Owner's Manual

NetDirector® Console
KVM Switch (8- or 16-Port)

Models: B020-008-17, B020-016-17

TRIPP·LITE

OVER 90 YEARS
Manufacturing Excellence.

1111 W. 35th Street, Chicago, IL 60609 USA • www.tripplite.com/support

Copyright © 2014 Tripp Lite. All rights reserved.
All trademarks are the property of their respective owners.

Note: Follow these instructions and operating procedures to ensure correct performance and to prevent damage to this unit or to its connected devices.

Package Contents

- 1 KVM Switch (B020-008-17 or B020-016-17)
- 1 PS/2 KVM Cable Kit
- 1 USB KVM Cable Kit
- Firmware Upgrade Cable
- 1 Owner's Manual CD
- Power Cord

Check to see that the unit arrived undamaged, with all of its contents.

Table of Contents

1. Features

- Integrated KVM Console Includes a 17" LCD Monitor, Keyboard and Touchpad in a 1U Rack-mount Housing
- No Software Required—Select Computer via Hotkeys or On-Screen Display (OSD) Menus
- Auto Scan Feature for Monitoring User-Selected Computers
- Hot Pluggable—Add/Remove Computers Without Powering Down the Switch
- Two-Level Password Security—Only Authorized Users View and Control the Computers (Up to Four Users Plus an Administrator; Separate Profiles For Each)
- Two-Level Log-out—Manual and Timed
- PS/2 Keyboard and Mouse Emulation—Computers Boot Even When the Console Focus is Elsewhere
- Superior Video Quality—Supports Resolutions of up to 1280 x 1024
- Rack Mountable in 19" System Rack (1U)
- Upgradable Firmware
- External monitor, keyboard and mouse, or IP interface unit connection capability

2. System Requirements

2.1 Computer

- A VGA, SVGA or Multisync computer with a HD15 port.

  Note: The B020-016-17 and B020-008-17 have a maximum resolution of 1280 x 1024, so the computer's resolution setting must not exceed 1280 x 1024.

  Either

  1. A mini DIN 6 (PS/2) keyboard and mouse port

  2. A USB Type A port

2.2 Console*

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

* Optional external console ports are included on the NetDirector Console KVM Switches.

2.3 Cables

This KVM switch requires the following custom-wired premium cables:

Function	Tripp Lite Part
To Connect a PS/2 Computer to the KVM	P774- Series PS/2 KVM Cable Kit
To Connect a USB Computer to the KVM	P776- Series USB KVM Cable Kit
USB Adapter (connects a USB system to the P774 series KVM cable)	B015-000

3. Introduction

3.1 Front View of Console KVM Switch

1 Handle
Pull to slide the KVM module out; push to slide the module in (see item 13 in this list).

2 LCD
After sliding the KVM module out, flip up the cover to access the LCD monitor.

3 LCD Controls
The LCD On/Off switch is located here, as well as buttons to control the position and picture settings of the LCD. See page 9 for details.

4 Port Switches
Press a switch to bring the KVM focus to the computer attached to its corresponding port. See page 10 for details.

5 Port LEDs (either 16 or 8 LEDs depending on model)
Two Port LEDs are built into the Port Switches. The one on the left is the **On Line LED**; the one on the right is the **Selected Port LED**:

- An **On Line LED** lights ORANGE to indicate that the computer attached to its corresponding port is up and running.

- A **Selected Port LED** lights GREEN to indicate that the computer attached to its corresponding port is the one that has the KVM focus. The LED is steady under normal conditions, but flashes when its port is accessed under Auto Scan Mode (see page 11).

6 Keyboard

7 Touchpad

8 Power LED
Lights BLUE to indicate that the unit is receiving power.

9 Rackmounting Tabs
The rackmounting tabs located at each corner of the unit secure the chassis to a system rack. Refer to page 6 for rackmounting details.

10 Lock LEDs
The Num Lock, Caps Lock, Scroll Lock LEDs are located here.

11 Reset Switch
Located to the right of the Lock LEDs. Press this recessed switch in with a thin object to perform a system reset.

12 Firmware Upgrade Section

- **Firmware Upgrade Port:** The Firmware Upgrade Cable that transfers the firmware upgrade data from the administrator's computer to the Console KVM Switch plugs in here.

- **Firmware Upgrade Switch:** During normal operation this switch should be in the NORMAL position. (See page 21 for firmware upgrading details.)

13 Slide Release
In order to bring the console out, you must first release it by sliding these tabs to the inside. See page 8 for details on sliding the console in and out.

4
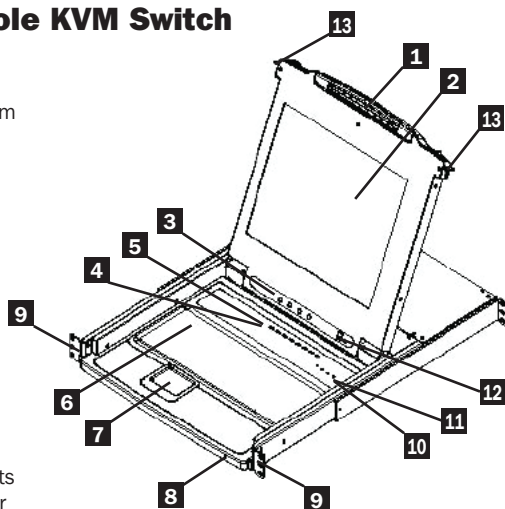
3. Introduction

3.2 Rear View of Console KVM Switch
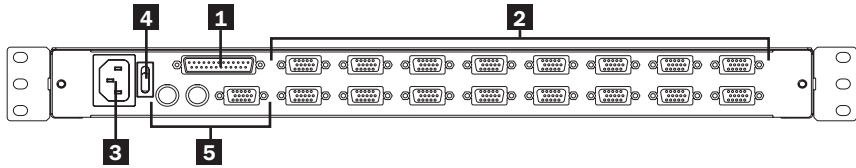
1 Daisy-Chain Port

2 CPU Port Section
The cables that link to the computers plug in here.

Note: The shape of these 15-pin connectors has been specifically modified so that only KVM cables designed to work with this switch can plug in (see the Cables section on page 3, for details). Do NOT attempt to use ordinary 15 pin VGA connector cables to link these ports to the computers.

