Owner's Manual

NetDirector® 1U Rack-Mount 4K/60 Hz DisplayPort KVM Switch with Audio

8-Port Model: B024-DPU08

16-Port Model: B024-DPU16

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1. FCC Information

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

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. The user must use shielded cables and connectors with this equipment. Any changes or modifications to this equipment not expressly approved by Tripp Lite could void the user's authority to operate this equipment.

2. 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. **VERIFY THAT THE VOLTAGE SETTING IS CORRECT BEFORE USE.**

3. Package Contents

• NetDirector B024-DPU08 / B024-DPU16 Rack-Mount KVM Switch with Audio
• (x2) DisplayPort 1.4 Cables
• (x2) USB 3.0 Cables
• (x2) Audio Cables
• Firmware Upgrade Cable
• Foot Pad Set (4 pc.)
• Power Adapter
• Owner's Manual

Check to ensure all 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 installation.

4. Features

- One USB console controls up to eight (B024-DPU08) or sixteen (B024-DPU16) DisplayPort interface computers and two additional USB 3.0 peripheral devices.
- Cascadable to two levels – controls up to 128/256 computers.
- Multi-Display feature – stack up to eight units and display video from up to 8 monitors (dual-display/triple-display/quad-display/multi-display).
- Video DynaSync™ eliminates bootup display problems and optimizes the resolution when switching among different sources.
- EDID Expert™ selects optimum EDID mode for smooth power-up and highest quality display.
- Supports DisplayPort video output and allows you to choose an appropriate video output and deploy console with flexibility.
- Superior video quality – up to 4K DCI (4096 x 2160 @ 60 Hz) resolution.
- Built-in 2-port USB 3.1 Gen 1 hub with SuperSpeed 5 Gbps data transfer rates.
- Audio enabled – full bass response provides a rich experience for 2.1 channel stereo sound.
- Supports HD audio.
- Computer selection via pushbuttons, hotkeys, OSD, and RS-232 commands.
- Independent switching of KVM and USB peripheral focus.
- Two-level (administrator/user) password authorization for enhanced security protection.
- Broadcast mode – operations can be simultaneously performed on all selected computers, such as software installation and upgrading, systemwide shutdown, etc.
- Auto Scan Mode for monitoring all computers.
- Console mouse port emulation/bypass feature supports most mouse drivers and multifunction mice.
- Multilingual keyboard mapping – supports English (US), English (UK), German (GER.), German (SWISS), French, Hungarian, Italian, Japanese, Korean, Russian, Spanish, Swedish, Traditional Chinese, and Simplified Chinese.
- Mac/Sun keyboard support and emulation.
- Supports hot-plugging.
- DisplayPort 1.2 compliant and HDCP 2.2 compliant.
- Multi-platform support for Windows, Linux, Mac, and Sun operating systems.
- Firmware upgradable.
- Supports multimedia, wireless keyboards and mouse.

5. System Requirements

5.1 Console

• DisplayPort compatible monitor capable of the highest possible resolution in the installation

  Note: For multi-display installations, multiple monitors are required. See 7.3.3 Multi-Display Installation for details.

• USB mouse

• USB keyboard

• Speakers (optional)

5.2 Computers

• A DisplayPort card or built-in DisplayPort

  Notes:

  • *The quality of the display is affected by the quality of the DisplayPort card. For best results, we recommend you purchase a high-quality product.*

  • *For multi-display installations, multiple monitors are required. See 7.3.3 Multi-Display Installation for details.*

• USB-A port

• Audio ports (optional)

5.3 Cables

• Only custom USB DisplayPort KVM cable sets, which are specifically designed to work with this switch, may be used to link to the computers (two cable sets are provided)

  Note: The quality of the display is affected by the quality and length of the cables. If additional cable sets are needed, please contact your dealer to purchase the appropriate ones for your switch.

• For multi-display installations, standard USB-A to USB-B cables and standard DisplayPort cables are also required

  Note: The B024-DPU08 and B024-DPU16 supports speaker ports only. Do not connect the microphone connector from the KVM cable sets.

5.4 Operating Systems

OS		Supported Versions
Windows		Windows Server 2008, 2012, 2016, 2019 / Windows 7 SP1 / Windows 8 / Windows 8.1 / Windows 10
Linux	CentOS	7 and higher
	OpenSUSE Leap 15.1 Snapshot8	10.26 and higher
	Ubuntu	16.0.4 and higher
	NeoKylin	v7.0
Sun	Sun Soloaris	11.3 and higher
Mac		10.6 and higher

Notes:

• *Supports Linux Kernel 2.6 and higher.*

• *The B024-DPU08 and B024-DPU16 have a built-in USB 3.1 hub. They do not support PCs or operating systems that do not support USB 3.1.*

5. System Requirements

5.5 Components

Front View

B024-DPU08

B024-DPU16

No.	Component	Description
1	Port Selection Pushbuttons	For manual port selection:
		• Press a port selection pushbutton for less than two seconds to bring the KVM, USB hub and audio focus to the computer attached to its corresponding port.
		• Press a pushbutton for longer than two seconds to bring the KVM and audio focus to the computer attached to its corresponding port.
		• Press pushbuttons 1 and 2 simultaneously for 2 seconds to perform a keyboard and mouse reset. See section **10.6 Keyboard / Mouse Reset** for details.
		• Press pushbuttons 7 and 8 simultaneously for 2 seconds to start Auto Scan Mode.
2	Port LEDs	The Port LEDs are built into the Port Selection Switches. The left ones are the KVM Port LEDs; the right ones are the USB LEDs:
		KVM
		• Lights DIM ORANGE to indicate the computer attached to the corresponding port is up and running (on line).
		• Flashes to indicate that Firmware Upgrade mode is in effect.
		• Changes to BRIGHT ORANGE to indicate that the computer attached to its corresponding port is the one that has the KVM focus (selected).
		• Flashes to indicate that the computer attached to its corresponding port is being accessed under Auto Scan mode.
		USB
		• Lights GREEN to indicate that the computer attached to its corresponding port is the one that has access to the USB peripherals.

5. System Requirements

No.	Component	Description
3	Firmware Upgrade Recovery Switch	During normal operation and while performing a firmware upgrade, this switch should be in the NORMAL position. If a firmware upgrade operation does not complete successfully, this switch is used to perform a firmware upgrade recovery. See section **13.6 Firmware Upgrade Recovery** for details.
4	Audio Jack	The cables from your main speakers plug in here.
		Note: The speakers plugged into the front-panel audio jack have priority over those in the rear panel.
5	Firmware Upgrade Port	The firmware upgrade cable that transfers the firmware upgrade data from the administrator's computer to the KVM switch via this RJ-11 connector.
6	USB 3.1 Gen 1 Peripheral Hub Section	USB 3.1 peripherals (printers, scanners, etc.) plug into this port (this may require an extra power adapter).
		Note: The USB 3.1 hub cannot be accessed through the switch by computers on the second level of a cascaded installation.
7	Reset Button	Pressing this switch performs a system reset. When the system resets, the switch beeps and the port LEDs flash in succession until the reset is complete. After the reset is complete, you can login again.
		Note: This switch is recessed and must be pushed with a small object, such as the end of a paper clip or a ballpoint pen.
8	Power LED	Lights to indicate that the switch is powered up and ready to operate.

5. System Requirements

Rear View

B024-DPU08
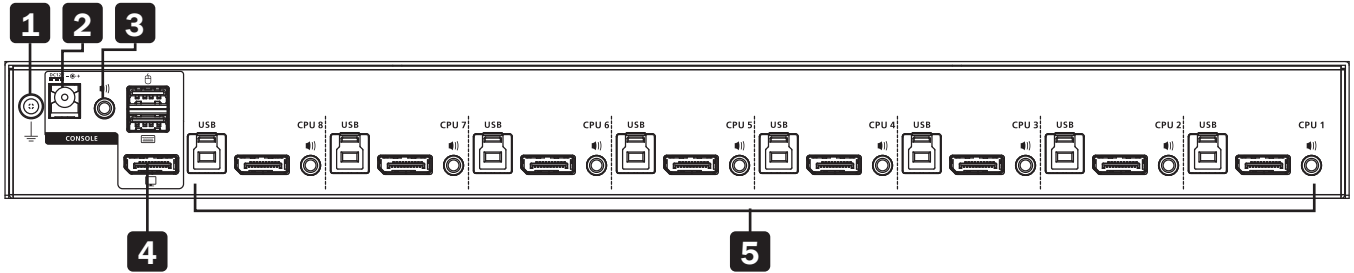
B024-DPU16
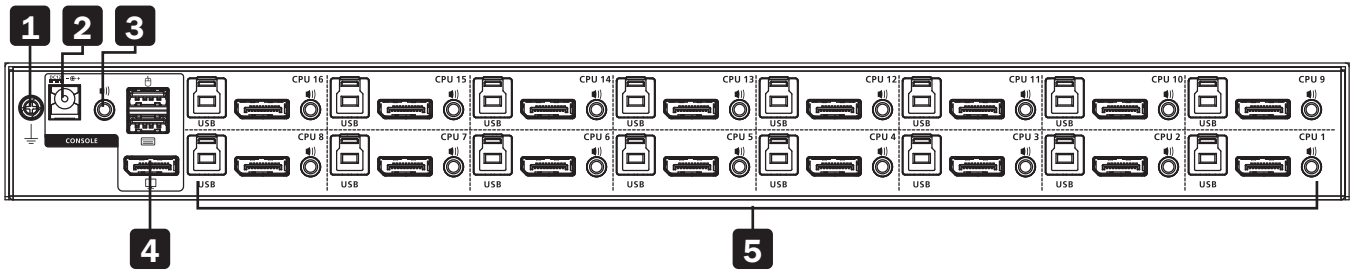
No.	Component	Description
1	Grounding Terminal	The grounding wire used to ground the switch attaches here.
2	Power Jack	The power adapter cable plugs in here.
3	Audio Jack	The cables from your main speakers plug in here. *Note: The speakers plugged into the front panel audio jack have priority over those plugged in here.*
4	Console Port Section	The cables from your console DisplayPort monitor, USB keyboard, USB mouse, and speakers plug in here. Each connector is marked with an appropriate icon to indicate itself.
5	KVM Port Sections	The cables that link the switch to your computers plug in here. Each KVM port section is comprised of a speaker jack, a USB type B socket, and DisplayPort connector.

6. Important Safety Instructions

6.1 General Safety Instructions

- Read all of these instructions and save them for future reference.

- Follow all warnings and instructions marked on the device.

- Do not place the device on any unstable surface. 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 protect against overheating, these openings should never be blocked or covered.

- The device should never be placed on a soft surface such as a bed, sofa of rug. Doing so will block the device's ventilation openings. Moreover, the device should not be placed in a built-in enclosure unless adequate ventilation has been provided.

- Never spill liquid of any type on the device.

- Unplug the device from the wall outlet before cleaning. Use a damp cloth for cleaning. Do not use liquid or aerosol cleaners.

- The device should be operated from the power source indicated on the marking label. If uncertain of the power available, consult your dealer or local power company.

- The device is designed for IT power distribution systems up to 230V phase-to-phase voltage.

- As an added safety feature, the device is equipped with a 3-wire grounding type plug. If unable to insert the plug into the outlet, contact an electrician to replace the obsolete outlet. Do not attempt to plug into a two-prong ungrounded outlet. Always follow local/national wiring codes.

- Do not allow anything to rest on the power cord or cables. Route the power cord and cables to avoid them being stepped on or tripped over.

- If an extension cord is used with this device, ensure the total ampere ratings of all products used on the extension cord do not exceed its rated ampere rating. Also ensure all products plugged into the wall outlet does not exceed a total of 15 amperes.

- Consideration should be given to the connection of equipment and the supply circuit, as well as what effect overloading the supply circuit might have on overcurrent protection and supply wiring.

- To help protect the system from unexpected transient increases and decreases in electrical power, use a Tripp Lite Surge Protector, Line Conditioner, or Uninterruptible Power Supply (UPS).

- Position system cables and power cables carefully so 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; refer all servicing to qualified service personnel.

6. Important Safety Instructions

- 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 controls covered in the operating instructions. Improper adjustment of other controls may result in damage that will require extensive work by a qualified technician to repair.
- Do not connect the RJ-11 connector marked "UPGRADE" to a public telecommunication network.
- Use of this equipment in life support applications where failure of this equipment can reasonably be expected to cause the failure of the life support equipment or to significantly affect its safety or effectiveness is not recommended.

6.2 Rack-Mounting Safety Instructions

- The ambient operating temperature in the rack may be an issue and is dependent upon the rack load and ventilation. When installing in a closed or multi-device rack assembly, ensure the temperature will not exceed the maximum rated ambient temperature.
- Before installing the rack, ensure the stabilizers are secured to the rack, extended to the floor and 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 with the heaviest item loaded into the rack first.
- When loading the rack, avoid creating a hazardous condition due to uneven loading.
- Ensure the rack is level and stable before extending a device from the rack.
- Use caution when pressing the rail release latches or sliding a device into or out of a rack; slide rails can pinch your fingers.
- After a device is inserted into the rack, carefully extend the rail into a locking position, 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.
- **Caution!** Slide/Rail (LCD KVM) mounted equipment is not to be used as a shelf or work space.

7. Installation

The B024-DPU08 and B024-DPU16 can be stacked on a desktop or rack mounted at the front or rear of a rack.

Notes:

- *Allow at least 2 inches (5.1 cm) on each side for adequate ventilation and 5 inches (12.7 cm) at the rear for power cord and cable clearance.*

- *The standard rack mounting kit does not include screws or cage nuts. If you need additional screws or cage nuts, contact your rack dealer.*

7.1 Stacking

The B024-DPU08 and B024-DPU16 can be placed on any level surface that can safely support the weight of the device and the weight of the attached cables. Make sure the surface is clean and free of any materials that can block the exhaust vents or otherwise interfere with normal operation of the switch.

To place the B024-DPU08 and B024-DPU16 (or to stack units if you are cascading them), remove the backing material from the bottom of the rubber feet and stick them onto the bottom panel at the corners, as shown below:
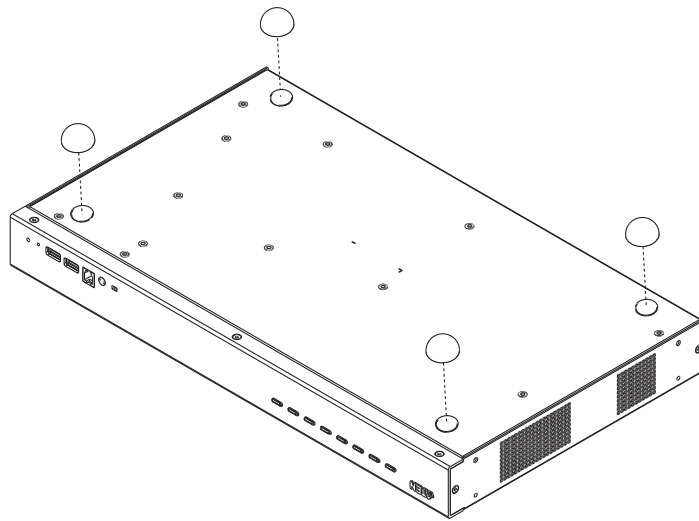
7.2 Rack Mounting

7.2.1 Front Rack-Mounting

1. Remove each of the screws from the left and right sides near the front of the unit.
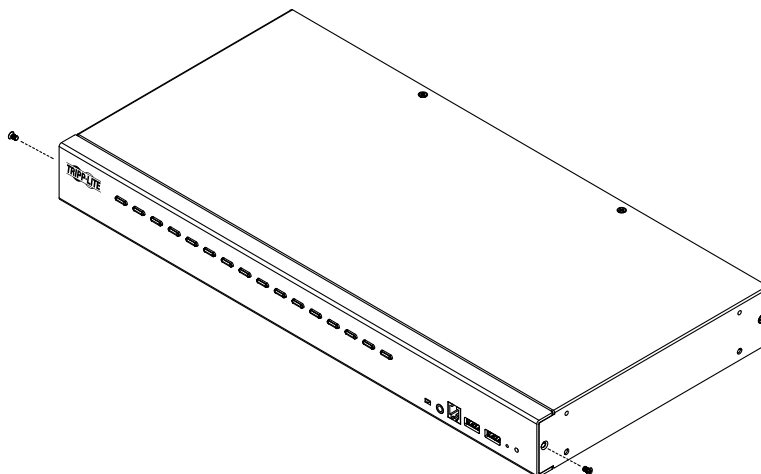
7. Installation

