versions of the firmware upgrade package at **www.apc.com**.

This chapter explains how to retrieve the firmware upgrade software and complete the upgrade process.

Before you begin

1. Use a computer that is not part of your KVM system and visit **www.apc.com**. Select your device model name to view a list of available firmware upgrade packages.
2. Select and download the firmware upgrade package you want to install (usually the most recent).
3. Connect a COM port on your computer to the **Firmware Upgrade** port on your KVM Switch with the Firmware Upgrade Cable (provided with the switch).

   For a serial installation, connect the cable to the first KVM station. The subsequent KVM stations in the chain receive the upgrade through the serial cable.
4. Turn off all computers on your KVM system. Do not turn off the KVM switch.

5. From your KVM switch console, activate the OSD (see OSD Operation), and select the F4 ADM function.
6. Scroll to **FIRMWARE UPGRADE**, and press ENTER.
7. Press Y to activate the firmware upgrade mode.

Starting the upgrade

To upgrade your firmware:

1. Start the firmware upgrade program that you previously downloaded by doing either of the following:
   – Double-click the file icon.
   – Click **Start** and then **Run**. Type the path to the file you want to open.
2. After the Firmware Upgrade Utility Welcome screen appears, read the License Agreement. Select **I Agree,** and click **Next**. The Firmware Upgrade Utility main screen appears.

The Utility inspects your installation. The **Device List** pane displays all devices that can be upgraded.

If the utility detects more than one Master Device (the First Stage KVM unit on a serial connection) in the system, an alert message appears requiring you to select the Master Device (and the KVM devices cascaded from it) that will receive the upgrade.

3. Select the KVM devices, and click **OK**.
4. Click **Next** to perform the upgrade.
   – If you enabled **Check Firmware Version**, the utility compares the firmware version of the KVM Switch with that of the downloaded file. If the device firmware version is higher, an alert message appears. Click **Yes** to continue or **No** to cancel the downgrade.

– If you did not enable **Check Firmware Version**, the utility installs the files without comparing the device firmware version with that of the upgrade files.

5. To abort the upgrade procedure before completion, click **Cancel**. An alert message appears warning you that stopping at this point may cause the device's firmware to be lost. You can continue or abort the cancel operation.

To recover from a "lost firmware" situation, see Firmware upgrade reset switch.

6. After the upgrade process has completed, a message confirms the result:
   – If the upgrade succeeded, click **Finish** to close the Firmware Upgrade Utility.
   – If the upgread was unsuccessful, click **Yes** to retry or **No** to stop the process. Click **Cancel** to close the Firmware Upgrade Utility.

Product Information

Warranty and Service

Limited warranty

APC warrants the KVM Switch to be free from defects in materials and workmanship for a period of two years from the date of purchase. Its obligation under this warranty is limited to repairing or replacing, at its own sole option, any such defective products. This warranty does not apply to equipment that has been damaged by accident, negligence, or misapplication or has been altered or modified in any way. This warranty applies only to the original purchaser.

Warranty limitations

Except as provided herein, APC makes no warranties, express or implied, including warranties of merchantability and fitness for a particular purpose. Some jurisdictions do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchaser.

Except as provided above, in no event will APC be liable for direct, indirect, special, incidental, or consequential damages arising out of the use of this product, even if advised of the possibility of such damage.

Specifically, APC is not liable for any costs, such as lost profits or revenue, loss of equipment, loss of use of equipment, loss of software, loss of data, costs of substitutes, claims by third parties, or otherwise. This warranty gives you specific legal rights and you may also have other rights, which vary according to jurisdiction.

Obtaining service

To obtain support for problems with your KVM Switch:

1. Note the serial number and date of purchase. The serial number is printed on a label on the bottom of the KVM Switch.
2. Contact Customer Support at a phone number located at the end of this manual. A technician will try to help you solve the problem by phone.
3. If you must return the product, the technician will give you a return material authorization (RMA) number. If the warranty expired, you will be charged for repair or replacement.
4. Pack the unit carefully. The warranty does not cover damage sustained in transit. Enclose a letter with your name, address, RMA number and daytime phone number; a copy of the sales receipt; and a check as payment, if applicable.
5. Mark the RMA number clearly on the outside of the shipping carton.
6. Ship by insured, prepaid carrier to the address provided by the Customer Support technician.

Life-Support Policy

General policy

American Power Conversion (APC) does not recommend the use of any of its products in the following situations:

- In life-support applications where failure or malfunction of the APC product can be reasonably expected to cause failure of the life-support device or to affect significantly its safety or effectiveness.
- In direct patient care.

APC will not knowingly sell its products for use in such applications unless it receives in writing assurances satisfactory to APC that (a) the risks of injury or damage have been minimized, (b) the customer assumes all such risks, and (c) the liability of American Power Conversion is adequately protected under the circumstances.

Examples of life-support devices

The term *life-support device* includes but is not limited to neonatal oxygen analyzers, nerve stimulators (whether used for anesthesia, pain relief, or other purposes), autotransfusion devices, blood pumps, defibrillators, arrhythmia detectors and alarms, pacemakers, hemodialysis systems, peritoneal dialysis systems, neonatal ventilator incubators, ventilators (for adults and infants), anesthesia ventilators, infusion pumps, and any other devices designated as “critical” by the U.S. FDA.

Hospital-grade wiring devices and leakage current protection may be ordered as options on many APC UPS systems. APC does not claim that units with these modifications are certified or listed as hospital-grade by APC or any other organization. Therefore these units do not meet the requirements for use in direct patient care.

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APC Worldwide Customer Support

Customer support for this or any other APC product is available at no charge in any of the following ways:

- Visit the APC Web site to find answers to frequently asked questions (FAQs), to access documents in the APC Knowledge Base, and to submit customer support requests.
  - **www.apc.com** (Corporate Headquarters)

    Connect to localized APC Web sites for specific countries, each of which provides customer support information.
  - **www.apc.com/support/**

    Global support with FAQs, knowledge base, and e-support.
- Contact an APC Customer Support center by telephone or e-mail.
  - Regional centers:

Direct InfraStruXure Customer Support Line	(1)(877)537-0607 (toll free)
APC headquarters U.S., Canada	(1)(800)800-4272 (toll free)
Latin America	(1)(401)789-5735 (USA)
Europe, Middle East, Africa	(353)(91)702000 (Ireland)
Japan	(0) 35434-2021
Australia, New Zealand, South Pacific area	(61) (2) 9955 9366 (Australia)

  - Local, country-specific centers: go to **www.apc.com/support/contact** for contact information.

Contact the APC representative or other distributor from whom you purchased your APC product for information on how to obtain local customer support.

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