3 Power Socket
This is a standard 3-prong AC power socket. The power cord from an AC source plugs in here.

4 Power Switch
This is a standard rocker switch that powers the unit On and Off.

5 External Console Section
For flexibility and convenience, NetDirector Console KVM Switches support an independent, external KVM console. The external console's monitor (HD15), keyboard (PS/2) and mouse (PS/2) plug in here.

4. Installation

4.1 Rackmounting Guidelines

Ambient Operating Temperature

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-unit rack assembly, make sure that the temperature will not exceed the maximum rated ambient temperature.

Airflow

Ensure that the airflow within the rack is not compromised.

Circuit Overloading

When connecting the equipment to the supply circuit, consider the effect that overloading of circuits might have on over-current protection and supply wiring.

Reliable grounding of rackmounted equipment should be maintained.

To protect against circuit overloading, you should connect your NetDirector Console KVM and attached computers/servers to a Tripp Lite SmartPro® or SmartOnline® UPS System.

4.2 Rackmounting Instructions for Console KVMs

The NetDirector Console KVM Switch is designed for mounting in a 1U rack system. The various mounting options are explained in the sections that follow.

Standard Rackmounting

The standard rackmounting brackets that come attached to the KVM Switch allow the unit to be installed in standard 1U racks by a single individual.

1 Slide out the rear mounting brackets from the console and mount both brackets (separate from the console) to the inside rear of a standard 1U rack system using user-supplied screws.

2 Take the console and gently slide it into the two rear-mounted brackets in the rack and secure the console in place by inserting user-supplied screws.

2-Post Rackmounting

The NetDirector Console KVM Switch can also be mounted in a 2-post rack installation using the optional 2-Post Rackmount Kit (model #: B019-000). The mounting hardware allows for the console to be opened with the drawer in any position. Heavy-duty 14-gauge steel provides stability and prevents the console frame from twisting. See the B019-000 instructional manual for detailed mounting instructions.

6
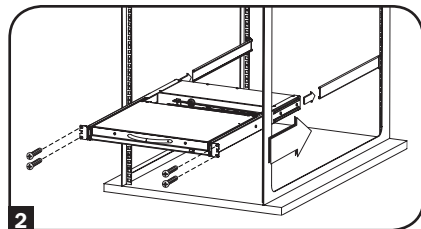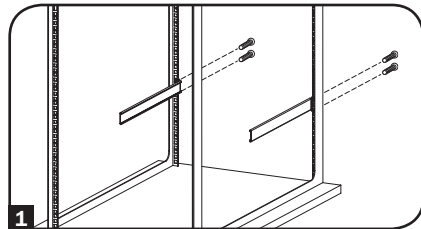
4. Installation

4.3 Single-Station Installation

1. Ensure that power to all the devices to be connected has been turned off.

2. **(Optional)** Connect a separate keyboard, monitor and mouse to the local ports on the back of the console (Can also be used to connect a B051-000 IP unit).

3. Use the correct Tripp Lite KVM cable kits (as described in the *Cables* section on page 3), to connect a computer's Keyboard, Video and Mouse ports to any available port on the KVM switch.

4. Plug the power cord into the KVM's power jack, then plug into a UPS, surge or other AC power source.

5. Turn on the power to the computers.

4.4 Hot Plugging
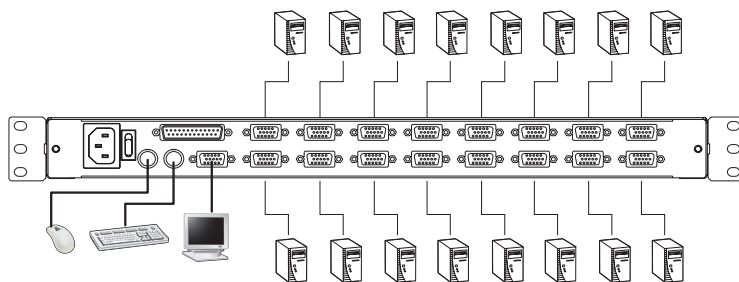
All KVM Switches support hot plugging—components can be removed and added back into the installation by unplugging their cables from the ports without having to shut the switch down. However, in order for Hot Plugging to work properly, these procedures must be followed:

Hot Plugging CPU Ports

Switch CPU ports by unplugging the KVM cable kit and replugging into the desired port. In order for the OSD menus to correspond to the change made, you must manually reconfigure the OSD information for the new Port. See the *F3 SET* (page 16) and *F4 ADM* (page 17), functions for details.

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

Hot Plugging Console Ports

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

1. You may unplug the mouse and plug it back in again (to reset the mouse, for example), as long as you use the *same* mouse.

2. If you plug in a different mouse, all the stations and all the computers on the installation must be shut down for 10 seconds, then restarted using the Power Up Sequence described in section 4.3.

Note: If, after hot plugging (or at any other time), there is no response to keyboard and/or mouse input, perform a Keyboard and Mouse Reset by pressing in the Reset switch (see page 4).

5. Basic Operation

5.1 Opening the NetDirector Console KVM

The console is located under the top cover. To access the console, slide the console module out and raise the cover.