2. Use the M3 x 6 Phillips hex head screws supplied with the rack mounting kit to attach the rack mounting brackets onto the sides near the front of the unit.
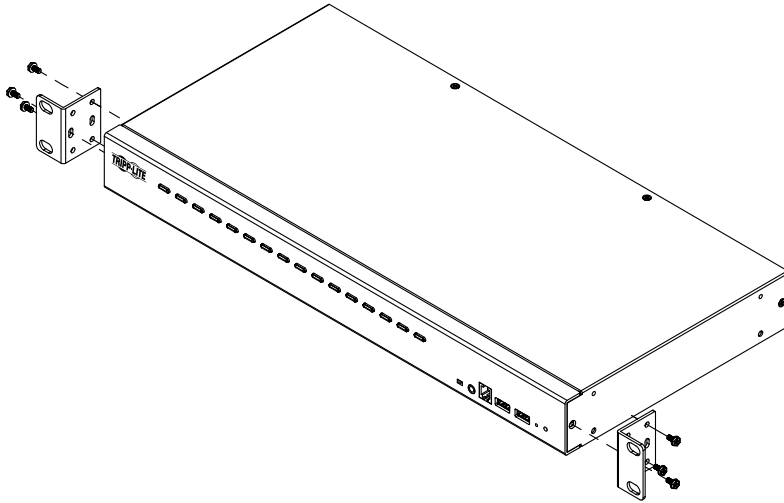
3. Place the KVM switch in the rack. Position it so that the holes in the mounting brackets line up with the holes in the rack. Secure the mounting brackets to the front of the rack.
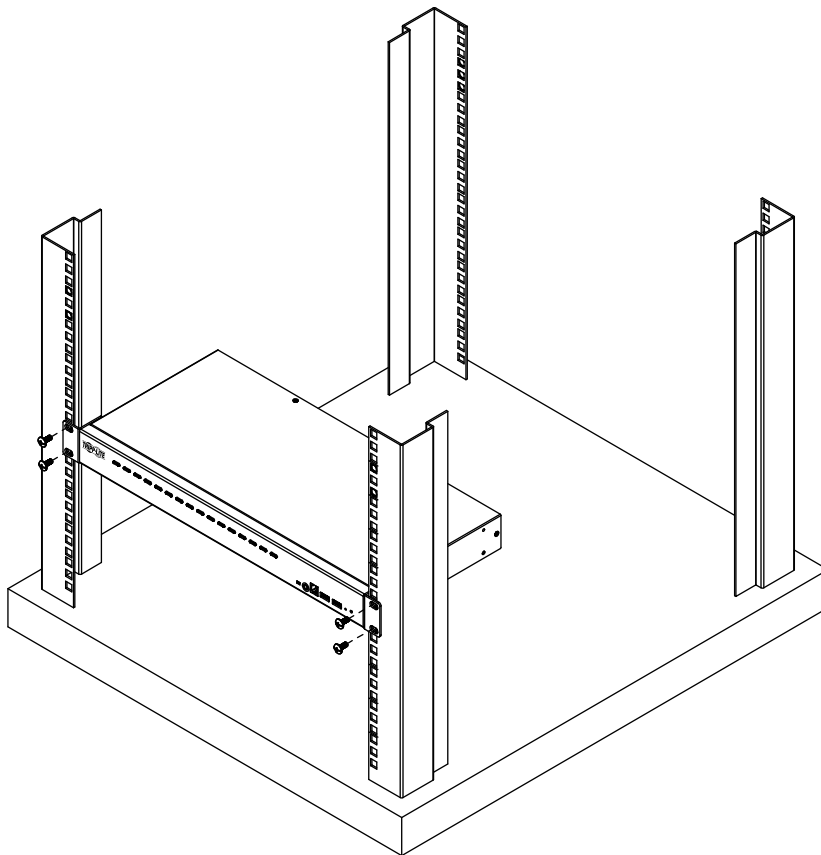
7. Installation

7.2.2 Rear Rack-Mounting

1. Remove each of the screws from the left and right sides near the rear of the unit.
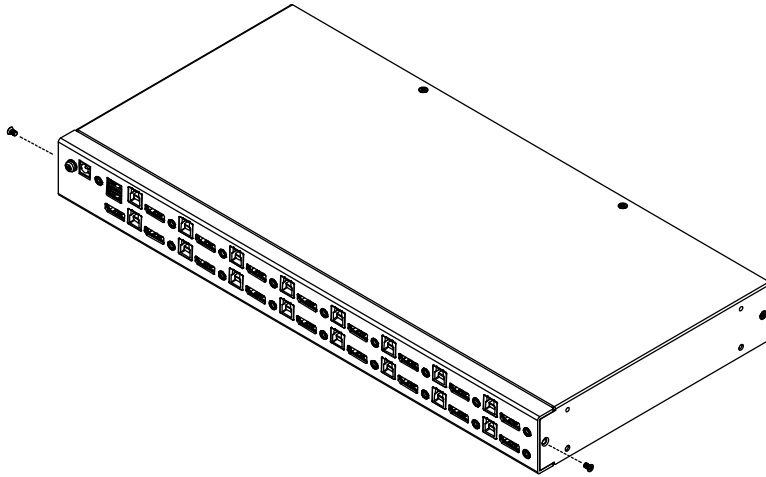
2. Use the M3 x 6 Phillips hex head screws supplied with the rack mounting kit to attach the rack mounting brackets onto the sides near the rear of the unit.
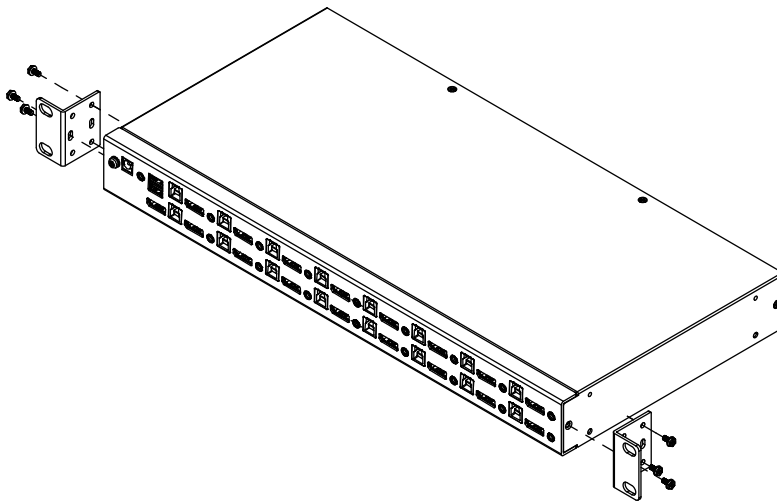
7. Installation

3. Place the KVM switch in the rack. Position it so that the holes in the mounting brackets line up with the holes in the rack. Secure the mounting brackets to the rear of the rack.
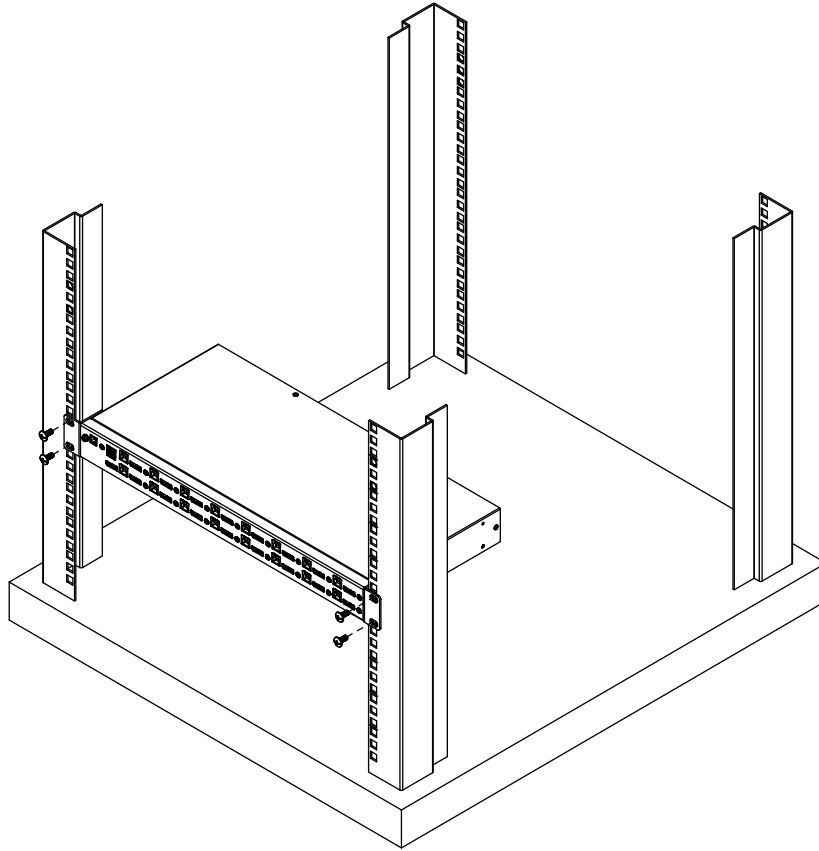
7. Installation

7.3 KVM Switch Installation

7.3.1 Single-Stage Installation

To set up the console KVM switch, refer to the following steps and installation diagram.

Note: B024-DPU16 model shown. The port locations are the same for the B024-DPU08, except for the number of KVM ports.

Front

Rear

DisplayPort Cable
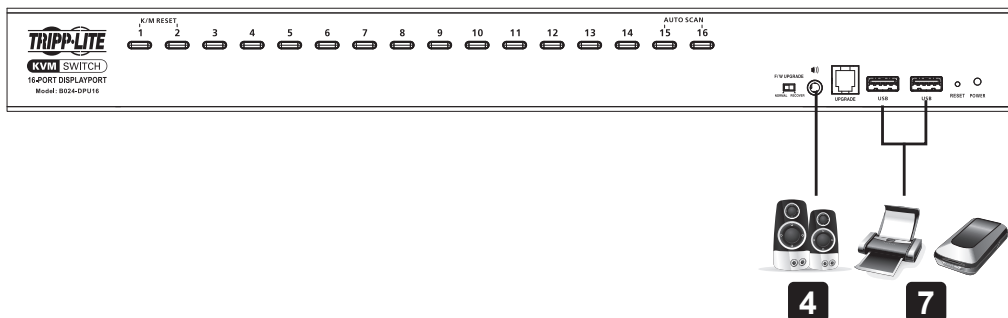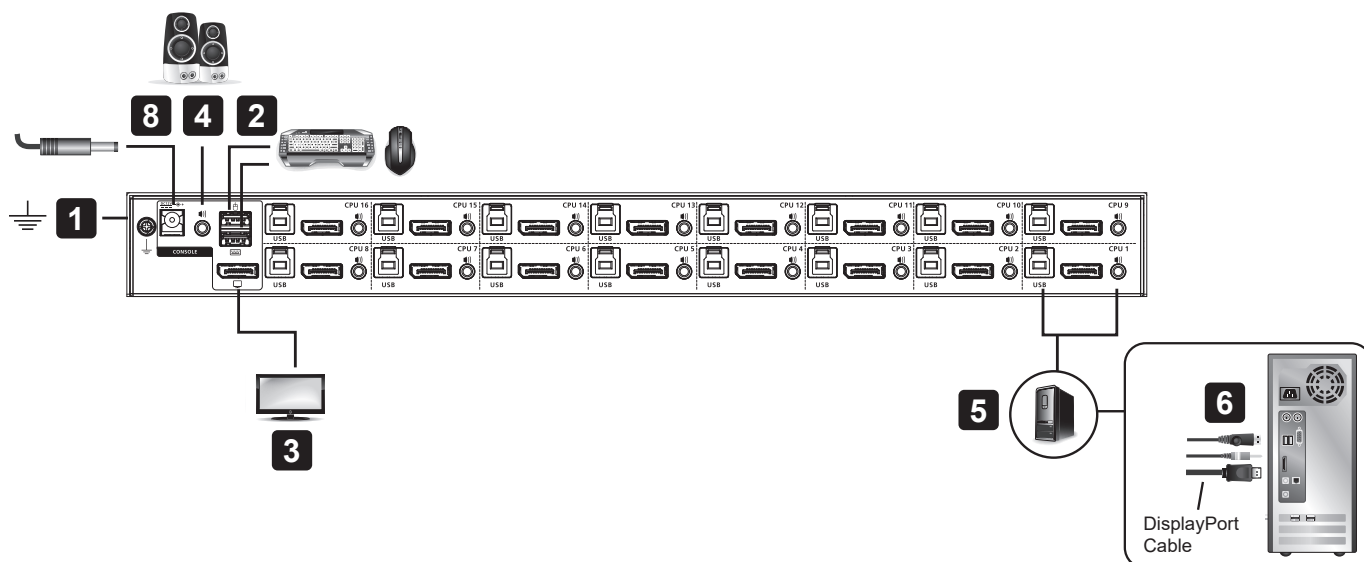
1   Ground the KVM by connecting one end of a grounding wire to the KVM's grounding terminal and the other end to a suitable grounded object.

Note: Do not omit this step. Proper grounding helps to prevent damage to the unit from power surges and static electricity.

2   Plug your USB keyboard and USB mouse into the unit's USB console ports.

3   Plug your DisplayPort and/or HDMI monitor(s) into the DisplayPort console port, then power on the monitor(s).

4   Plug your speakers into the audio jacks located on the unit's front and rear panel.

Note: The speakers plugged into the front panel have priority over those plugged into the rear panel.

5   Use the provided cable sets (DisplayPort cable, USB 3.0 cable, and audio cable) with this package. Plug the DisplayPort connector into any available DisplayPort port in the KVM Ports Section of the switch (CPU 1, CPU 2, etc.), then plug the USB 3.0 cable and audio cable into their corresponding ports.

Notes:

• Verify that all the connectors are in the same KVM Ports Section (all in CPU 1, all in CPU 2.).

• The KVMs only support audio speakers. Do not connect a KVM cable's microphone connector to the speaker ports.

7. Installation

6   At the other end of the cables from step 5, plug the DisplayPort cable, USB 3.0 cable, and audio cables into their respective ports on the computer. Repeat steps 5 and 6 for other PC systems you are installing.

7   **(Optional)** Plug your USB peripherals into the USB Type-A ports in the USB 3.1 Gen1 Peripheral Hub located on the unit's front panel.

8   Plug the power adapter that came with your switch into an AC power source, then plug the power adapter cable into the KVM's power jack.

9   Power on the computers.

Note: Make sure all computers and devices connected to the KVM are also properly grounded.

7.3.2 Two-Stage Cascade Installation

To control even more computers, additional KVM switches can be cascaded from the KVM ports of the First Stage unit. The cascaded KVMs that connect back to the First Stage unit are considered Second Stage units. As many as 128 (B024-DPU08) or 256 (B024-DPU16) computers can be controlled in a complete two-stage installation. Tables showing the relation between the number of computers and the number of units needed to control them is provided in section **14.1 B024-DPU08 and B024-DPU16 Connection Tables**.

USB DisplayPort KVM Cable Set
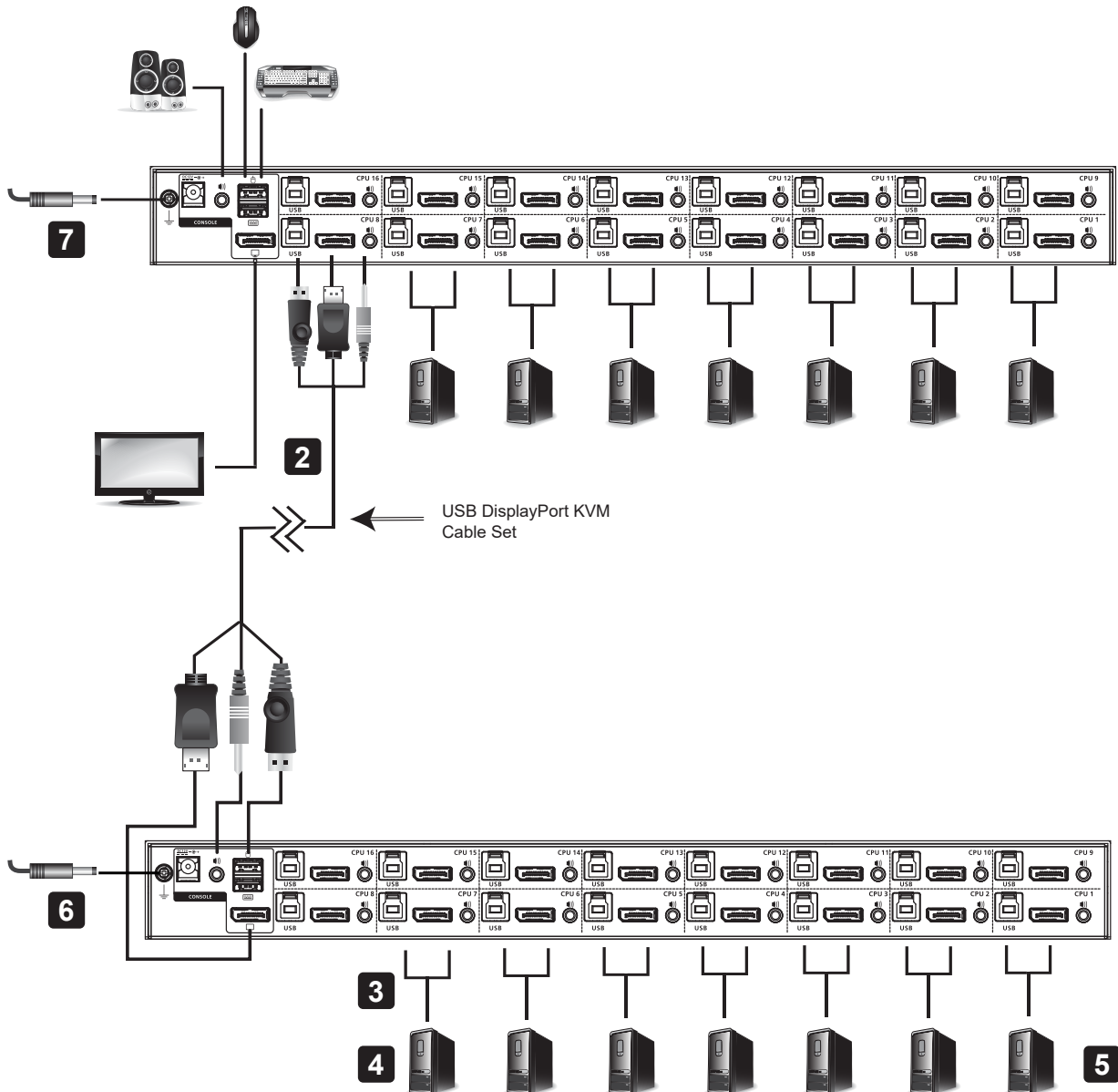
7. Installation

1 Make sure that power to all the devices you will be connecting—including all preexisting devices on the installation—have been turned off.