Note: *As a safety precaution, to keep the console from accidentally sliding out, the console is locked into the In position. Before you can pull the console module out, you must release it by pushing the catches on the unit's front panel toward the center of the switch.*
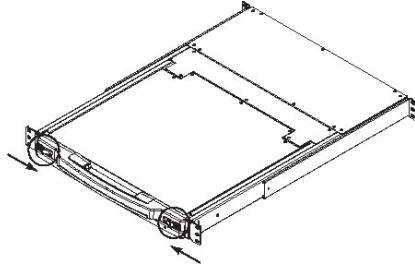
5.2 Closing the NetDirector Console KVM

To slide the console module back in, close the cover and do the following:

1. Pull the safety catches on the unit's side rails toward you and push the module in until it stops.

2. Release the catches; pull the module slightly toward you; then push it all the way in.

Note: *The reason for the two-step procedure is to minimize the chances of pinching your fingers when sliding the module in.*
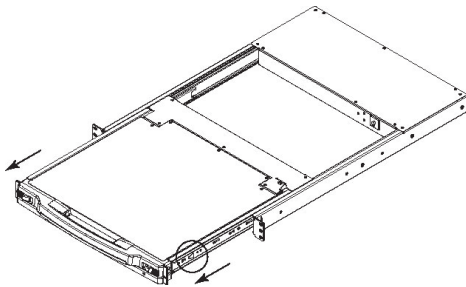
5. Basic Operation

5.3 LCD OSD (On-Screen Display) Configuration

Exit	◀|▼	▶|▲	Menu
○	○	○	○

The LCD OSD allows you to set up and configure the LCD display:

• To open up the LCD OSD main menu, press the button marked *Menu*.

• Use the ◀|▼ and ▶|▲ buttons to navigate and make adjustments. After navigating to a setting choice, use the *Menu* button to bring up the adjustment screen.

• When making adjustments, ▶|▲ increases the value; ◀|▼ decreases the value.

• When satisfied, press *Exit* to return to the OSD main menu.

• When all adjustments have been made, press *Exit* to close the LCD OSD.

The following is an explanation of the settings:

Auto Adjust	Automatically configures all the settings for the LCD panel to the levels the OSD considers optimal.
Brightness	Adjusts the background black level of the screen image.
Contrast	Adjusts the foreground white level of the screen image.
Phase	Adjusts the vertical size of the screen image.
Clock	Adjusts the horizontal size of the screen image.
H-Position	Positions the display area on the LCD panel horizontally (moves the display area left or right).
V-Position	Positions the display area on the LCD panel vertically (moves the display area up or down).
Color Adjustment	Adjusts the color quality of the display. You can adjust the "warmth" value, color balance, etc. Has a further submenu to allow the fine-tuning of the RGB values.
Language	Selects the language that the OSD displays its menus in (English, French, Spanish, German, Italian).
Recall	Returns the adjustments on all menus and submenus to their factory default settings.

6. Hotkeys

6.1 Port Selection

NetDirector KVM Switches provide three port selection methods to access the computers on the installation: Manual push-buttons, OSD (On Screen Display) menus and Hotkey commands.

Manual Port Switching (Console KVM Switches Only)

- Press the push-button of the port you want the KVM to focus on.
- Press buttons 1 & 2 simultaneously for two seconds to perform a keyboard and mouse reset.
- Press buttons 7 & 8 (8-port KVMs) or 15 & 16 (16-port KVMs) simultaneously for two seconds to invoke Auto Scan Mode (see page 11).

6.2 Port Control Using Hotkeys

Hotkey Port Control lets you connect to a computer by making the port selection directly from the keyboard. The Hotkey Port Control options are:

- Selecting the Active Port
- Auto Scanning
- Previous/Next Switching

6.3 Invoking the Hotkey Mode

1) All Hotkey operations begin by invoking the *Hotkey Mode*. To initiate the Hotkey Mode:

- Press and hold down the [Num Lock] key;
- Press and release the [Minus] key or [Asterisk] key;
- Release the [Num Lock] key:

Note: 1. *The [-] or [*] key must be released within one half second, otherwise the Hotkey mode is cancelled and it has no effect.*

2. *We recommend using* **[Num Lock]** + **[-]** *and have continued to use it in the rest of these instructions. You may use* **[Num Lock]** + **[*]** *if you prefer.*

2) When Hotkey Mode is active:

- The Num Lock, Caps Lock, and Scroll Lock LEDs flash in succession to indicate that the Hotkey mode is active. They stop flashing and revert to normal status when Hotkey Mode is exited.
- A Command Line appears on the monitor screen. The command line prompt is the word *Hotkey*: in yellow text on a blue background. It displays the subsequent Hotkey information that is keyed in.
- Ordinary keyboard and mouse functions are suspended - only Hotkey compliant keystrokes and mouse clicks (described in the sections that follow) can be input.

3) Pressing **[Esc]** exits Hotkey Mode.

6. Hotkeys

6.4 Port ID Numbering

Each CPU port in an installation is assigned a unique Port ID. The Port ID is made up of two parts: a *Station Number*, and a *Port Number*:

- The *Station Number* is a two-digit number that identifies the switch's position in the daisy chain sequence. This corresponds to the number displayed on the front panel Station ID LED.
- The *Port Number* is a two-digit number which identifies the port number that the computer is connected to.
- The Station Number precedes the Port Number.
- Station and Port numbers are always 2 digits, so 1 - 9 becomes 01 - 09 (e.g., a computer attached to **Port 7** of **Station 15** has a Port ID of **15-07**).

6.5 Selecting the Active Port

You can directly access a port by doing the following:

Invoke Hotkey Mode with the **[Num Lock]** + **[-]** combination

1) Enter the Port ID

   The Port ID numbers appear on the Command Line as they are entered. To correct a mistake, use **[Backspace]** to erase the wrong number.

2) Press **[Enter]**

   Once **[Enter]** has been pressed, the KVM switches to the designated computer and you automatically exit the Hotkey Mode.

6.6 Auto Scanning

When in the Auto Scan mode, the KVM automatically sequences through all the active CPU Ports that are accessible to the currently logged on User (see *Scan/Skip Mode* of the OSD **F3 SET** menu, page 16).

6.7 Setting the Scan Interval

The amount of time the KVM remains on each port during Auto Scan is set using the *Scan Duration* setting in the OSD's **F3 SET** menu (see page 16). The scan interval defaults at 5 seconds. The scan interval can be changed prior to activating Hotkey Auto Scanning by performing the following:

1) Invoke Hotkey Mode with the **[Num Lock]** + **[-]** combination

2) Key in **[T]** **[n]**

   [T] is the letter T, and **[n]** is a number from 1-255 that represents the number of seconds for the scan interval. The letter T and the numbers display on the Command Line as you key them in. To correct a mistake, use **[Backspace]** to erase the wrong number.

3) Press **[Enter]**

   After you press **[Enter]**, the scan interval is set to the time frame entered.

11

6. Hotkeys

6.8 Starting Auto Scan

To start Auto Scanning, enter the following Hotkey combination:

1) Invoke Hotkey Mode with the **[Num Lock]** + **[-]** combination

2) Key in **[A]**. After you press **A**, you automatically exit Hotkey Mode and enter Auto Scan Mode.

3) An autoscan can be paused at any time (see below).

4) To exit Auto Scan Mode, press **[Esc]** or **[Spacebar]**.

Note: 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.

6.9 Pausing in Auto Scan

While in Auto Scan Mode, the scan can be paused in order to keep the focus on a particular computer either by pressing **P** or with a left click of the mouse. During the time that Auto Scanning is paused, the Command Line displays: **Auto Scan: Paused**.

In many cases *Pausing* is more convenient than *Exiting* the Auto Scan Mode because when you resume scanning while in *Pause*, you start from where you left off. If you *Exited* and restarted, scanning would start 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.

6.10 Skip Mode

This feature allows you to manually sequence between computers in order to monitor them. This manual version of the Auto Scan mode lets you dwell on a particular port for as long as you like. To invoke Previous/Next Switching, key in the following Hotkey combination:

1) Invoke Hotkey Mode with the **[Num Lock]** + **[-]** combination

2) Key in **[Arrow]** refers to any of the arrow keys on the keyboard. After you press **[Arrow]**, you automatically exit Hotkey Mode, and enter Skip Mode where you can switch ports as follows:

   ← Skips from the current port to the first accessible port previous to it. (*See Scan/Skip Mode*, page 16, for information regarding accessible ports.)

   → Skips from the current port to the next accessible port.

   ↑ Skips from the current port to the last accessible port of the previous Station.

   ↓ Skips from the current port to the first accessible port of the next Station.

3) To exit Skip Mode, press **[Esc]**

*Note: 1. Once Skip Mode has been invoked, until you exit, you can keep on skipping simply by pressing an Arrow key. You don't have to use the **[Num Lock]** + **[-]** combination again.*

2. 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.

6.11 Hotkey Beeper Control

The Beeper can be turned On/Off via Hotkey or the OSD (see pages 14-20 for OSD details). To toggle the Beeper, key in the following Hotkey combination:

1) Invoke Hotkey Mode with the **[Num Lock]** + **[-]** combination

2) Key in **[B]**

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

12

6. Hotkeys

6.12 Hotkey Summary Table

Hotkey Sequence – Starting with [Num Lock] + [-] or [Num Lock] + [*] then …	
[Port ID] [Enter]	Switches access to the computer connected to that Port ID.
[T] [n] [Enter]	Sets the Auto Scan interval to n seconds - where n is a number from 1 - 255.
[A]	Invokes Auto Scan Mode.
[←]	Invokes Skip Mode and skips from the current port to the first accessible port previous to it.[†]
[→]	Invokes Skip Mode and skips from the current port to the next accessible port.[†]
[↑]	Invokes Skip Mode and skips from the current port to the last accessible port of the previous Station.[†]
[↓]	Invokes Skip Mode and skips from the current port to the first accessible port of the next Station.[†]
[B]	Toggles the Beeper On or Off.

† Once Skip Mode has been invoked and until you exit, you can keep on skipping simply by pressing an Arrow key. You don't have to use the **[Num Lock]** *+* **[-]** *combination again.*

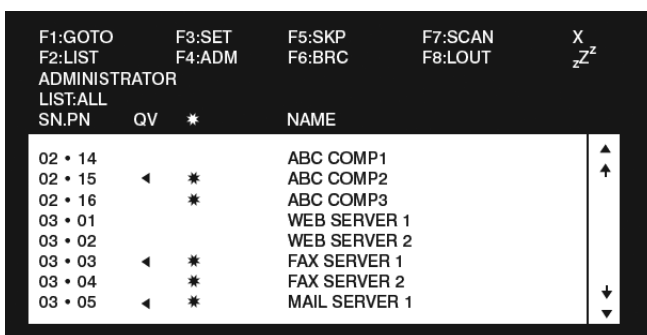9/9/2014   11:25:42 AM

7. OSD (On-Screen Display) Operation

7.1 OSD Overview

The On Screen Display (OSD) is used for all computer control and switching procedures. All procedures start from the OSD Main Menu. To pop up the Main Menu, hold down the **[Fn]** key and tap the **[Scroll Lock]** key twice.

Note: You can change the Hotkey from the **[Scroll Lock]** *key to the* **[Ctrl]** *key (see OSD Hotkey, page 16. In this case you tap the* **[Ctrl]** *key twice. The same* **[Ctrl]** *keys must be used (ie. both the left and the right).*

The OSD uses a two-level (Administrator / User) password system. Before the OSD Main Screen appears, a dialog box asks for your password. If the password function has been set, a password must be entered in order to access the system.

If this is the first time that the OSD is being run, or if the password function has not been set, simply press **[Enter]** to proceed. The OSD Main Screen comes up in Administrator Mode. In this mode, you have administrator privileges, with access to all Administrator and User functions. In addition, you can set up operations including password authorization for the future.

When you invoke the OSD, a screen similar to the one above appears:

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

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

3. *Only the ports that have been set accessible by the Administrator for the currently logged in User are visible (see SET ACCESSIBLE PORTS, page 18, for details).*

7.2 OSD Navigation

• To close the menu and deactivate OSD, click the **[X]** at the upper right corner of the OSD Window; or press **[Esc]**.