2 Use the provided cable sets (DisplayPort cable, USB 3.0 cable, and audio cable) to connect the First Stage unit to the console ports of the Second Stage unit.

Note: Plug the USB Type-A connector into the lower USB (keyboard) port in the Console section (they are both marked with a similar icon to remind you of the correct USB port).

3 Using another provided cable set (DisplayPort cable, USB 3.0 cable and audio cable), plug the DisplayPort connector into any available DisplayPort in the KVM Ports Section of the second stage switch, then plug the accompanying USB Type-B cable and audio cable into their corresponding USB and audio jacks.

Notes:

- *Verify all connectors are in the same KVM Ports Section (all in CPU 1, all in CPU 2, etc.) and that each port is marked with an appropriate icon to indicate itself.*

- *The KVMs only support audio speakers. Do not connect a KVM cable's microphone connector to the speaker ports.*

4 At the other end of the cables from step 3, plug the DisplayPort cable, USB 3.0 cable and audio cables into their respective ports on the computer.

5 Repeat steps 3 and 4 for any other PC systems you are installing.

6 For each Second Stage unit, plug the power adapter cable into its Power Jack, then plug the power adapter into an AC source.

7 Plug the First Stage unit's power adapter cable into its Power Jack, then plug the power adapter into an AC source.

8 Power on the computers.

Notes:

- *The power-on sequence requires that Second Stage units be powered on first. After they are all powered on, the First Stage units must be powered on next. Only after all KVM switches have been powered on in this sequence can the computers be powered on.*

- *The USB 3.1 hub cannot be accessed through the switch by computers on the second level of a cascaded installation.*

- *Make sure the computers and devices connected to the KVMs are also properly grounded.*

7. Installation

7.3.3 Multi-Display Installation

The B024-DPU08 and B024-DPU16 multi-display feature allows you to stack up to 8 units in a dual/triple/quad-display/multi-display installation to control up to seven (B024-DPU08) or fifteen (B024-DPU16) computers at once. This installation requires slightly different cabling than the standard cascade and offers an extra level of switching flexibility for multiple-monitor installations where each computer is equipped with multiple video cards.

Note: In a multi-display installation, the B024-DPU08 can only be connected to B024-DPU08 units, and the B024-DPU16 can only be connected to B024-DPU16 units.
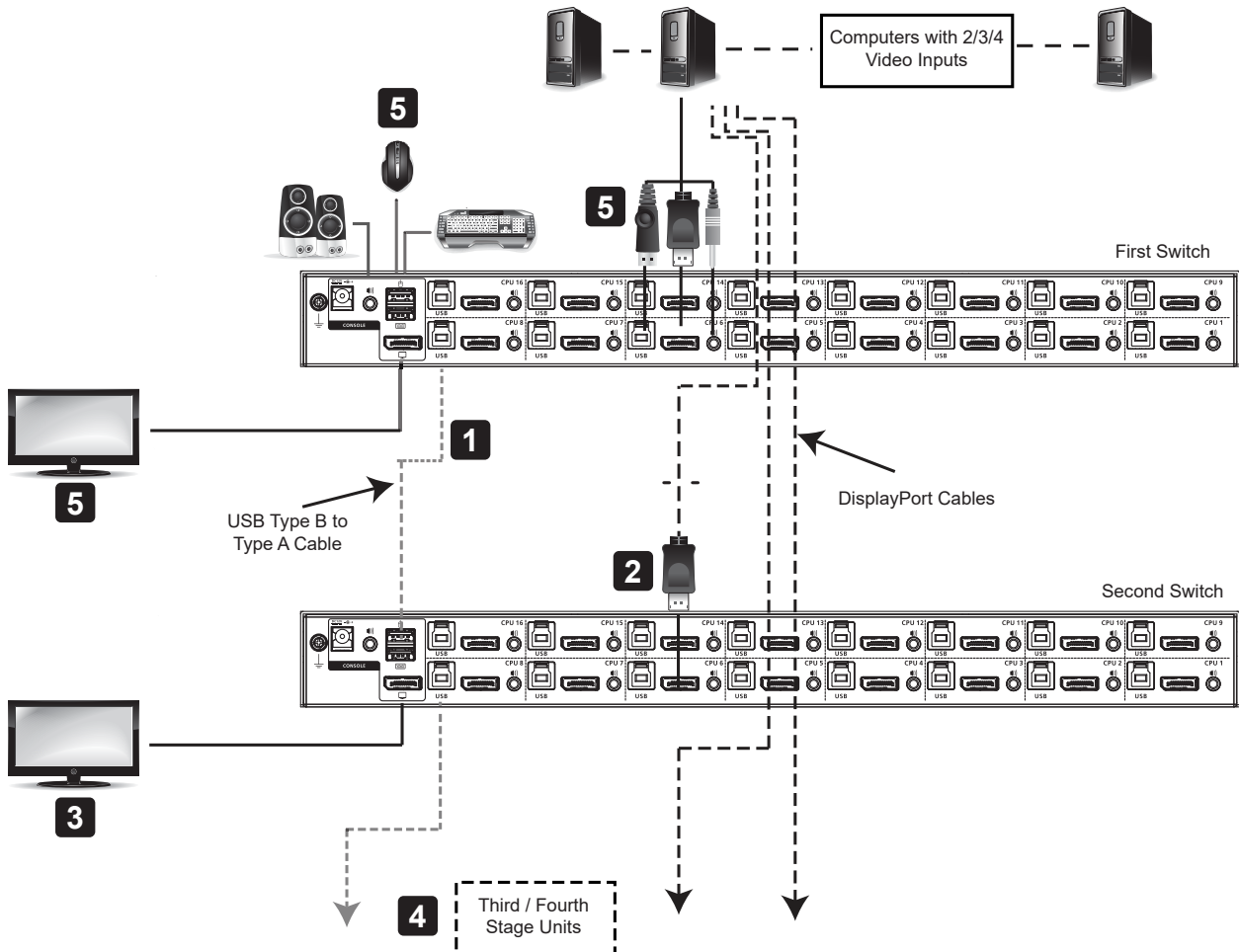
1 Use a standard USB Type-A to USB Type-B cable to connect the Port 8 USB Type-B port on the First Stage unit to the USB Type-A port in the Console Ports Section of the second switch.

   Notes:

   - *Port 8 is reserved to connect the units in a multi-display installation. Up to seven (B024-DPU08) or fifteen (B024-DPU16) computers can be attached, using KVM ports 1–7 (B024-DPU08) or ports 1–7/9–16 (B024-DPU16).*

   - *Plug the USB Type-A connector into the lower USB (keyboard) Port in the Console Port Section. Both USB Ports are marked with a similar icon to remind you of the correct USB port.*

2 Use DisplayPort cables to connect the KVM's DisplayPort on the second unit to the second video-in port on the computers.

   Note: Only DisplayPort video cables are necessary–all other ports in the KVM section are not required in this installation.

3 Connect a display to the console section of the second switch.

4 Repeat steps 1-3 for any additional units for a total of up to a total of 8 switches.

5 Connect the cables for the first switch (see section **7.3.1 Single-Stage Installation** for details). All video, audio and peripheral devices must be connected to the first switch.

7. Installation

6 Power up the KVM units, starting with the first switch, then power on the computers.

Note: Make sure the computers and devices connected to the KVMs are also properly grounded.

7.3.4 Grouping Ports into Vertical Channels

Once the cables have been connected and multi-display mode has been selected in the OSD, the KVM will auto-detect the channels and display modes. Users can then assign them a channel number as the port name so all the Port 1s become Channel 1, all the Port 2s become Channel 2, ... , and all the Port 7s become Channel 7. The ports will all be switched at the same time, channel by channel.

Depending on the number of stages in your stack, the KVM installation offers dual display (two stages), triple display (three stages), quad display (four stages) or multi-display (up to 8 stages) scenarios. For reference purposes, the example below shows a four-stage installation with quad display functionality.
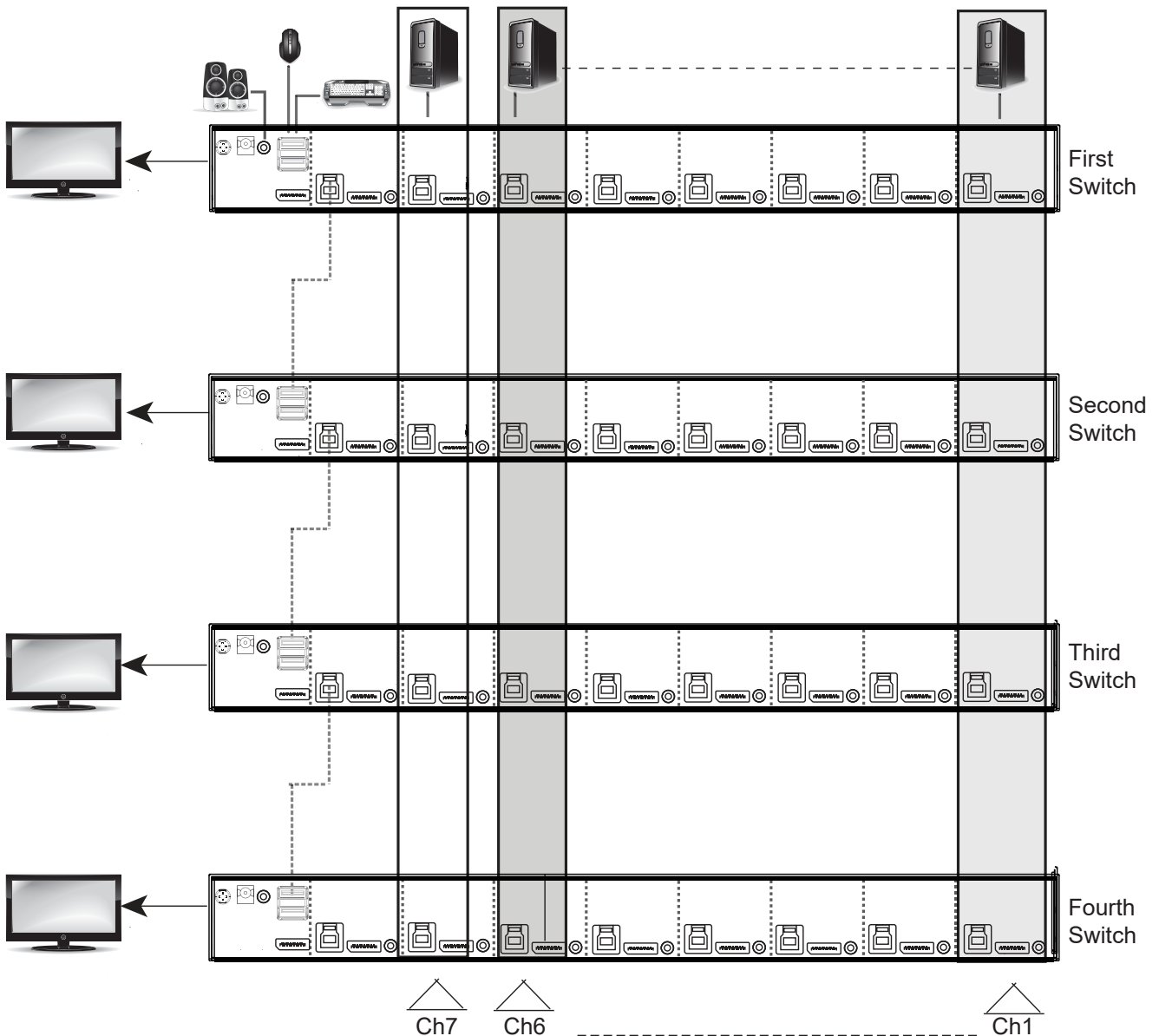
8. Basic Operation

8.1 Hot Plugging

The B024-DPU08 and B024-DPU16 KVMs support hot-plugging where components can be removed and added back into the installation by unplugging their cables from the ports without needing to shut the unit down. In order for hot plugging to work properly, the procedures described below must be followed:

8.1.1 Hot Plugging KVM Ports

In order for the OSD menus to correspond to KVM port changes, you must manually reconfigure the OSD to reflect the new port information (see **9.6.3 F3: Set** and **9.6.4 F4: Admin** for details).

Note: If the computer's operating system does not support hot plugging, this function may not work properly.

8.1.2 Hot Plugging Console Ports

The keyboard, monitor and mouse can all be hot plugged. When hot plugging the mouse:

• You may unplug and re-plug the mouse (e.g. to reset the mouse), as long the same mouse is used.

• If plugging in a different mouse, all computers on the installation must be shut down for 10 seconds, then restarted following the power up sequence described under Steps 6, 7, and 8 in section **7.3.2 Two-Stage Cascade Installation**.

Note: If after hot-plugging there is no response to keyboard and/or mouse input, perform a Keyboard and Mouse Reset by simultaneously pressing the 1 and 2 front panel pushbuttons.

8.2 Port Selection

The KVMs provide four port-selection methods to access the computers in the installation: Manual, an OSD (on-screen display) menu system, Hotkeys, and RS-232 commands.

• For OSD (on-screen display), see section **9. OSD Operation** for more information.

• For Hotkeys operation, see section **10. Hotkey Operation** for more information.

• For RS-232 commands, see section **12. RS-232 Operation** for more information.

Manual Port Switching

Use the front panel pushbutton switches to manually switch to a port.

8.3 Port ID Numbering

Each port on the KVM installation is assigned a unique Port ID. You can directly access any computer on any level of the installation by specifying the Port ID that the computer is connected to–either with the OSD (see **9. OSD Operation**), or with the Hotkey port selection method (see **10. Hotkey Operation**).

• A computer attached to a primary unit has a two-digit Port ID (from 01–08 for the B024-DPU08, or 01–16 for the B024-DPU16) that corresponds to the KVM port number it is connected to.

• A computer attached to a secondary unit has a four-digit Port ID.

The first two digits represent the KVM port number on the primary unit and the second two digits represent the KVM port number on the secondary unit the computer is connected to. For example, a Port ID of 02 to 08 would refer to a computer connected to KVM port 8 of a secondary unit that links back to KVM port 2 of the primary unit.

8. Basic Operation

8.4 Powering Off and Restarting the KVM

If it becomes necessary to power off a KVM switch, do the following before restarting it:

1. Unplug the KVM from its power source.

2. Shut down all computers that are attached to it.

Note: Unplug the power cords of any computers that have the Keyboard Power On function. Otherwise, the KVM will continue to receive power from the computers.

3. Wait 10 seconds, then plug the KVM back into its power source.

4. Power on the computers.

Note: If there are stations cascaded down from the primary KVM, all the cascaded stations and the computers attached to them must be shut down as well.

9. OSD Operation

The on-screen display (OSD) is a mouse- and keyboard-enabled, menu-driven method to handle computer control and switching operations. All procedures start from the OSD main screen.

9.1 OSD Login

The OSD incorporates a two-level (administrator/user) password system. Before the OSD main screen displays, a login screen appears requiring a password. If this is the first time the OSD is used, or if the password function has not been set, simply press [Enter]. The OSD main screen displays in administrator mode. In this mode, you have administrator privileges with access to all administrator and user functions, and can set up operations (including password authorization) as desired. If the password function has been set, you must provide an appropriate administrator/user password in order to access the OSD.
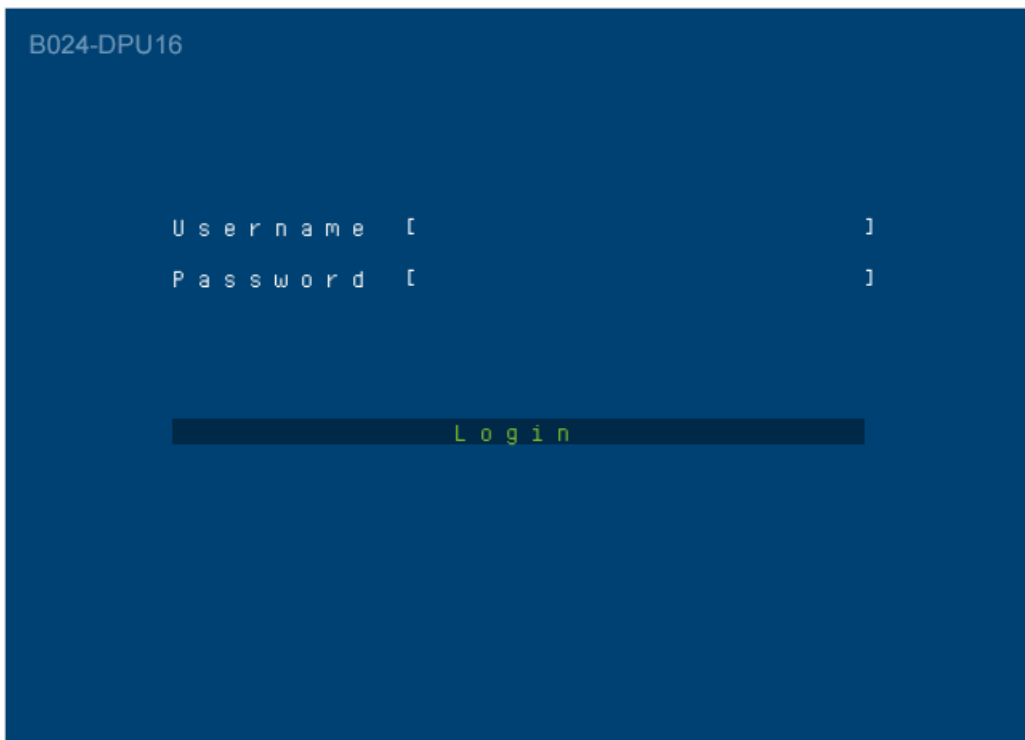
9.2 OSD Hotkey

You can display the OSD on the console monitor while also viewing the display of any port on the KVM by pressing the [Scroll Lock] key twice.