• To Logout, press **[F8]**, or click F8, on the OSD Menu Bar or click the zZz symbol at the upper right hand corner of the OSD Screen.

• To move up or down one line at a time, click the Up and Down Triangle symbols (▲ ▼) or use the Up and Down Arrow Keys. If there are more entries than appear on the screen, the screen will scroll.

• To move up or down 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 entries than appear on the screen, the screen will scroll.

• To activate a port, double-click it, or move the Highlight Bar to it then press **[Enter]**.

• After executing any action, you automatically go back to the menu one level above.

14

7. OSD (On-Screen Display) Operation

7.3 OSD Main Screen Headings

Heading	Explanation
SN-PN	This column lists the Port ID numbers (Station Number - Port Number) for all the CPU ports on the installation. The simplest method to access a particular computer is move the Highlight Bar to it, then press [**Enter**].
QV	An arrow in this column indicates that the corresponding port is selected for Quick View scanning (see *Set Quick View Ports*, page 18).
*	A Sun symbol in this column indicates that the corresponding computer is both powered On and On Line.
NAME	If a port has been given a name (see *Edit Port Names*, page 17), its name appears in this column.

7.4 OSD Functions

To access an OSD function:

1) Either click a Function Key field on the screen, or press a Function Key on the keyboard.

2) Make your choice in the sub-menus that appear by either double-clicking it, or moving the Highlight Bar to it, then pressing [**Enter**].

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

F1 Go To (GOTO)

Click the **F1** field or press [**F1**] to activate the GOTO function. GOTO allows you to switch directly to a port either by keying in the port's *Name*, or its *Port ID*.

• To use the Name, enter [**1**]; key in the port's *Name*; then press [**Enter**].

• To use the Port ID, enter [**2**]; key in the *Port ID*; then press [**Enter**].

Note: A partial Name or Port ID can be entered. The screen will show all the computers that match the Name or Port ID pattern AND that the User is allowed to access (see SET ACCESSIBLE PORTS, page 18).

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

F2 List Ports (LIST)

This function lets you tailor the list of ports the OSD will display on the Main Screen. The submenu choices and their meanings are given in the table below:

Choice	Meaning
ALL	Lists all of the ports on the installation.
POWERED ON	Lists only the ports that have their attached computers Powered On.
QVIEW*	Lists only the ports that have been selected as Quick View Ports (see SET QUICK VIEW PORTS, page 18)
QVIEW + POWERED ON*	Lists only the ports that have been selected as Quick View Ports (see SET QUICK VIEW PORTS, page 18), and that have their attached computers Powered On.

* These items only show up on the Administrator's screen, since only the administrator has Quick View setting rights (see SET QUICK VIEW PORTS, page 18, for details).

Move the Highlight Bar to the desired choice and press [**Enter**]. An icon appears next to the choice to indicate that it is the one currently selected.

F3 Set Environment (SET)

This function allows each User and the Administrator 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) Double-click the item; or move the highlight bar to it and press **[Enter]**

2) After you select an item, a submenu with more choices will appear. To make a selection, either double-click a choice or move the Highlight Bar to the desired place and press **[Enter]**. An icon will appear beside the selected choice to identify it. The settings are explained in the following table:

Setting	Function
OSD HOTKEY	Select the Hotkey that activates the OSD function: use either **[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	Position the Port ID identifier anywhere on the screen. The default is the upper right corner. Use the Mouse or the Arrow Keys plus **[Pg Up]**, **[Pg Dn]**, **[Home]**, **[End]**, and **[5]** (on the numeric keypad with **[Num Lock]** off), to position the Port ID display, then double-click or press **[Enter]** to lock the position and return to the Set submenu. *Note: The position for the ID identifier is set independently for each port on the installation; the choice specified here only applies to the port that is currently active.*
PORT ID DISPLAY DURATION	Determine the amount of time a Port ID appears on the monitor once a port change has taken place. The choices are: **User Defined** – user defined amount of time (from 1 - 255 sec.) **Always On** – displays the Port ID at all times. If choosing User Defined, key in the number of seconds and press [**Enter**]. The default is 3 Seconds. A setting of 0 (zero) disables this function.
PORT ID DISPLAY MODE	Select how the Port ID is displayed: the Port Number alone **(PORT NUMBER)**; the Port Name alone **(PORT NAME)**; or the Port Number plus the Port Name **(PORT NUMBER + PORT NAME)**. The default is **(PORT NUMBER + PORT NAME)**.
SCAN DURATION	Determine how long each port is connected as the KVM cycles through the ports in Auto Scan Mode (see F7 SCAN page 20). Key in a value from 1 - 255 seconds, then press [**Enter**]. The default is 5 seconds; a setting of 0 (zero) disables the Auto Scan Function.
SCAN/SKIP MODE	Select the computers that will be accessed under Skip Mode (see F5 SKP, page 19), and Auto Scan Mode (see F7 SCAN, page 20). Choices are: ALL - All the Ports which have been set Accessible (see SET ACCESSIBLE PORTS, page 18; POWERED ON – Only those Ports which have been set Accessible and are Powered On; QUICK VIEW - Only those Ports which have been set Accessible and have been selected as Quick View Ports (see SET QUICK VIEW PORTS, page 18); QUICK VIEW + POWERED ON - Only those Ports which have been set Accessible and have been selected as Quick View Ports and are Powered On. The default is ALL. *Note: The Quick View choices only show up on the Administrator's screen, since only the administrator has Quick View setting rights (see SET QUICK VIEW PORTS, page 18).*
SCREEN BLANKER	If the console is left idle for the amount of time set with this function, the screen is blanked. Key in a value from 1 - 30 minutes, then press [**Enter**]. A setting of 0 disables this function. The default is 0 (disabled).
HOTKEY COMMAND MODE	Enables / Disables the Hotkey Command function if a conflict with programs running on the computers occurs.

F4 Administrator (ADM)

F4 is an Administrator-only function. It allows the Administrator to configure and control the overall operation of the OSD. To change a setting double-click it or use the Up / Down Arrow Keys to move the highlight bar to the item and press **[Enter]**.

After an item has been selected, a submenu with additional choices will appear. Either double-click the desired choice, or move the Highlight Bar to it and press **[Enter]**. An icon appears beside the selected choice to identify it. The settings are explained in the following table:

Setting	Function
SET USERNAME AND PASSWORD	Sets the Usernames and Passwords for the Administrator and Users: One Administrator and four User passwords can be set.
	After selecting one of the User fields or the Administrator field, a screen allows you to key in your password. The password may be up to 12 characters long, and can consist of any combination of letters (both upper and lower case) and numbers (A - Z, a - z, 0 - 9), as well as commas, %, *, and parentheses.
	Key in the Username and Password for each individual and press **[Enter]**. Use the backspace key to erase letters or numbers in order to modify or delete a Username and/or Password.
SET LOGOUT TIMEOUT	If the console is left idle for the amount of time set with this function, the Operator will be automatically logged out. A login is necessary before the console can be used again. This lets other Operators access the computers if the original has forgotten to log out. To set the timeout value, key in a number from 1 - 180 minutes, then press **[Enter]**. If the number is 0 [zero], this function is disabled.
	Default is 0 (disabled).
EDIT PORT NAMES	Every port can be given a name to help identify the attached computer. The Administrator can use this function to create, modify, or delete port names. To edit a port name: click the desired port, or use the Navigation Keys to move the highlight bar to it, then press **[Enter]**.
	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; A - Z**
	All numeric characters: **0 - 9**
	+ - / : . and **Space**
	Case does not matter as the OSD displays the Port Name in all capitals no matter how they were entered.
	When finished editing, press **[Enter]** to have the change take effect. To abort the change, press **[Esc]**.
RESTORE DEFAULT VALUES	Undo all changes and return to the original default settings using this function. The only exception is the Names settings assigned to the Ports.
	Note: Passwords are not affected.
CLEAR THE NAME LIST	This function is similar to Restore Default Values. The difference is that it also clears the Names settings along with undoing all changes and returning the setup to the original default settings.
ACTIVATE BEEPER	Choices are **Y** (for Yes), or **N** (for No). When activated, the beeper sounds whenever a port is changed; the Auto Scan function is activated (see F7 SCAN, page 20); an invalid entry is made on an OSD menu; the default is **Y** (activated).

7. OSD (On-Screen Display) Operation

Setting	Function
SET QUICK VIEW PORTS	Allows the Administrator to select which Ports are to be Quick View ports. To select/deselect a port as a Quick View Port, double-click the desired port, or use the Navigation Keys to move the highlight bar to it, then Press **[Enter]**.
	An arrow is displayed in the QV column on the Main Screen to indicate that a port has been selected as a Quick View Port. The arrow disappears when a port is deselected. If one of the Quick View options is chosen for the LIST view (see F2 LIST, page 15), only a Port that has been selected here will display on the List.
	If one of the Quick View options is chosen for Auto Scanning (see SCAN/SKIP MODE, page 12), only a Port that has been selected here will be Auto Scanned. The default is for no ports to be selected.
SET ACCESSIBLE PORTS	Allows the Administrator to define a User's access to the computers in the installation on a Port-by-Port basis. For each User, select the target Port and 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 **V** for all users on all Ports.
	Note: A blank setting means that access rights have not been granted. The Port will not appear on the User's LIST on the Main Screen.
RESET STATION IDS	The OSD settings will not correspond to a new configuration if the position of one of the Stations in the daisy chain is changed. This function directs the OSD to rescan the Station positions of the entire installation and updates the OSD so that the OSD Station information corresponds to the new physical layout.
	Note: Only the Station Numbers get updated. All Administrator settings (such as Set Accessible Ports, Set Quick View Ports, etc.), for all of the computers affected by the change, have to be manually redone. The only exception to this is Port Names.
FIRMWARE UPGRADE	In order to upgrade the KVM's firmware (see pages 21-24), the Firmware Upgrade Mode must be invoked.
SET CONSOLE MODE	This setting selects which consoles (internal/external) are enabled:
	0 Both consoles enabled
	1 LCD console only
	2 External console only
	Use the spacebar to cycle to the choice you want. The default is 0.

7. OSD (On-Screen Display) Operation

F5 Skip (SKP)

Invokes the Skip (SKP) Mode by clicking the **F5** field or pressing **[F5]**. This function skips backward or forward—switching the console focus from the currently active computer port to the previous or next available one.

• The selection of computers to be available for Skip Mode switching is made with the *Scan/Skip Mode* setting under the **F3 SET** function (see page 16).

• When in the Skip Mode, press:

   • [←] to switch to the previous computer in the List

   • [→] to switch to the next computer in the List

   • [↑] to switch to the last computer on the previous station in the List

   • [↓] to switch to the first computer on the next station in the List.

   Note: The Skip mode will only move to the previous or next available computer in the Scan/Skip Mode selection (see page 12).

• If a Port has been selected for *Scan/Skip Mode*, a Left/Right Triangle symbol appears before its Port ID Display (when the focus switches to that port), to indicate so.

• The keyboard and mouse will not function normally in Skip Mode. The only keys you will be able to use are the arrow keys. The Skip Mode must be exited in order to regain normal control of the keyboard and mouse.

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

F6 Broadcast Mode (BRC)

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

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

BRC works in conjunction with the **F2 LIST** function. The LIST function (see page 15) lets you tailor the list of ports the OSD will display on the OSD Main Screen. When a command is broadcast, it is done only to the Ports currently displayed on the OSD Main Screen.

• A Speaker symbol appears before the Port ID Display to indicate BRC Mode is in effect.