*Note: You can optionally change the OSD hotkey to the Ctrl key, in which case you would press [Ctrl] twice (see **9.2 OSD Hotkey**). With this method, you must press the same [Ctrl] key.*

9. OSD Operation

9.3 OSD Main Screen

When you invoke the OSD, a screen similar to the one below appears:
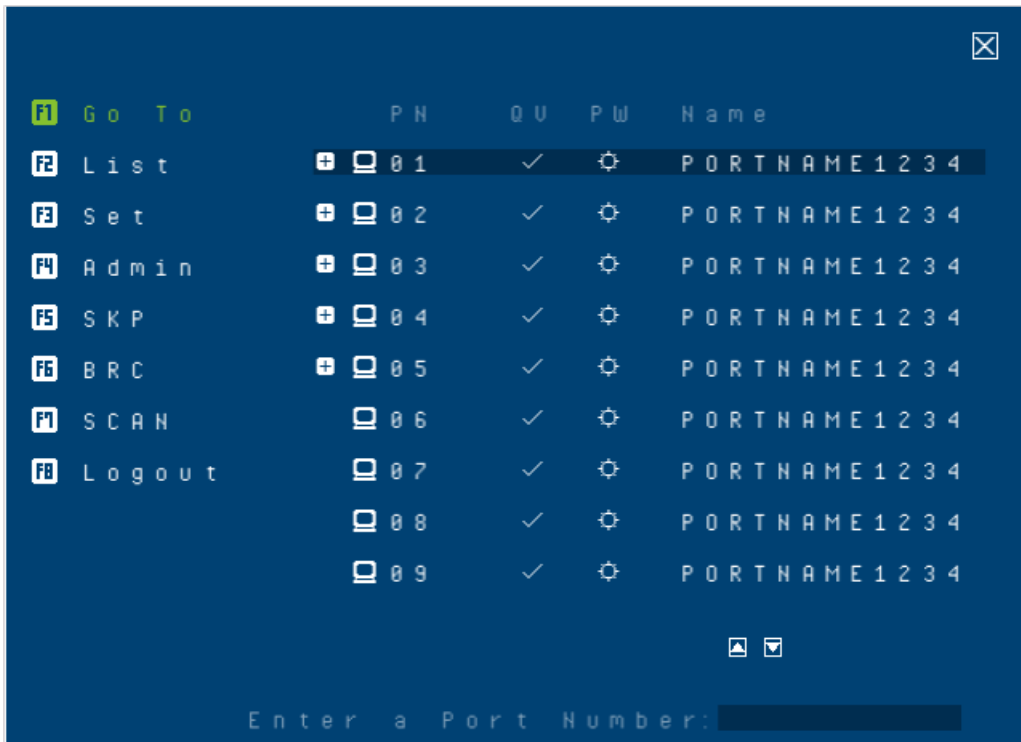
Notes:
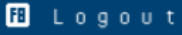
- *The diagram depicts the administrator's main screen. The user main screen does not show the F4 and F6 functions, since these are reserved for the administrator and cannot be accessed by users.*

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

- *Only the ports that have been set accessible by the administrator for the current logged in user are visible.*

- *Enable Mouse Emulation to operate the OSD using mouse. When the Mouse Emulation is disabled, you can only operate the OSD using the keyboard.*

  - *To enable the Mouse Emulation via OSD, refer to "Mouse Emulation" in the table in section **9.6.4 F4: Admin** for details.*

  - *To enable the Mouse Emulation via hotkeys, see section **10.14 Mouse Emulation Control**.*

- *If the port list is collapsed, click on a switch number or move the highlight bar to it, then press the [Enter] key to expand the list. Similarly, to collapse a switch's port list, click on the switch number or move the highlight bar to it, then press the [Enter] key to collapse the list.*

9.4 OSD Main Screen Headings

PN	This column lists the port ID numbers for all the KVM ports on the installation. 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, a check mark (√) displays in this column.
PW	The computers that are powered on and are online have a sun symbol ⚙ in this column.
NAME	If a port has been given a name, its name appears in this column.

9. OSD Operation

9.5 OSD Navigation

- To dismiss the menu and deactivate OSD, click ⊠ at the upper right corner of the OSD window or press [Esc].

- To log out, click [F8 Logout] at the left of the main screen, or press [F8].

- 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 what can appear on the main screen, the screen will scroll.

- To activate a port, click it or move the highlight bar to it, then press [Enter].

- After executing any action, you automatically return to the menu one level above.

9.6 OSD Functions
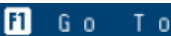
OSD functions are used to configure and control the OSD. For example, you can rapidly switch to any port, scan selected ports, limit the list you wish to view, designate a port as a quick view port, create or edit a port name, or make OSD setting adjustments.

To access an OSD function:

1. Either click on the function key field on the left of the main screen or press a function key on the keyboard.

2. In the submenus that appear, make your choice either by clicking it or moving the highlight bar to it and pressing [Enter].

3. Press [Esc] to return to the previous menu level.

9.6.1 F1: Go To
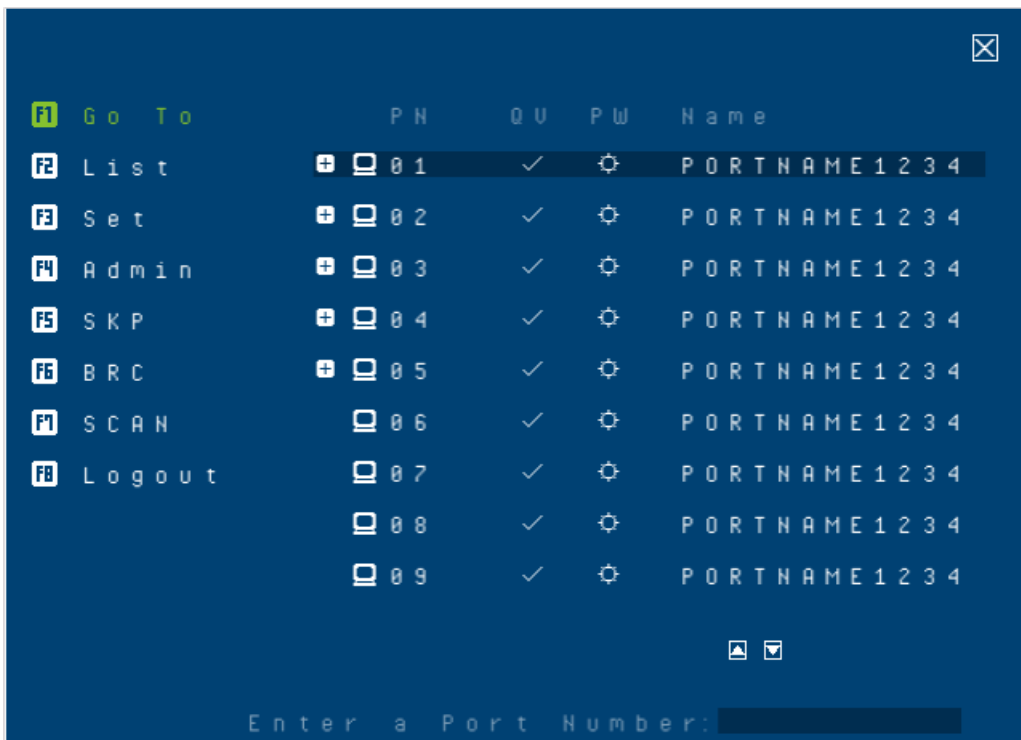
Clicking [F1 Go To] or pressing [F1] activates the Go To function. Go To allows you to switch directly to a port by keying in the port's ID. Enable mouse emulation for this function to work.

- To use the search method, key in the Port ID then press [Enter] to switch KVM, audio and USB focus, or [Spacebar] to switch KVM and audio only.

9. OSD Operation

9.6.2 F2: List
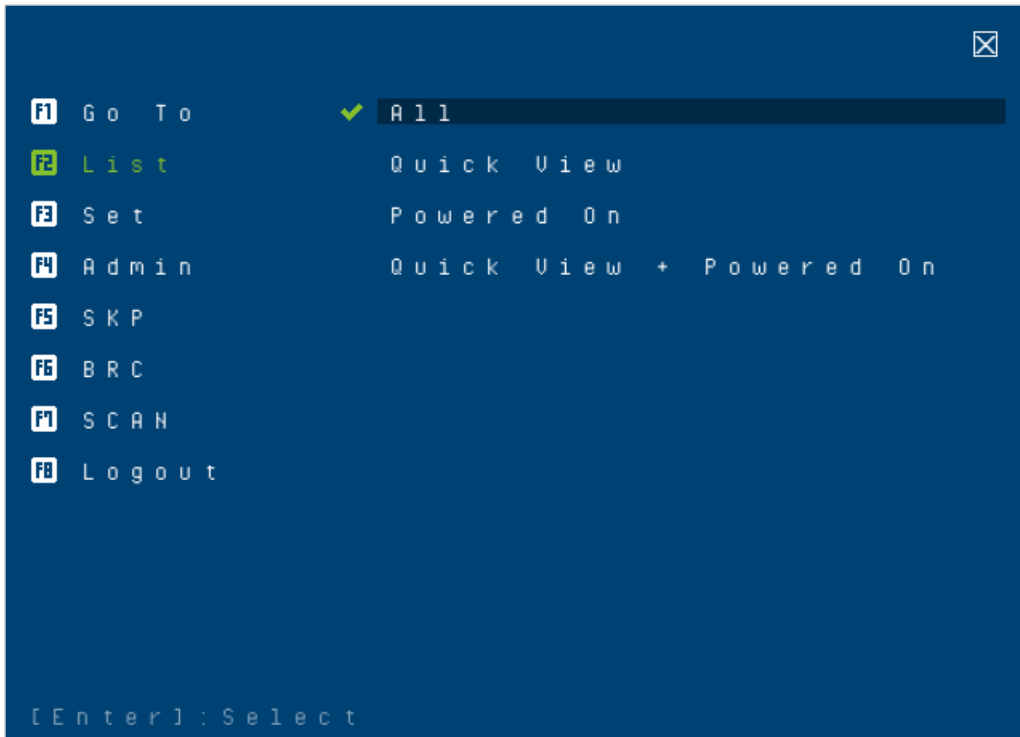
Clicking **F2 List** or pressing [F2] activates the List function. This function lets you broaden or narrow the scope of which ports the OSD displays on the main screen. The submenu choices and their meanings are provided in the table below.

Choice	Meaning
ALL	Lists all ports in the installation that have been set accessible by the administrator for the current logged in user.
Quick View	Lists only the ports that have been selected as quick view ports.
Powered On	Lists only the ports that have their attached computers powered on.
Quick View + Powered On	Lists only the ports that have been selected as quick view ports and that have their attached computers powered on.

Move the highlight bar to the choice you want, then press [Enter]. A check mark (√) appears before the choice to indicate that it is the currently selected one.

9. OSD Operation

9.6.3 F3: Set
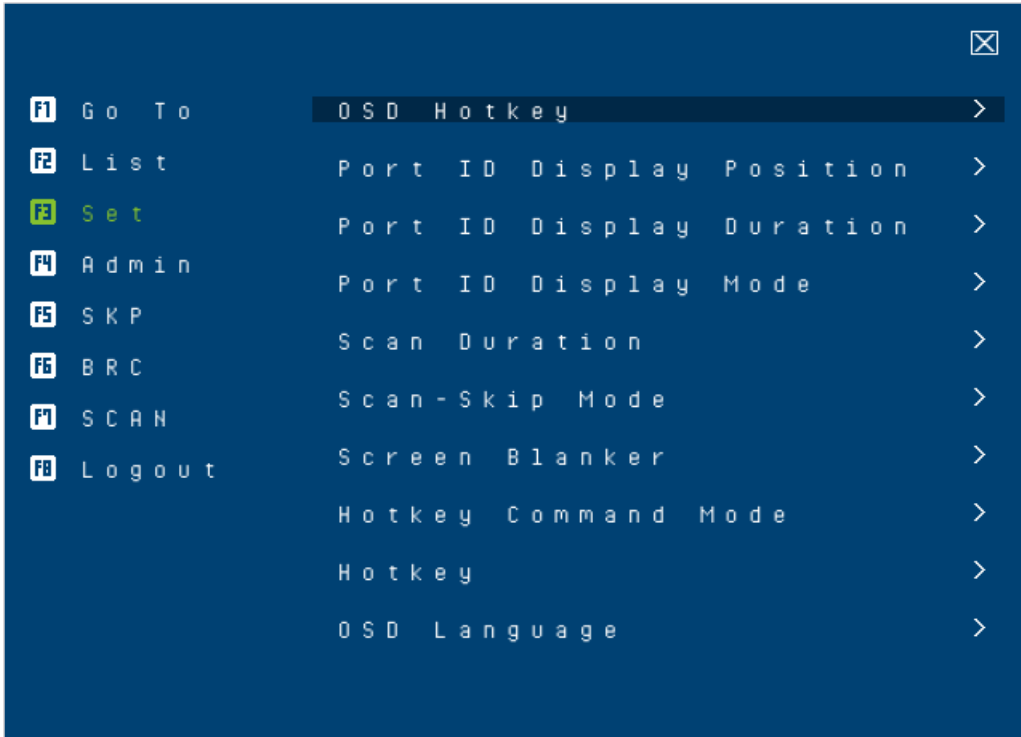
Clicking **F3 S e t** or pressing [F3] activates the Set function. This function allows the administrator and each user to set up their own working environment. A separate profile for each is stored by the OSD and is activated according to the username that was provided during login.

To change a setting:

1. 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 click it or move the highlight bar to it, then press [Enter]. A check mark (√) appears before the selected choice to indicate which one it is. 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 each user to customize the position where the port ID appears on the screen. The default is the upper left corner, but users can choose to have it appear anywhere on the screen.
	Use the mouse or the arrow keys plus Pg Up, Pg Dn, Home, and End (on the numeric keypad with Num Lock off). Arrow keys move the position one space at a time. Pg Up and Pg Dn brings the position to the top or bottom. Home and End brings the position to the rightmost and leftmost of the screen. To position the port ID display, single-click or press [Enter] to lock the position and return to the Set submenu.
Port ID Display Duration	Determines how long a port ID displays on the monitor after a port change has taken place. The choices are: 3 Seconds (default) and Always Off.
Port ID Display Mode	Selects how the port ID is displayed:
	The port number plus the port name (Port Number + Port Name) (default), the port number alone (Port Number) or the port name alone (Port Name).

9. OSD Operation

Setting	Function
Scan Duration	Determines how long the focus dwells on each port as it cycles through the selected ports in Auto Scan mode (see **9.6.7 F7 Scan**). Key in a value from 1 to 255 seconds, then press [Enter]. Default is 5 seconds; a setting of 0 disables the SCAN function. *Note: We recommend to set the scan duration to 10 seconds.*
Scan/Skip Mode	Selects which computers will be accessed under skip mode (see **9.6.5 F5: SKP**), and Auto Scan mode (see **9.6.7 F7: Scan**). Choices are: **ALL** - All the ports which have been set accessible. **QUICK VIEW** - Only those ports which have been set accessible and have been selected as quick view ports. **POWERED ON** - Only those ports which have been set accessible and are powered on. **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 appear on the administrator's screen, since only the adminstrator has Quick View setting rights.*
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 to 30 minutes, then press [Enter]. The default setting of 0 disables this function. The screen will be blanked in the amount of time set (count from the moment when OSD is closed).
Hotkey Command Mode	Enables / disables the hotkey command function in case a conflict with programs running on the computers occurs.
Hotkey	Sets the keyboard shortcut for invoking Hotkey Mode (see **10.2 Hotkey Setting Mode**). Choices are: [NUM LOCK] + [-] (minus) (default), and [CTRL] + [F12].
OSD Language	Sets the language used in the OSD. Choices are: English (Default), German, Japanese, Simplified Chinese, Traditional Chinese, Spanish, French and Russian.

9. OSD Operation

9.6.4 F4: Admin
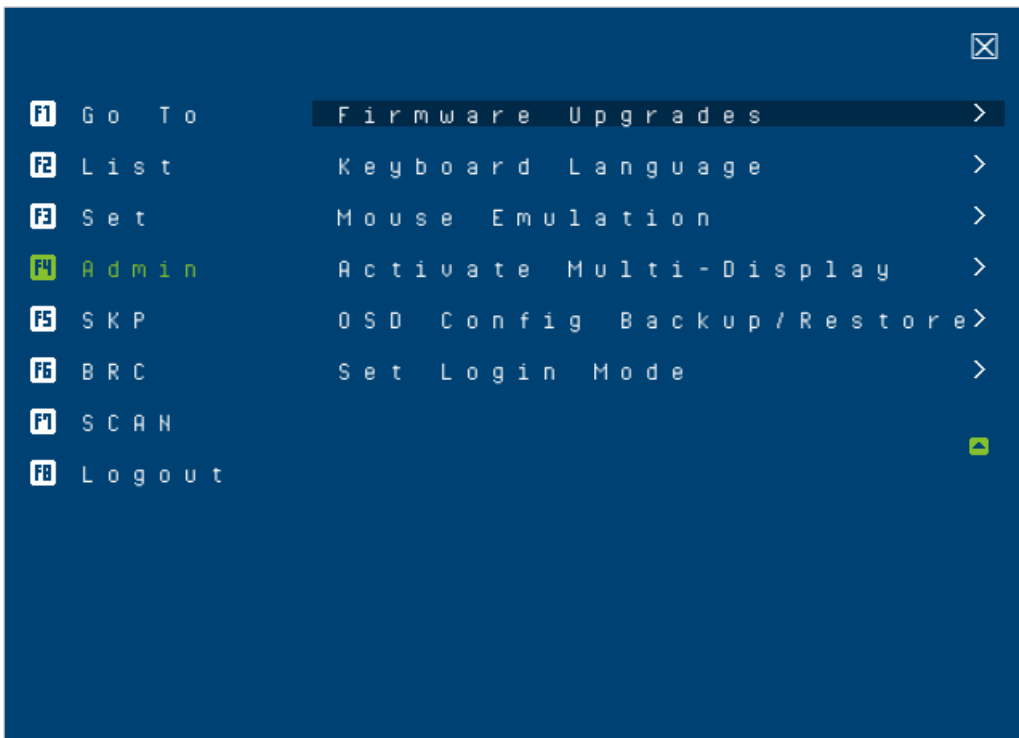
Clicking **F4 Admin** or pressing [F4] activates Admin function. F4 is an administrator-only function. It allows the administrator to configure and control the overall operation of the OSD. To change a setting, click on the settings item you want to configure, or use the up and down arrow keys to move the highlight bar to it and press [Enter].

After you select an item, a submenu with further choices appears. Click an item, or move the highlight bar to it then press [Enter]. A check mark (√) appears before the selected item so that you know which one it is. The settings are explained in the following table:

9. OSD Operation

Setting	Function
Set User Login	This function is used to set usernames and passwords for the administrator and users: 1. Usernames and passwords for one administrator and four users can be set. 2. After you select the administrator field or one of the user fields, a field that allows you to key in the username and password appears. Usernames and passwords can be from 1 to 16 characters long and can consist of any combination of letters and numbers (A–Z, 0–9) and some additional keys (* ( ) + : - , ?. / space). 3. For each individual, key in the username and password, confirm the password, choose SAVE, then press [Enter]. 4. To modify or delete a previous username and/or password, use the backspace key to erase individual letters or numbers. Press [Enter] when done. *Note: Usernames and passwords are not case sensitive. Usernames are displayed in capital letters in the OSD.*
Set Accessible Ports	This function allows the administrator to define user access to the computers on the installation on a port-by-port basis. For each user, select the target port, then press the [Spacebar] to cycle through the choices: F (full access), V (view only), or blank. Repeat until all access rights have been set, then press [Enter]. The default is F for all users on all ports. *Notes:* • *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.* • *The administrator always has full access to all ports.*
Set Logout Timeout	If there is no input from the console for the amount of time set with this function, the user is automatically logged out. A login is necessary before the console can be used again. This enables other users to gain access to the computers when the original user is no longer accessing them, but has forgotten to log out. To set the timeout value, key in a number from 1 to 180 minutes, then press [Enter]. The default setting of 0 disables this function. *Note: This feature does not function if Set Login Mode is disabled.*
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 or use the navigation keys to move the highlight bar to it. 2. Key in the new port name or modify/delete the old one. The maximum number of characters allowed for the port name is 12. Legal characters include: • All alpha characters: A–Z • All numeric characters: 0–9 • * ( ) + : - , ? . / Case does not matter. The OSD displays the port name in all capitals, no matter how they are 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 **14.4 Factory Default Hotkeys and Settings**), except for the port name list, username and password information, which are saved.
Clear The Name List	This function clears the port name list.

9. OSD Operation

Setting	Function
Activate Beeper	Choices are Y (on), or N (off). When activated, the beeper sounds whenever a port is changed, when activating the Auto Scan function (see **9.6.7 F7: Scan**) or an invalid entry is made on an OSD menu. The default is Y.
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, use the navigation keys to move the highlight bar to it and press [Spacebar]. • When a port has been selected as a quick view port, a check mark (√) displays in the QV column of the LIST on the main screen. When a port is deselected, the check mark (√) disappears. • If one of the quick view options is chosen for the LIST view (see **9.6.2 F2: List**), 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, only a port that has been selected here will be auto-scanned. The default has no ports selected for quick view.
Set Operating System	This function allows the administrator to define the operating system for the computer connected to each KVM port. The default setting is Win (PC compatible). To set the port operating system: 1. From the list, select the port for which you wish to set the computer's operating system. 2. Set the operating system by pressing [Spacebar] to cycle through Win, MAC, SUN, or Other. 3. Press [Esc] to exit. The operating system you selected is assigned to the KVM port.
Firmware Upgrade	In order to upgrade KVM's, you must first enable Firmware Upgrade mode with this setting. When you bring up this menu, the current firmware version levels are displayed. Select Y to enable Firmware Upgrade mode, or select [Esc] to leave this menu without enabling it.
Keyboard Language	Sets the language for the computer keyboard attached to the KVM port. To select a keyboard language, single-click it or use the navigation keys to move the highlight bar to it and press [Enter]. Choices are: Auto (default), (US) English, (UK) English, German (Deutch), German (Swiss), French, Hungarian, Italian, Japanese, Korean, Russian, Spanish, Swedish, Traditional Chinese, and Simplified Chinese.
Mouse Emulation	Enables / disables the mouse emulation function. *Note: This function is supported in the first level of an installation only. Enable mouse emulation to perform any independent switching of a port and for Auto Scan Mode or Skip Mode to work.*
Activate Multi-Display	Enables multi-display mode for dual, triple, quad, or multi-display mode in multiple-monitor installations, where each computer is fitted with multiple video cards (see **7.3.3 Multi-Display Installation** for details). *Note: Multi-display mode must be enabled on the OSD before the cables are connected.*
OSD Config Back / Restore	Enters OSD Configuration Backup / Restore mode. The Firmware Management Utility lets you back up the current OSD configuration of the KVM switch and restore it when necessary. Storing the OSD configuration settings is useful when deploying more than one installation that uses the same settings (see **13.7 OSD Configuration Backup/Restore** for details).
Set Login Mode	This function allows the administrator to request users to log in or not. When the login dialog box is disabled, the system disables the login/logout function. If the system is re-started, the login/logout function remains disabled.

9. OSD Operation

9.6.5 F5: SKP
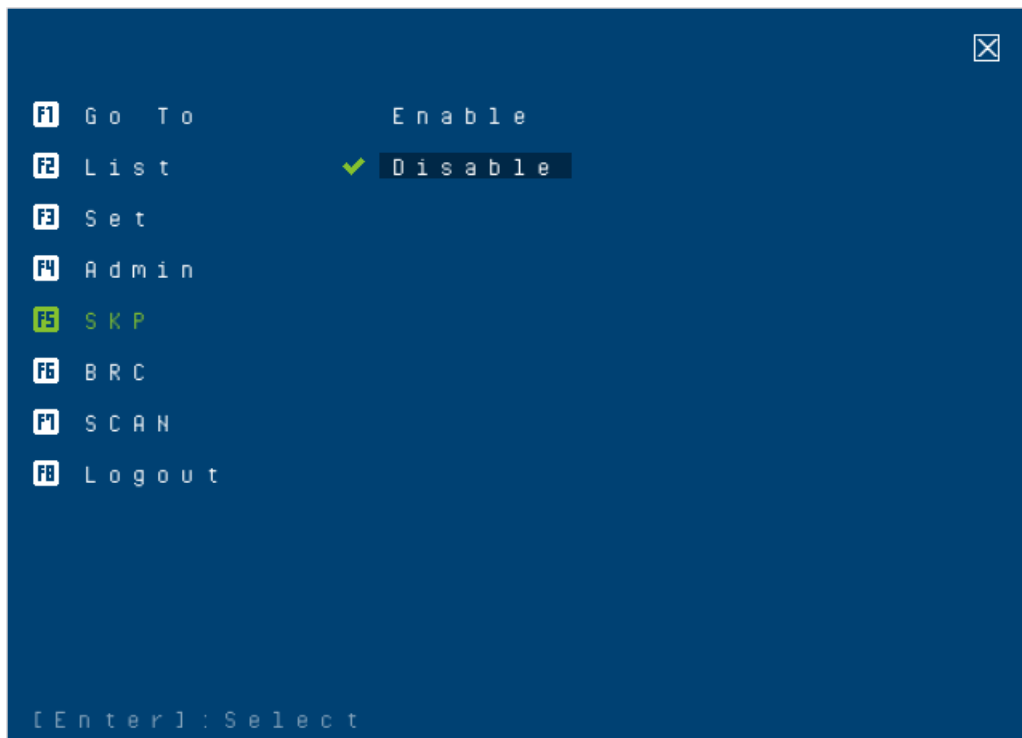
Clicking **F5** **S K P** or pressing [F5] invokes Skip (SKP) mode. This function lets you easily skip backward or forward and switch the console focus from the currently active computer port to the previous or next accessible one.

Note: Mouse emulation must be enabled for Skip mode to work.

- The selection of computers available for skip mode switching is made with the Scan–Skip mode setting under the F3: SET function (see **9.6.3 F3: Set** for details).

- When you are in skip mode:

  Press [←] to skip to the previous accessible port on the list.

  Press [→] to skip to the next accessible port on the list.

  Press [↑] to skip to the previous accessible port. If the previous accessible port has cascaded a switch, then it skips to the last accessible port of that switch.

  Press [↓] to skip to the next accessible port. If the next accessible port has cascaded a switch, then it skips to the first accessible port of that switch

  Note: When skipping, you will only skip to the previous or next accessible computer that is in the Scan/Skip mode selection (refer to Scan/Skip mode in the table in section 9.6.3 F3: Set for details).

- If a port has been selected for Scan/Skip mode, when the focus switches to that port, a set of [↑], [↓], [←], [→] symbol appears before its port ID displays.

- 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].

9. OSD Operation

9.6.6 F6: BRC
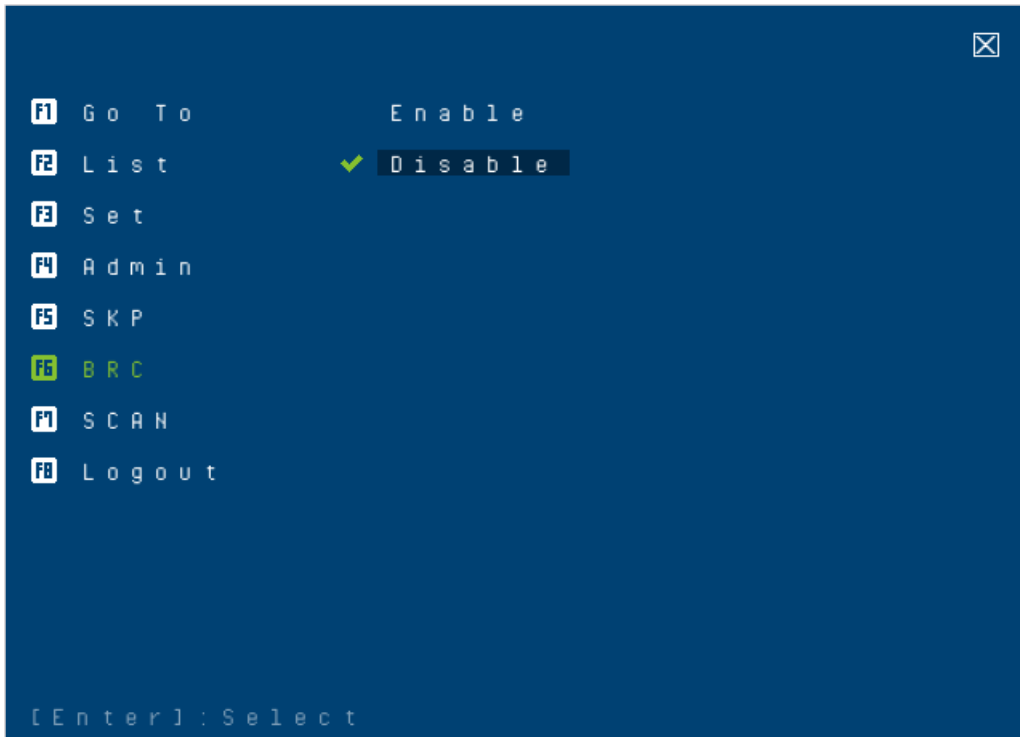
F6 is an administrator-only function. Clicking [F6] B R C or pressing [F6] invokes Broadcast (BRC) mode. When this function is in effect, commands sent from the console are broadcast to all available computers on the installation.

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

While BRC mode is in effect:

• A speaker symbol appears before the port ID display of the port that currently has the console focus.

• 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.

• When BRC mode is in effect, the Scroll Lock LED flashes. It stops flashing and reverts to normal status when you exit BRC.

9. OSD Operation

9.6.7 F7: Scan

Clicking or pressing [F7] invokes Auto Scan mode. This function allows you to automatically switch among the available computers at regular intervals so that their activity can be monitored without the inconvenience of switching yourself.

Note: Mouse emulation must be enabled for Auto Scan to work.

- The selection of computers to be included for auto-scanning is made with the Scan/Skip mode setting under the F3: SET function (refer to Scan/Skip mode in the table in section **9.6.3 F3: Set** for details).

- The amount of time that each port displays for is set with the Scan Duration setting under the F3: SET function (refer to Scan Duration in the table in section **9.6.3 F3: Set** for details). To stop at a particular location, press the [Spacebar] to stop scanning.

- 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. 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 it is being accessed under Auto Scan mode. When the port ID with the symbol displays, the background screen is blank.

- 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.

- To exit Auto Scan mode, press the [Spacebar] or [Esc].

9. OSD Operation

9.6.8 F8: Logout

Clicking ▣ Logout or pressing [F8] logs you out of OSD control of the computers and blanks the console screen. This is different from simply pressing [Esc] when you are at the main screen to deactivate the OSD. 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.

Notes:

- *When you reenter the OSD after logging out, the screen stays blank except for the OSD main screen. You must input your username and password before you can continue.*

- *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.*

10. Hotkey Operation

10.1 Hotkey Port Control

Hotkey port control allows you to provide KVM focus to a particular computer directly from the keyboard. The B024-DPU08 and B024-DPU16 provides the following hotkey port control features:

- Selecting the Active Port
- Auto Scan Mode Switching
- Skip Mode Switching
- Computer Keyboard / Mouse Reset
- Enable / Disable Mouse Emulation

The following settings can also be controlled in Hotkey Setting Mode (HSM):

- Setting the Beeper
- Setting the HSM Hotkey
- Setting the OSD Hotkey
- Setting the Port Operating System
- Restoring the OSD Default Values
- Setting the EDID Mode
- Setting the Video DynaSync Mode

    Notes:

    - *Mouse emulation must be enabled to perform independent switching of a port and for Auto Scan Mode or Skip Mode to work.*
    - *To enable the Mouse Emulation via OSD, refer to "Mouse Emulation" in the table in section **9.6.4 F4: Admin** for details.*
    - *To enable the Mouse Emulation via hotkeys, see section **10.14 Mouse Emulation Control**.*

10.2 Hotkey Setting Mode (HSM)

Hotkey Setting Mode is used to set up your KVM switch configuration. All operations begin with invoking Hotkey Setting Mode (HSM).

Invoking HSM

To invoke HSM:

1. Press and hold down [Num Lock].
2. Press and release [-].
3. Release [Num Lock].

or

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

When HSM is active:

- A command line appears on the monitor screen. The command line prompt is the word HOTKEY in white text on a blue background and displays the subsequent hotkey information that you key in.
- Ordinary keyboard and mouse functions are suspended – only hotkey-compliant keystrokes (described in the sections that follow), can be input.
- Pressing [Esc] exits HSM.

10. Hotkey Operation

10.3 Select the Active Port

Each KVM port is assigned a port ID (see section **8.3 Port ID Numbering**). You can directly access any computer on the installation with a hotkey combination that specifies the port ID of the KVM port that a computer is connected to. To access a computer using hotkeys:

1. Invoke HSM with the [Num Lock] + [-] or [Ctrl] + [F12] combination.

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 HSM.

Note: In HSM, KVM focus will not switch to a port if an invalid switch or port number is entered. The hotkey command line will continue to display on the screen until you enter a valid switch and port number combination, or exit HSM.

Hotkey	Action
[PN] [Enter]	Brings the KVM, USB hub and audio focus to the computer attached to the port corresponding to the specified Port ID.
[PN] [K] [Enter]	Brings only the KVM and audio focus to the computer attached to the specified port. The USB hub and audio focus remain where they are.
[PN] [U] [Enter]	Brings only the USB hub focus to the computer attached to the specified port. The KVM and audio focus remain where they are.

*Note: The [PN] stands for the computer's Port ID number (1, 2, 3, or 4) (see section **8.3 Port ID Numbering** for details). Replace the [PN] with the appropriate Port ID when entering Hotkey combinations.*

10.4 Auto Scan Mode

Auto Scan automatically switches at regular intervals among all the KVM ports that have been set as accessible under Scan–Skip Mode so their activity can be monitored automatically (refer to Scan/Skip mode in the table in section **9.6.3 F3: Set** for details).

Invoking Auto Scan

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

1. Enable mouse emulation. To enable the Mouse Emulation via OSD, refer to "Mouse Emulation" in the table in section **9.6.4 F4: Admin** for details. To enable the Mouse Emulation via hotkeys, see section **10.14 Mouse Emulation Control**.

2. Invoke HSM with the [Num Lock] + [-] or [Ctrl] + [F12] combination.

3. Press [A]. After you press A, then press [Enter]. You will automatically exit HSM and enter Auto Scan mode.

   • While 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 will display: AUTO SCAN: PAUSED.

   Pausing when you want to keep the focus on a particular computer is more convenient than exiting Auto Scan mode because when you resume scanning, you start from where you left off. If on the other hand, you exited and restarted, scanning would start over from the very first computer on the installation.

   To resume Auto Scanning, 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.