• The mouse will not function while the BRC Mode is in effect. You must exit the 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]**.

7. OSD (On-Screen Display) Operation

F7 Scan (SCAN)

Invoke the Auto Scan Mode by clicking the **F7** field or pressing **[F7]**. This function allows you to cycle through available computers at regular intervals so that you can monitor their activity without having to take the trouble of switching yourself.

• The selection of computers to be included for Auto Scanning is made with the Scan/Skip Mode setting under the **F3 SET** function (see page 16).

• The amount of time that each Port displays for is set with the Scan Duration setting under the **F3 SET** function (see page 16). When you want to stop at a particular location, press the **[Spacebar]** or **[Esc]** 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 that it is being accessed under *Auto Scan Mode*.

• While Auto Scan Mode is in effect, the keyboard and mouse will not function. You must exit Auto Scan Mode in order to regain control of the console.

• While in Auto Scan Mode, the scanning can be paused 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]**.

F8 Log Out (LOUT)

Clicking the **F8** field or pressing **[F8]** logs you out of the KVM Switch, and blanks the Console screen. This is different from simply pressing **[Esc]** to deactivate the OSD. With this function you must log in again to regain access to the KVM, whereas with **[Esc]**, you are only logged out of the OSD screen.

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

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

8. Firmware Upgrade Utility

8.1 Before You Begin

To prepare for the firmware upgrade, do the following:

1. From a computer that is not part of your KVM installation go to www.tripplite.com/support and choose the model name that relates to your device to get a list of available Firmware Upgrade Packages.

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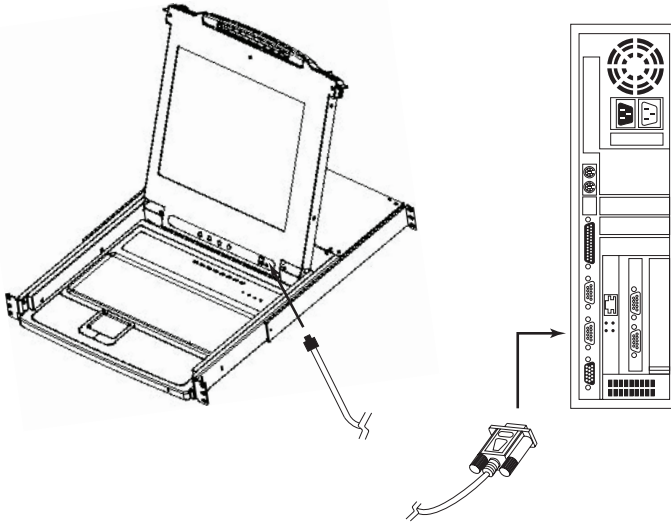

3. Use the Firmware Upgrade Cable (provided with this unit), to connect a COM port on your computer to the Firmware Upgrade Port of your switch.

   Note: On a daisy chained installation, the chained stations will automatically receive the upgrade via the daisy chain cables.

4. Shut down all of the computers - but not the daisy-chained KVM Stations - on your KVM installation.

5. From your KVM switch console, bring up the OSD (see pages 14-20) and select the **F4 ADM** function.

6. Scroll down to **FIRMWARE UPGRADE**. Press **[Enter]**, then press **[Y]** to invoke Firmware Upgrade Mode. For your reference, the current firmware upgrade version displays on the screen.

9/9/2014   11:25:43 AM

8. Firmware Upgrade Utility

8.2 Starting the Upgrade

To upgrade your firmware:

1. Run the downloaded Firmware Upgrade Utility by double-clicking the file icon or by opening a command line and entering the full path to it. The Firmware Upgrade Utility *Welcome* screen appears.

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

3. Click **[Next]** to continue. The Firmware Upgrade Utility main screen appears:
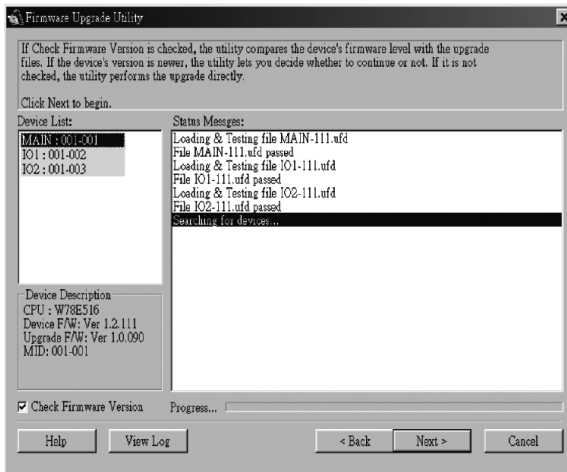
The Utility inspects your installation. All the devices capable of being upgraded by the package are listed in the *Device List* panel.

4. As you select devices, a detailed description of each appears in the *Device Description* panel.

5. After you have made your selection(s), click **[Next]** to perform the upgrade. If you enabled *Check Firmware Version*, the Utility compares the device's firmware levels with that of the upgrade files. If it finds that the device's version is higher than the upgrade version, it brings up a dialog box informing you of the situation and gives you the option to Continue or Cancel.