4. To exit Auto Scan mode, press [Esc] or [Spacebar]. Auto-scanning stops when you exit Auto Scan mode.

*Note: Enable mouse emulation to perform any independent switching of a port and for Auto Scan Mode or Skip Mode to work (see section **10.14 Mouse Emulation Control**).*

10. Hotkey Operation

10.5 Skip Mode

This feature allows you to switch between computers in order to monitor them manually. You can dwell on a particular port for as long as you like–as opposed to auto-scanning, which automatically switches after a fixed interval.

To invoke Skip mode, key in the following hotkey combination:

1. Enable mouse emulation (see page 53).

2. Invoke HSM with the [Num Lock] + [-] or [Ctrl] + [F12] combination.

3. Key in [↑], [↓], [←], or [→].
    - After you press an arrow key, you automatically exit HSM and enter Skip mode where you can switch ports as follows:

←	Skips to the previous accessible port (see Scan/Skip mode in the table in section **9.6.3 F3: Set** for details for information regarding accessible ports.)
→	Skips to the next accessible port.
↑	Skips to the previous accessible port. If the previous accessible port has cascaded a switch, then it skips to the last accessible port of that switch.
↓	Skips to the next accessible port. If the next accessible port has cascaded a switch, then it skips to the first accessible port of that switch.

   - Once you are in Skip mode, you can continue skipping by pressing the arrow keys. You do not need to use the [Num Lock] + [-] combination again.
   - 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.

4. To exit Skip mode, press [Esc] or [Spacebar].

    *Note: Enable mouse emulation to perform any independent switching of a port and for Auto Scan Mode or Skip Mode to work (see **10.14 Mouse Emulation Control**).*

10.6 Keyboard / Mouse Reset

If the keyboard or mouse cease to function on the computer connected to the currently selected port, you can perform a keyboard / mouse reset on the computer. This function is essentially the same as unplugging and replugging the keyboard and mouse on the target computer. To perform a computer keyboard / mouse reset, key in the following hotkey combination:

1. Invoke HSM with the [Num Lock] + [-] or [Ctrl] + [F12] combination.

2. Press [F5].

After you press [F5] you automatically exit HSM and regain keyboard and mouse control on the computer connected to the KVM port. If you fail to regain keyboard / mouse control on the computer after pressing [F5], perform a console keyboard and mouse reset.

10.7 Hotkey Beeper Control

The beeper (see "Activate Beeper" in the table in section **9.6.4 F4: Admin**) can be hotkey toggled on and off. The default setting is enabled. To toggle the beeper, key in the following hotkey combination:

1. Invoke HSM with the [Num Lock] + [-] or [Ctrl] + [F12] combination.

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 disappears and you will automatically exit HSM.

10. Hotkey Operation

10.8 HSM Hotkey Control

The HSM Hotkey (see "Hotkey" in the table in section **9.6.3 F3: Set**) can be toggled between [Num Lock] + [-], and [Ctrl] + [F12]. To toggle the HSM Hotkey:

1. Invoke HSM with the [Num Lock] + [-] or [Ctrl] + [F12] combination.

2. Press [H].

After you press [H], the command line displays HOTKEY HAS BEEN CHANGED for one second, then disappears and you will automatically exit HSM.

10.9 OSD Hotkey Control

The OSD Hotkey (see "OSD Hotkey" in the table in section **9.6.3 F3: Set**) can be toggled between [Scroll Lock], [Scroll Lock] and [Ctrl], [Ctrl]. To toggle the OSD Hotkey, key in the following hotkey combination:

1. Invoke HSM with the [Num Lock] + [-] or [Ctrl] + [F12] combination.

2. Press [T].

After you press [T], the command line displays HOTKEY HAS BEEN CHANGED for one second, then disappears and you will automatically exit HSM.

10.10 Port OS Control

A port's operating system can be changed to match that of the computer attached to the port. To change a port's operating system, key in the following hotkey combination:

1. Invoke HSM with the [Num Lock] + [-] or [Ctrl] + [F12] combination.

2. Key in [F1], [F2], or [F3], the Function of [F1], [F2], and [F3] keys is listed in the following table:

Key	Description
F1	Sets the Port OS to Windows
F2	Sets the Port OS to Mac
F3	Sets the Port OS to Sun

After pressing a function key, you will automatically exit HSM.

10.11 Restore Default Values

This administrator-only hotkey restores the KVM's default values (see **14.4 Factory Default Hotkeys and Settings**). To restore the default values, key in the following hotkey combination:

1. Invoke HSM with the [Num Lock] + [-] or [Ctrl] + [F12] combination.

2. Press [R].

3. Press [Enter].

After you press [Enter], the command line displays RESET TO DEFAULT SETTING for one second, then disappears and you will automatically exit HSM.

10.12 Video DynaSync

Video DynaSync is an exclusive technology that eliminates boot-up display problems and optimizes resolution when switching between ports. The default setting is enabled. To invoke Video DynaSync:

1. Invoke HSM with the [Num Lock] + [-] or [Ctrl] + [F12] combination.

2. Press [D].

Note: If the monitor is disconnected and reconnected, the KVM re-executes Video DynaSync.

10. Hotkey Operation

10.13 EDID Mode

To configure an EDID mode for the KVM:

1. Invoke HSM with the [Num Lock] + [-] or [Ctrl] + [F12] combination.

2. Press [V].

3. Key in [1], [2], [3], or [4], the Function of [1], [2], [3], and [4] keys is listed in the following table:

Key	Description
1	Sets the switch to read DisplayPort monitor's EDID (Default)
2	Default monitor's EDID 1920 x 1080 @ 60 Hz

4. Press [Enter]. After pressing [Enter], you will automatically exit HSM.

10.14 Mouse Emulation Control

The default setting is enabled. To disable:

1. Invoke HSM with the [Num Lock] + [-] or [Ctrl] + [F12] combination.

2. Press [M].

This procedure is a toggle. Repeat to enable.

Note: Enable mouse emulation to perform any independent switching of a port and for Auto Scan Mode or Skip Mode to work.

10.15 HSM Summary Table

After invoking HSM (see **10.2 Hotkey Setting Mode**), key in one of the following keys to perform the corresponding function:

Key	Function
[PN] [Enter]	Switches KVM, audio and USB focus directly to the computer that corresponds to that port ID (PN = port number).
[PN] [K] [Enter]	Switches KVM and audio focus directly to the computer that corresponds to that port ID (PN = port number).
[PN] [U] [Enter]	Switches USB focus only directly to the computer that corresponds to that port ID (PN = port number). *Note: This hotkey functions on the first level of an installation only.*
[A] [Enter]	Starts Auto Scan. The KVM focus cycles from port to port at the default 5-second intervals.
[A] [n] [Enter]	Starts Auto Scan at n-second intervals (n = 0–255 seconds). *Note: When n=0, the Auto Scan will not be activated.*
[H]	Toggles between the default ([Num Lock] [-]) and alternate ([Ctrl] [F12]) HSM invocation keys.
[T]	Toggles between the default ([Scroll Lock] [Scroll Lock]) and alternate ([Ctrl] [Ctrl]) OSD Hotkey.
[F1]	Sets the port OS to Windows.
[F2]	Sets the port OS to Mac.
[F3]	Sets the port OS to Sun.
[F5]	Performs a keyboard / mouse reset on the target computer.
[B]	Enables/disables the beeper.
[R] [Enter]	Resets the hotkey settings to their default status (see **14.4 Factory Default Hotkeys and Settings**).
[D]	Invokes Video DynaSync, an exclusive technology that eliminates boot-up display problems and optimizes resolution when switching between ports.

10. Hotkey Operation

Key	Function
[V] [n] [Enter]	Sets EDID Mode. • n = 1, read DisplayPort monitor's EDID. • n = 2, default EDID mode (full HD 1920 x 1080 @ 60 Hz.
[M]	Enables/disables mouse emulation.
[←]	Skips to the previous computer on the list while in Skip mode.
[→]	Skips to the next computer on the list while in Skip mode.
[↑]	Skips to the previous accessible port. If the previous accessible port has cascaded a switch, it skips to the last accessible port of that switch.
[↓]	Skips to the next accessible port. If the next accessible port has cascaded a switch, it skips to the first accessible port of that switch.
[ESC] or [Spacebar]	Exits hotkey setting mode (HSM).

*Note: Enable mouse emulation to perform any independent switching of a port and for Auto Scan Mode or Skip Mode to work (see **10.14 Mouse Emulation Control**).*

11. Keyboard Emulation

11.1 Mac Keyboard

The PC-compatible (101/104 key) keyboard can emulate the functions of the Mac keyboard. The emulation mappings are listed in the table below.
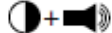
PC Keyboard	Mac Keyboard
[Shift]	Shift
[Ctrl]	Ctrl
⊞	⌘
[Ctrl] [1]	◼
[Ctrl] [2]	◀)
[Ctrl] [3]	◀))
[Ctrl] [4]	⏏
[Alt]	Alt
[Print Screen]	F13
[Scroll Lock]	F14
▤	=
[Enter]	Return
[Backspace]	Delete
[Insert]	Help
[Ctrl] ⊞	F15

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

11. Keyboard Emulation

11.2 Sun Keyboard

The PC-compatible (101/104 key) keyboard can emulate the functions of the Sun keyboard when the Control key [Ctrl] is used in conjunction with other keys. The corresponding functions are shown in the table below.

PC Keyboard	Sun Keyboard
[Ctrl] [T]	Stop
[Ctrl] [F2]	Again
[Ctrl] [F3]	Props
[Ctrl] [F4]	Undo
[Ctrl] [F5]	Front
[Ctrl] [F6]	Copy
[Ctrl] [F7]	Open
[Ctrl] [F8]	Paste
[Ctrl] [F9]	Find
[Ctrl] [F10]	Cut
[Ctrl] [1]	▭ ◀
[Ctrl] [2]	◑ - ◀
[Ctrl] [3]	◑ + ◀))
[Ctrl] [4]	☾
[Ctrl] [H]	Help
▤	Compose
⊞	◆

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

12. RS-232 Operation

The KVM's built-in bi-directional RS-232 serial interface allows system control through a high-end controller or PC. RS-232 serial operations in the KVM installation are managed via HyperTerminal sessions on systems that are running Windows. In order to use this feature to send commands to the KVM, you must first download and install a HyperTerminal application.

12.1 Setup

Install a HyperTerminal application on a computer that is not part of the installation, which will be used to control the switch via the RS-232 connection. HyperTerminal applications can be download from the Internet and many operating systems are embedded with HyperTerminal applications.

Hardware Connection

Use a the Firmware Upgrade Cable provided with this unit to connect a computer's serial port to the Firmware Upgrade Port on the KVM's front panel, as shown in the diagram below:
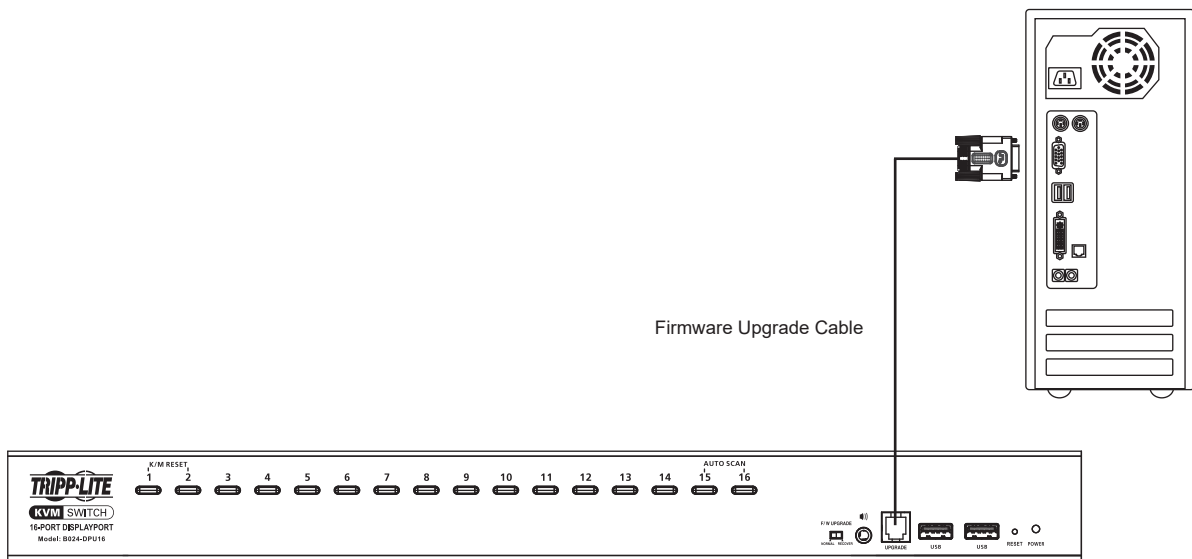
Firmware Upgrade Cable

Note: B024-DPU16 model shown. The port locations are the same for the B024-DPU08, except for the number of KVM ports.

12.2 RS-232 Pin Assignments

Pin assignments for the B024-DPU08 and B024-DPU16 KVM Firmware Upgrade Port are used for connecting to a serial terminal.

Pin	Assignment	
1	TXD: Transmit Data	
2	RXD: Receive Data	
3	N/A	
4	GND: Signal Ground	RJ11 Female

12. RS-232 Operation

12.3 Console Login: HyperTerminal

Once a physical connection from the computer to the KVM switch has been made, you can establish a HyperTerminal session.

1. Open the *HyperTerminal* application, configure the port settings for COM1 port, then click **OK**.
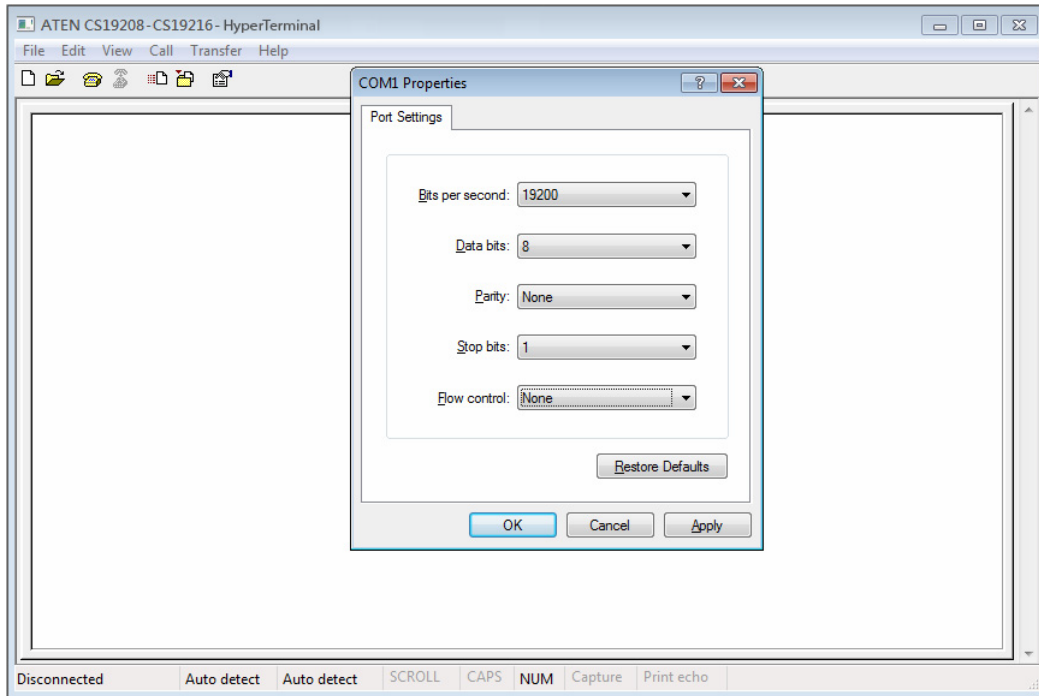
Bits per Second: **19200**, Data Bits: **8**, Parity: **None**, Stop bits: **1**, Flow Control: **None**.

2. After configuring the port settings you must enable serial control on the switch by typing the command: Open + [Enter].
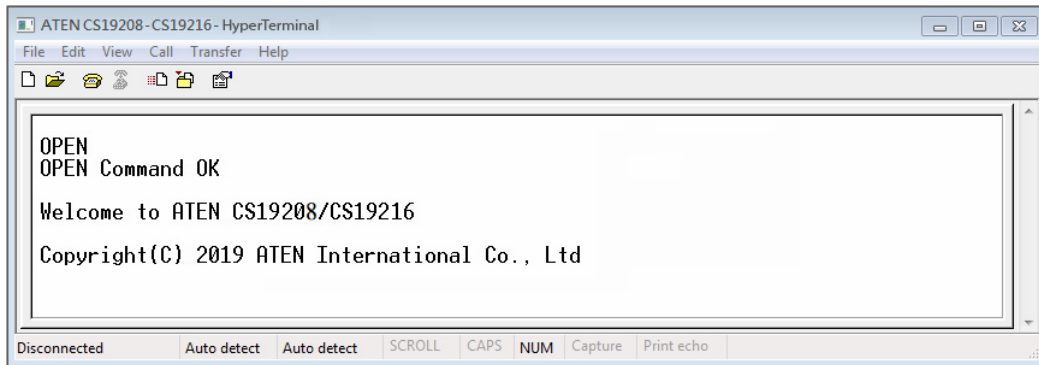
12. RS-232 Operation

12.4 RS-232 Commands

After you login via HyperTerminal (see **12.3 Console Login: HyperTerminal**), use the instructions below to send RS-232 commands to control the switch from the computer.

When RS-232 control is enabled via the Open + [Enter] command, the KVM's front panel pushbuttons, OSD, hotkeys and remote control commands will be disabled until the RS-232 control is disabled.

12.4.1 Verification

After entering a command, a verification message appears at the end of the command line:

Response Message	Description
Command OK	Command or parameter is correct.
Command incorrect	Command or parameter is incorrect.

With all commands in the sections that follow:

• Each command string can be separated with a space.

• The [Enter] command can be replaced with the ASCII code: 0x0D0A

12.4.2 Login

The Login command allows you to log in to the KVM and send RS-232 commands. When you log in, the RS-232 link is "opened" and the KVM will not respond to front panel pushbuttons, hotkeys, OSD or remote control commands until the RS-232 link is closed (see **12.4.6 Switch Port**).

Use the **Formula** → to set **Parameters** → to create a **Command**.

Formula

Command + Control + Name + Number + [Enter]

Parameters

Command	Description
login	Login command

Control	Description
U	Input user name + password

Name	Description
xxxxxxxxxxxxx	The login user name

Password	Description
xxxxxxxxxxxxx	The login user password

Enter	Description
Enter	Enter and send out command

Login Command

The formula for the Login command is as follows:

Command + Control + Name + Number + [Enter]

For example, to login via username and password, type the following:

login u administrator p12345 [Enter]

12. RS-232 Operation

12.4.3 Logout

The Logout commands allows you to log out of the KVM and close the RS-232 link.

Use the **Formula** → to set **Parameters** → to create a **Command**.

Formula

Command + [Enter]

Parameters

Command	Description
Logout	Logout command

Enter	Description
Enter	Enter and send out command

Logout Command

The formula for the Logout command is as follows:

   Command + [Enter]

For example, to logout of the KVM, type the following:

   logout [Enter]

12.4.4 Open/Close RS-232 Link

The Open/Close RS-232 Link commands allow you to open and close the link between the computer sending RS-232 commands and the KVM. When the link is open, the KVM only accepts RS-232 commands and will not respond to front panel pushbuttons, OSD, hotkeys and remote control commands until the link is closed. The link opens when you login and closes after 2 minutes if no command is sent.

Use the **Formula** → to set **Parameters** → to create a **Command**.

Formula

Command + [Enter]

Parameters

Command	Description
Open	Open RS-232 Link command
Close	Close RS-232 Link command

Enter	Description
Enter	Enter and send out command

Open/Close RS-232 Link Commands

The available formulas for the Open/Close RS-232 Link commands are as follows:

1. Command + [Enter]

For example, to open the RS-232 link between the computer and KVM, type the following:

   open [Enter]

2. Command + [Enter]

For example, to close the RS-232 link between the computer and KVM, type the following:

   close [Enter]

12. RS-232 Operation

12.4.5 Set Baud Rate

The Set Baud Rate command allows you to configure the baud rate setting for the serial port connection. The default baud rate is 19200.

Use the **Formula** → to set **Parameters** → to create a **Command**.

Formula

Command + Control + [Enter]

Parameters

Command	Description
baud	Baud rate command

Control	Description
19200	Set baud rate to 19200 (Default)
38400	Set baud rate to 38400
9600	Set baud rate to 9600

Enter	Description
Enter	Enter and send out command

Set Baud Rate Commands

The available formulas for the Set Baud Rate commands are as follows:

1. Command + Control + [Enter]

For example, to set the baud rate to 19200, type the following:

   baud 19200 [Enter]

2. Command + Control + [Enter]

For example, to set the baud rate to 38400, type the following:

   baud 38400 [Enter]

12.4.6 Switch Port

The Switch Port command allows you to switch ports. The default port is 01.

Use the **Formula** → to set **Parameters** → to create a **Command**.

Formula

Command + Control + [Enter]

Parameters

Command	Description
sw	Switch Port command

Control	Description
ixx	Input port number xx= 01~08 (B024-DPU08); 01~16 (B024-DPU16)

Enter	Description
Enter	Enter and send out command

12. RS-232 Operation

Switch Port Command

The available formula for the Switch Port command is as follows:

Command + Control + [Enter]

For example, to switch to port 2, type the following:

sw i02 [Enter]

Note: The Control command can be skipped and the default value will be used.

12.4.7 Hotkey Setting

The Hotkey Setting command allows you to change the hotkey used to invoke the HSM (Hotkey Setting Mode). The default hotkey is [Num Lock] + [-].

Use the **Formula** → to set **Parameters** → to create a **Command**.

Formula

Command + Control + [Enter]

Parameters

Command	Description
hotkey	Hotkey Setting command

Control	Description
num	Change the HSM invoke key to: [Num Lock] + [-] (Default)
f12	Change the HSM invoke key to: [Ctrl] + [F12]

Enter	Description
Enter	Enter and send out command

Hotkey Setting Commands

The available formulas for Hotkey Setting commands are as follows:

1. Command + Control + [Enter]

For example, to change the HSM invoke key to [Num Lock] + [-], type the following:

hotkey num [Enter]

2. Command + Control + [Enter]

For example, to change the HSM invoke key to [Ctrl] + [F12], type the following:

hotkey f12 [Enter]

12. RS-232 Operation

12.4.8 OSD Hotkey

The OSD Hotkey command allows you to change the hotkey used to invoke the OSD. The default hotkey is [Scroll] [Scroll].

Use the **Formula** → to set **Parameters** → to create a **Command**.

Formula

Command + Control + [Enter]

Parameters

Command	Description
osdkey	OSD Hotkey command

Control	Description
scroll	Change OSD hotkey invoke key to: [Scroll] [Scroll] (Default)
ctrl	Change OSD hotkey invoke key to: [Ctrl] [Ctrl]

Enter	Description
Enter	Enter and send out command

Hotkey Switching Commands

The available formulas for OSD Hotkey commands are as follows:

1. Command + Control + [Enter]

For example, to change the OSD hotkey invoke key to [Scroll] [Scroll], type the following:

   osdkey scroll [Enter]

2. Command + Control + [Enter]

For example, to change the OSD hotkey invoke key to [Ctrl] [Ctrl], type the following:

   osdkey ctrl [Enter]

12.4.9 USB Reset

The USB Reset command allows you to reset the USB connection. The default USB reset setting is off.

Use the **Formula** → to set **Parameters** → to create a **Command**.

Formula

Command + Control + [Enter]

Parameters

Command	Description
usbreset	USB Reset command

Control	Description
on	Enable USB reset connection

Enter	Description
Enter	Enter and send out command

12. RS-232 Operation

USB Reset Command

The available formula for the USB Reset command is as follows:

Command + Control + [Enter]

For example, to reset the USB connection, type the following:

usbreset on [Enter]

12.4.10 Restore Default Settings

The Restore Default Settings command allows you to reset all of the KVM's settings back to the default. The default setting is OFF.

Use the **Formula** → to set **Parameters** → to create a **Command**.

Formula

Command + Control + [Enter]

Parameters

Command	Description
reset	Restore Default Settings command

Control	Description
on	Enable restore default values

Enter	Description
Enter	Enter and send out command

Restore Default Value Command

The available formula for the Restore Default Settings command is as follows:

Command + Control + [Enter]

For example, to restore all KVM settings back to the default, type the following:

reset on [Enter]

12.4.11 Firmware Upgrade

The Firmware Upgrade command allows you to enable the firmware upgrade mode. The default setting is off.

Use the **Formula** → to set **Parameters** → to create a **Command**.

Formula

Command + Control + [Enter]

Parameters

Command	Description
upgrade	Firmware Upgrade command

Control	Description
on	Enable firmware upgrade mode

Enter	Description
Enter	Enter and send out command

12. RS-232 Operation

Firmware Upgrade Command

The available formula for the Firmware Upgrade command is as follows:

Command + Control + [Enter]

For example, to enable firmware upgrade mode, type the following:

upgrade on [Enter]

12.4.12 KVM Status

The KVM Status command allows you to display read-only information about the KVM's current configuration status. The default setting is off.

Use the **Formula** → to set **Parameters** → to create a **Command**.

Formula

Command + Control + [Enter]

Parameters

Command	Description
status	KVM Status command

Control	Description
on	Enable KVM status

Enter	Description
Enter	Enter and send out command

KVM Status Command

The available formula for the KVM Status command is as follows:

Command + Control + [Enter]

For example, to display the CS19208 / CS19216's configuration status, type the following:

status on [Enter]

A message similar to the one below will then appear:

hotkey: [numlock]+[-] / [scrolllock],[scrolllock]

os setting: pc

keyboard emulation: enabled/disabled

keyboard layout: English

mouse emulation: enabled/disabled

monitor re-detection: enabled/disabled

12. RS-232 Operation

12.4.13 EDID Mode

The EDID Mode command allows you to set EDID mode for the KVM.

Use the **Formula** → to set **Parameters** → to create a **Command**.

Formula

Command + Control + [Enter]

Parameters

Command	Description
edid	Set EDID Mode command

Control	Description
port1	Set to display A (DisplayPort monitor) EDID
default	Set to default EDID

Enter	Description
Enter	Enter and send out command

EDID Mode Command

The available formula for the KVM Status command is as follows:

Command + Control + [Enter]

For example, to set the KVM's EDID mode to default EDID, type the following:

edid default [Enter]

12.4.14 Broadcast Mode

The Broadcast Mode command allows you to set enable/disable broadcast mode for the KVM. The default setting is off.

Use the **Formula** → to set **Parameters** → to create a **Command**.

Formula

Command + Control + [Enter]

Parameters

Command	Description
broadcast	Set Broadcast Mode command

Control	Description
on	Enable broadcast mode for the KVM
off	Disable broadcast mode for the KVM

Enter	Description
Enter	Enter and send out command

Broadcast Mode Command

The available formula for the KVM Status command is as follows:

Command + Control + [Enter]

For example, to enable the KVM's broadcast mode, type the following:

broadcast on [Enter]

13. Firmware Management Utility

The purpose of the Windows-based Firmware Management Utility is to provide an automated process for upgrading all B024-DPU08 and B024-DPU16 KVM switches in an installation. The program comes as part of a Firmware Upgrade Package that is specific for each device.

As new firmware versions become available, new firmware upgrade packages are posted on our website. Check the website regularly to find the latest information and packages.

13.1 Downloading the Firmware Upgrade Package

To download the firmware upgrade package:

1. From a computer that is not part of your KVM installation, go to tripplite.com and choose the model name that relates to your device. A list of available firmware upgrade packages appears.

2. Choose the firmware upgrade package that you wish to install (usually the most recent) and download it to your computer.

13.2 Preparation

To prepare for the firmware upgrade, do the following:

1. Use the Firmware Upgrade Cable provided with this unit to connect a COM port on your computer to the Firmware Upgrade Port of your switch.

Firmware Upgrade Cable
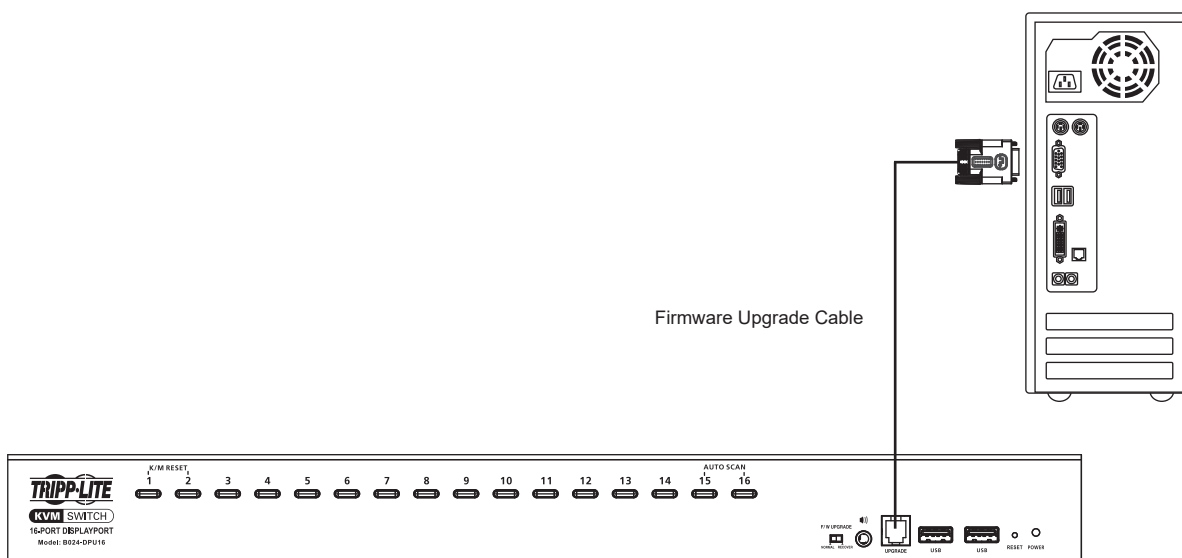
2. Shut down all computers on the KVM installation.

3. From your KVM switch console, login to the OSD as the administrator (see **9.1 OSD Login**) and select the F4 Admin function.

4. Scroll down to Firmware Upgrades. Press [Enter], then press [Y] to invoke Firmware Upgrade mode (refer to "Firmware Upgrade" in the table in section **9.6.4 F4: Admin** for details).

   Or

   Invoke the Firmware Upgrade mode using RS-232 command (see **12.4.11 Firmware Upgrade**).
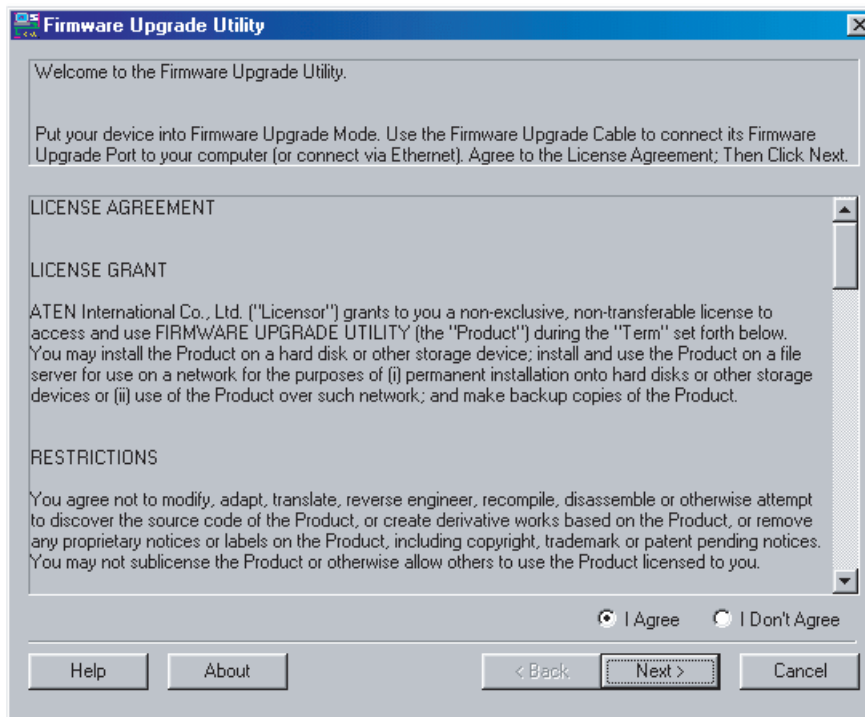
13. Firmware Management Utility

13.3 Starting the Upgrade

To upgrade the firmware:

1. Run the downloaded firmware upgrade package file, either by double clicking the file icon or by opening a command line and entering the full path to it.