If the *Check Firmware Version* is not enabled, the Utility installs the upgrade files without checking whether they are a higher level version.
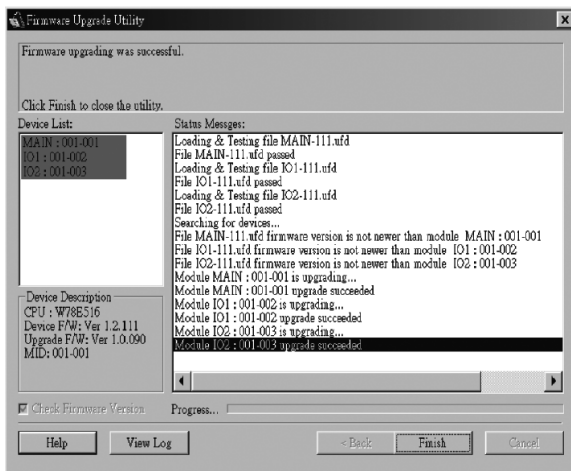
As the Upgrade proceeds, status messages appear in the Status Messages panel, and the progress toward completion is shown on the *Progress* bar.
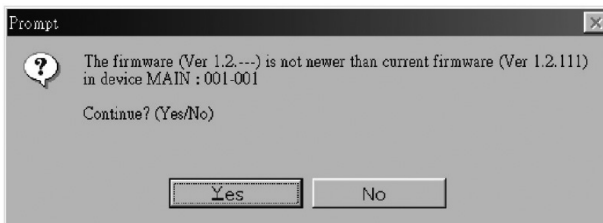
8.3 Upgrade Succeeded

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

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

8.4 Upgrade Failed

If the upgrade failed to complete successfully, a dialog box appears asking if you want to retry. Click **Yes** to retry. If you click **No**, the *Upgrade Failed* screen appears:
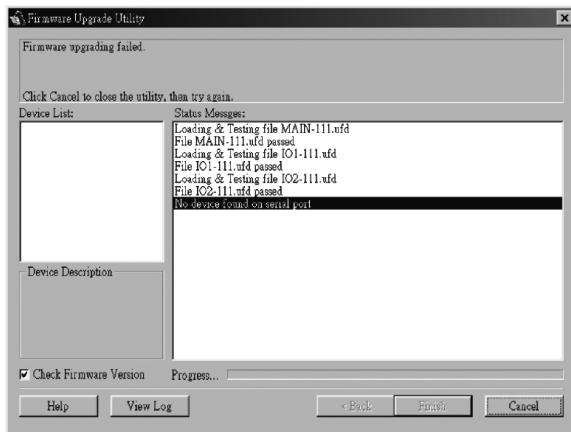
Click **Cancel** to close the Firmware Upgrade Utility. See the next section, *Firmware Upgrade Recovery*, for how to proceed.

8. Firmware Upgrade Utility

8.5 Firmware Upgrade Recovery

A firmware upgrade recovery is required in any of the following situations:

• When you invoke Firmware Upgrade Mode (see page 21), but decide not to proceed with the upgrade.

• When the main board firmware upgrade fails.

• When the I/O firmware upgrade fails.

To perform a firmware upgrade recovery, power off and restart the switch according to the instructions below:

1. Shut down all the computers that are attached to the switch.

   Note: Unplug the power cord of any computer that has the Keyboard Power On function. Otherwise, the KVM will still receive power from this computer.

2. Wait 10 seconds, then plug the KVM switch back in.

   Note: If you have shut down more than one Station, power up the highest Station first and work your way down to the lowest one.

3. Once the switch is up, restart the Firmware upgrade procedure.

   Note: If one of the slave units fails to upgrade successfully, unchain it from the installation and perform the recovery and upgrade operation independently. After it has been successfully upgraded, plug it back into the chain.

9. Appendix A

9.1 Troubleshooting

Symptom	Possible Cause	Action
Erratic behavior.	Unit not receiving enough power.	Check that the Power Adapter supplied with the unit is plugged in and functioning properly.
All Station IDs display as 01.	Station 1 has lost power.	Wait a few seconds for the system to reinitialize the station sequence and display the proper IDs

9.2 Specifications

Function	B020-008-17	B020-016-17
Max # of Direct CPU Connections	8	16
Max # of CPUs via Daisy-Chain	504	512
Port Selection	Push-Buttons, OSD, Hotkeys	
Online LEDs	8 (Orange)	16 (Orange)
Selected LEDs	8 (Green)	16 (Green)
Power LED	Blue	
Station ID	N/A	
Console Connectors*	HD15 F (Monitor), PS/2 F (Mouse), PS/2 F (Keyboard)	
CPU Ports	(8) HD15 F	(16) HD15 F
Required Cable Kits (Sold Separately)	P774-Series (PS/2), P776-Series (USB)	
Firmware Upgrade Port	(1) RJ11 F	
Daisy-Chain Ports	(1) DB25 M	
Switches	Firmware Upgrade Normal/Recovery Switch	
AutoScan Interval	User-definable via OSD (1-255secs.)	
Keyboard and Mouse Emulation	PS/2	
Video	1280 x 1024, DDC2 B	1280 x 1024, DDC2 B
Power	100-240V, 50/60Hz, 1A	100-240V, 50/60Hz, 1A
Operating Temperature	32° to 120° F	
Storage Temperature	-4° to 140° F	
Humidity	0% to 80% RH	
Housing	Metal	
Weight	30lbs	30lbs
Dimensions (H x W x D) in inches	1.75 x 17 x 24	1.75 x 17 x 24

*Console KVM Switches have optional external console ports

9. Appendix A

9.3 OSD Factory Default Settings

The factory default settings are as follows:

Setting	Default
OSD Hotkey	[**Scroll Lock**] [**Scroll Lock**]*
Port ID Display Position	Upper Left Corner
Port ID Display Duration	3 Seconds
Port ID Display Mode	The Port Number plus the Port Name
Scan Duration	5 Seconds
Scan/Skip Mode	All
Screen Blanker	0 (Disabled)
Logout Timeout	0 (Disabled)
Accessible Ports	F (Full) for all users on all ports
Beeper	Y (Activated)

* Use of the [**Scroll Lock**] key requires the [**Fn**] key to be held down.

10. Appendix B

10.1 FCC Notice, Class A

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.

11. Warranty

1-YEAR LIMITED WARRANTY

Tripp Lite warrants its products to be free from defects in materials and workmanship for a period of one (1) year 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, expressed 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.

12. Product Registration

Visit www.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.

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

The policy of Tripp Lite is one of continuous improvement. Specifications are subject to change without notice.

14-08-026 • 93-3077_revB

14-08-026-933077.indd   28   9/9/2014   11:25:46 AM