The Firmware Upgrade Utility welcome screen will appear:

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

2. Read the License Agreement and enable the "I Agree" radio button.

3. Click **Next** to continue. The Firmware Upgrade Utility main screen will appear. The devices capable of upgrades are listed in the Device List panel:
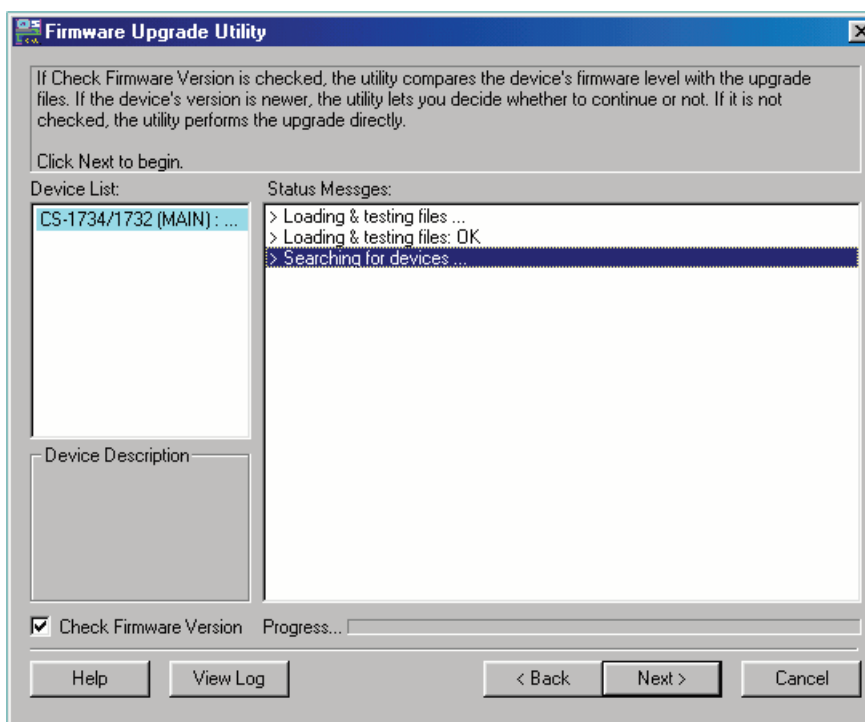
4. When selecting a device in the list, its description appears in the Device Description panel.
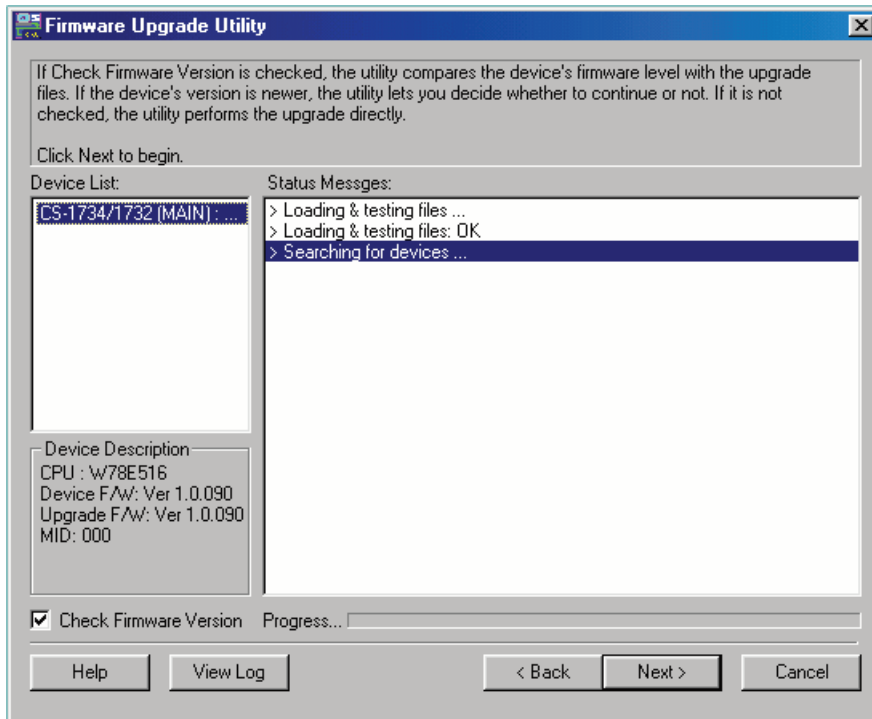

5. Click **Next** to perform the upgrade.

If you enabled Check Firmware Version, the Utility compares the device's firmware level with that of the upgrade files. If it finds that the device's version is higher than the upgrade version, a dialog box will appear informing you of the situation and offering you the option to continue or cancel.
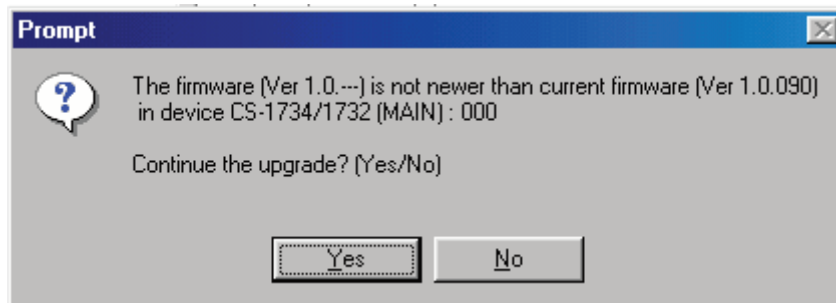
If you didn't enable Check Firmware Version, the Utility installs the upgrade files without checking whether they are a higher level or not.

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

13. Firmware Management Utility

13.4 Upgrade Successful

After the upgrade has completed, a screen will appear to inform you that the procedure was successful.

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

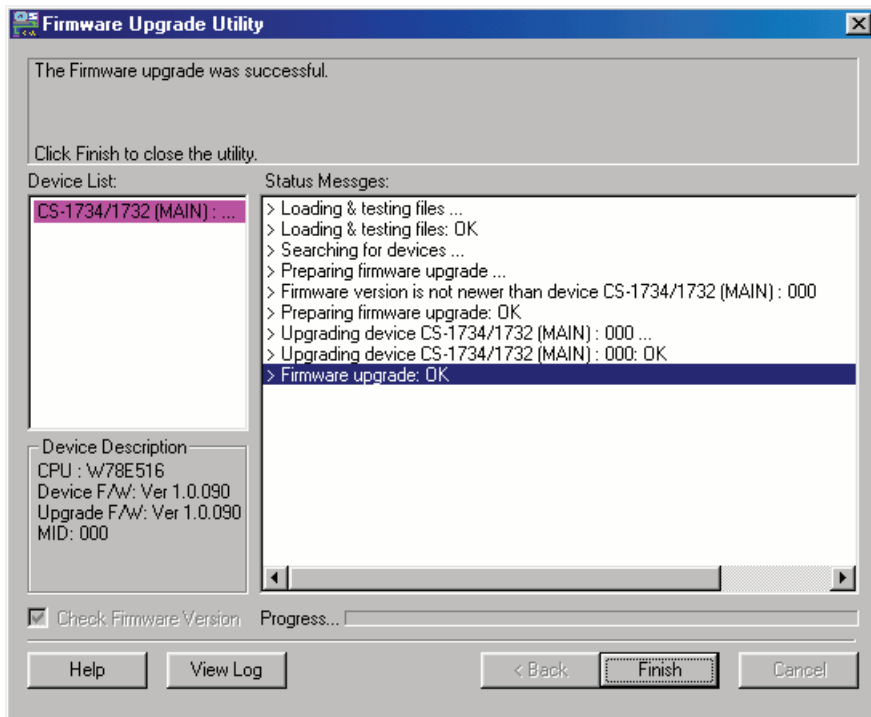After a successful completion, the switches will exit Firmware Upgrade Mode and reset.

13.5 Upgrade Failed

If the Upgrade Succeeded screen does not appear, the upgrade failed to complete successfully. Refer to **13.6 Firmware Upgrade Recovery** for how to proceed.

13.6 Firmware Upgrade Recovery

There are three conditions that call for firmware upgrade recovery:

• When a firmware upgrade is manually aborted.

• When the mainboard firmware upgrade fails.

• When the I/O firmware upgrade fails.

To perform a firmware upgrade recovery, do the following:

1. Power off the switch.

2. Connect the Firmware Upgrade Cable to its Firmware Upgrade Port.

3. Slide the Firmware Upgrade Recovery Switch to the Recover position.

4. Power the switch back on and repeat the upgrade procedure.

5. After the switch has been successfully upgraded, power it off and slide the Firmware Upgrade Recovery Switch back to the Normal position.

6. If the switch is one of the cascaded switches, plug it back into the installation.

7. Power the switch back on.

13. Firmware Management Utility

13.7 OSD Configuration Backup/Restore

The Firmware Management Utility lets you back up the current OSD configuration of the KVM and restore it when necessary.

Storing the OSD configuration settings is useful when deploying more than one installation that uses the same settings.

13.7.1 Backup

To store a backup file to a local computer:

1. Make sure your computer is connected to the KVM (see **13.2 Preparation** and follow steps 1–3).

2. When you have selected the F4 Admin function, scroll down to OSD Config Backup / Restore. Press [Enter], then select **Enable** to invoke OSD Config Backup / Restore mode.

3. Run the Firmware Management Utility. In the dialog box, choose "OSD Configuration Backup/Restore," then click **Next**.

4. In the window that appears, click **Connect Device**.
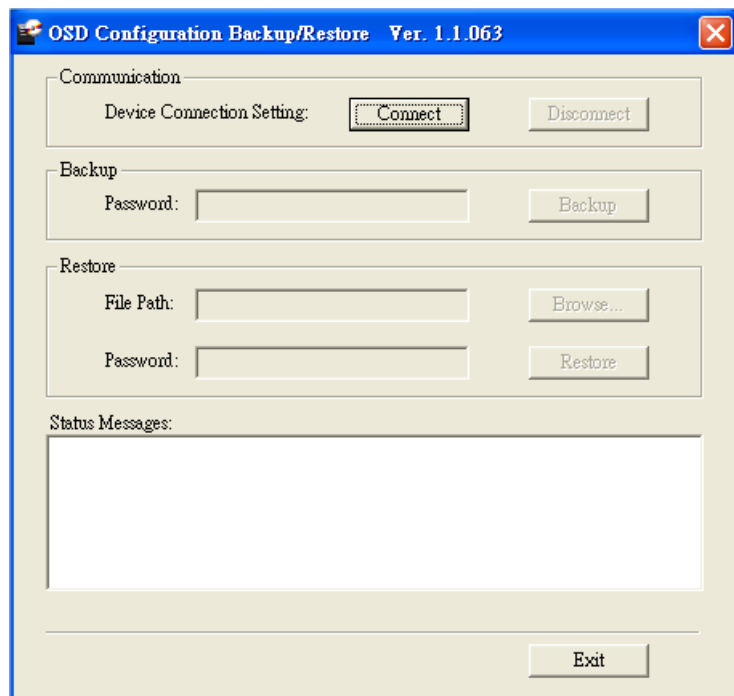
5. In the Password field, key in a password for the file.

Note: Setting a password is optional. If you do not set one, the file can be restored without specifying a password.

6. Click **Backup**.

7. When the browser asks what you want to do with the file, select "Save to disk," then save it in a convenient location.

13. Firmware Management Utility

13.7.2 Restore

Follow these steps to restore a backup file from a local computer:

1. Perform steps 1 to 3 in **13.7.1 Backup**.

2. Click **Restore** to recover an OSD configuration stored in the local computer. If you have previously set a password for this feature, enter the password in the provided field before clicking Restore. A confirmation window will appear. Click **Yes** to proceed.

3. Browse for the OSD configuration file you want to use and click **Restore**. Make sure the backup file is in the local computer.

4. A confirmation window appears when the restore process is done and successful. Click **OK** to close it.

14. Appendix

14.1 B024-DPU08 and B024-DPU16 Connection Tables

The following tables indicate the relationship between the number of Primary View units and the number of computers that they control:

14.1.1 B024-DPU08 (First Level) + B024-DPU08 (Second Level)

PVs	Computers
1	1 – 8
2	8 – 15
3	15 – 22
4	22 – 29
5	29 – 36
6	36 – 43
7	43 – 50
8	50 – 57
9	57 – 64

14.1.2 B024-DPU08 (First Level) + B024-DPU16 (Second Level)

PVs	Computers
1	1 – 8
2	8 – 23
3	23 – 38
4	38 – 53
5	53 – 68
6	68 – 83
7	83 – 98
8	98 – 113
9	113 – 128

14. Appendix

14.1.3 B024-DPU16 (First Level) + B024-DPU08 (Second Level)

PVs	Computers
1	1 – 16
2	16 – 23
3	23 – 30
4	30 – 37
5	37 – 44
6	44 – 51
7	51 – 58
8	58 – 65
9	65 – 72
10	72 – 79
11	151 – 166
12	86 – 93
13	93 – 100
14	100 – 107
15	107 – 114
16	114 – 121
17	121 – 128

14.1.4 B024-DPU16 (First Level) + B024-DPU16 (Second Level)

PVs	Computers
1	1 – 16
2	16 – 31
3	23 – 30
4	31 – 46
5	61 – 76
6	76 – 91
7	91 – 106
8	106 – 121
9	121 – 136
10	136 – 151
11	151 – 166
12	166 – 181
13	181 – 196
14	196 – 211
15	211 – 226
16	226 – 241
17	241 – 256

14. Appendix

14.2 Specifications

			B024-DPU08	B024-DPU16
Computer Connections	Direct		8	16
	Max		128 (via Cascade)	256 (via Cascade)
Port Selection			OSD, Hotkey, Pushbutton, RS-232 Commands	
Connectors	Console Ports	KB	1 x USB Type-A Female	
		Video	1 x DisplayPort Female	
		Mouse	1 x USB Type-A Female	
		Speakers	2 x 3.5 mm Audio Jack Female (Green; 1 x front, 1 x rear)	
	KVM Ports	KB / Mouse	8 x USB 3.1 Gen1 Type-B Female (Blue)	16 x USB 3.1 Gen1 Type-B Female (Blue)
		Video	8 x DisplayPort Female	16 x DisplayPort Female
		Speakers	8 x 3.5 mm Audio Jack Female (Green)	16 x 3.5 mm Audio Jack Female (Green)
	F/W Upgrade		1 x RJ11 Female (Black)	
	Power		1 x DC Jack	
	USB 3.1 Hub		2 x USB 3.1 Gen1 Type-A Female (Blue; 2 x front)	
Switches	Port Selection		8 x Pushbutton	16 x Pushbutton
	Reset		1 x Semi-Recessed Pushbutton	
	F/W Upgrade		1 x Slide Switch	
LEDs	USB Link		8 (Green)	16 (Green)
	On-Line / Selected		8 (Orange)	16 (Orange)
	Power		1 (Green)	
Emulation	Keyboard / Mouse		USB	
Video			DisplayPort: 4096 x 2160 @ 60 Hz	
Scan Interval			1–255 Seconds (Default: 5 secs)	
Power Consumption			DC12V: 18.44W: 136BTU	DC12V: 26.66W: 175BTU
Environment	Operating Temp		32–104ºF (0–40ºC)	
	Storage Temp		-4–140ºF (-20–60ºC)	
	Humidity		0–80% RH, Non-condensing	
Physical Properties	Housing		Metal	
	Weight		6.85 lb. (3.11 kg)	7.8 lb (3.54 kg)
	Dimensions [L x W x H]		17.02 x 8.44 x 1.73 in. (43.24 x 21.43 x 4.40 cm)	

14. Appendix

14.3 Administrator Login Failure

If you are unable to perform an Administrator login (e.g. because the username/password information has become corrupted or you have forgotten it), you can clear the login information with the following procedure:

1. Power off the KVM and remove its housing.

2. Short the jumper labeled J29.
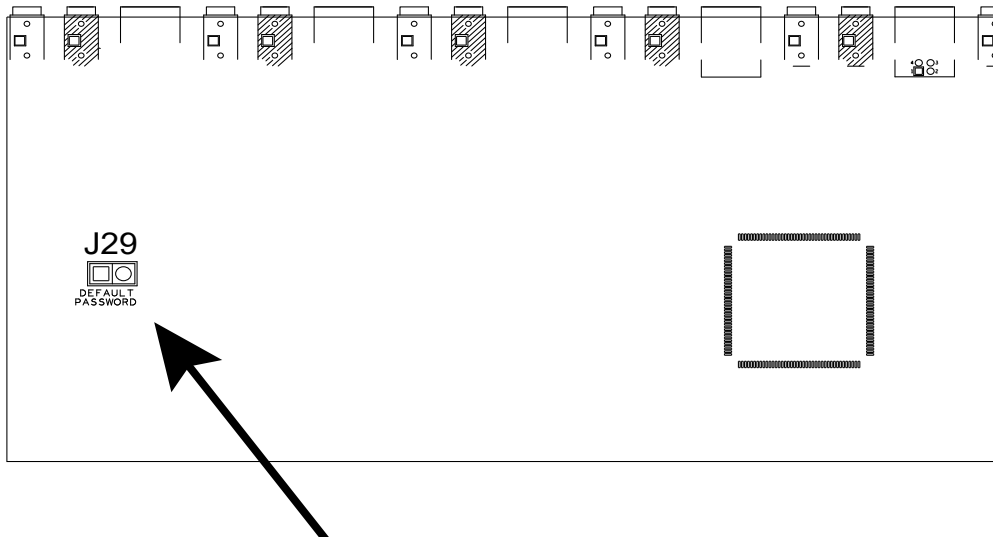
3. Power on the switch.

4. When the front panel LEDs flash, power off the switch.

5. Remove the jumper cap from J29.

6. Close the housing and restart the KVM. After restarting, you can use the default login procedure to login (see **9.1 OSD Login**).

14.4 Factory Default Hotkeys and Settings

Setting	Default
OSD Hotkey	[Scroll Lock] [Scroll Lock]
Invoking HSM Hotkey	[Number Lock] [-]
Auto Scan Interval	5 seconds
Mouse Emulation	Enabled
EDID Mode	DisplayPort Monitor's EDID
Beeper	Enabled
Video DynaSync	Enabled

15. Warranty and Product Registration

3-Year Limited Warranty

TRIPP LITE warrants its products to be free from defects in materials and workmanship for a period of three (3) years from the date of initial purchase.

TRIPP LITE's obligation under this warranty is limited to repairing or replacing (at its sole option) any such defective products. To obtain service under this warranty, you must obtain a Returned Material Authorization (RMA) number from TRIPP LITE or an authorized TRIPP LITE service center. Products must be returned to TRIPP LITE or an authorized TRIPP LITE service center with transportation charges prepaid and must be accompanied by a brief description of the problem encountered and proof of date and place of purchase. This warranty does not apply to equipment which has been damaged by accident, negligence or misapplication or has been altered or modified in any way.

EXCEPT AS PROVIDED HEREIN, TRIPP LITE MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Some states 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 TRIPP LITE 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, TRIPP LITE 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.

PRODUCT REGISTRATION

Visit tripplite.com/warranty today to register your new Tripp Lite product. You'll be automatically entered into a drawing for a chance to win a FREE Tripp Lite product!*

* No purchase necessary. Void where prohibited. Some restrictions apply. See website for details.

Regulatory Compliance Identification Numbers

For the purpose of regulatory compliance certifications and identification, your Tripp Lite product has been assigned a unique series number. The series number can be found on the product nameplate label, along with all required approval markings and information. When requesting compliance information for this product, always refer to the series number. The series number should not be confused with the marketing name or model number of the product.

WEEE Compliance Information for Tripp Lite Customers and Recyclers (European Union)

Under the Waste Electrical and Electronic Equipment (WEEE) Directive and implementing regulations, when customers buy new electrical and electronic equipment from Tripp Lite they are entitled to:

• Send old equipment for recycling on a one-for-one, like-for-like basis (this varies depending on the country)

• Send the new equipment back for recycling when this ultimately becomes waste

Tripp Lite has a policy of continuous improvement. Specifications are subject to change without notice. Photos and illustrations may differ slightly from actual products.