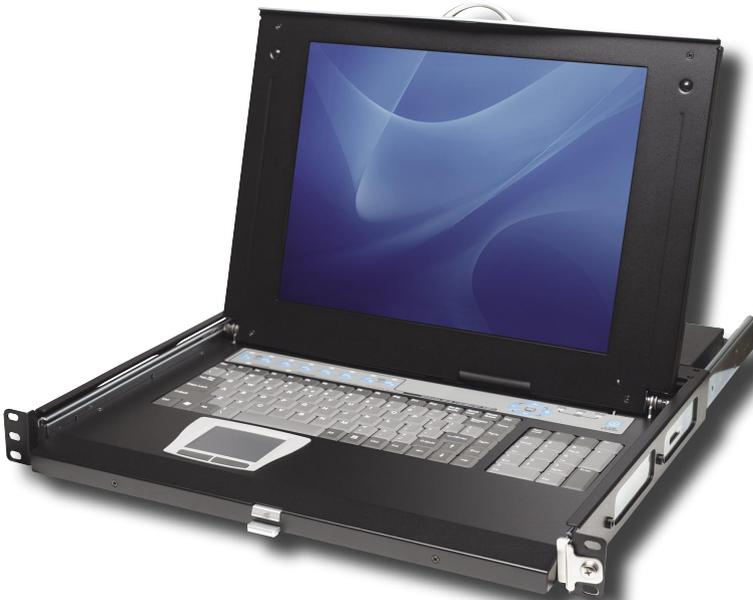


# RACKMOUNT CONSOLE KVM SWITCH USER MANUAL

MODELS 521796, 521871,  
523561 & 523578



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# 1. INTRODUCTION

Thank you for purchasing the INTELLINET NETWORK SOLUTIONS™ Rackmount Console KVM Switch, Model 521796 (15" LCD, 8-port); Model 521871 (15" LCD, 16-port); Model 523561 (17" LCD, 8-port); or Model 523578 (19" LCD, 8-port).

With a keyboard mouse, LCD panel and KVM switch module housed in an industry-standard 19" 1U- or 2U-height rack drawer, the console saves you as much as a third of the space needed for a rack cabinet. And when the console is cascaded with other INTELLINET NETWORK SOLUTIONS KVM switch modules to increase server management capacity, you save even more space.

Flip-open 15," 17" or 19" LCD panels support VGA resolution up to 1280 x 1024 without any degradation. The advanced VGA circuit design guarantees smooth and flicker-free switching from one computer to another with cable lengths up to 100 ft. / 30 m (tested with high-quality UL2919-rated, low-loss and shielded cables).

With the on-screen display (OSD) menu, you can name your computers, switch to a computer from a list, easily configure settings and view the name of the selected computer on-screen with a programmable time interval. Plus, the OSD menu shows the system status throughout operation.

All KVM switch modules come with a universal CEN36 connector for connection between the console drawer and a KVM switch module. This modularized design offers maximum flexibility, as you can choose and swap the modules to fit your needs. A KVM switch module can also be used as an independent KVM switch.

This user manual shows you how to set up and operate the KVM switch. (For instructions on assembling and positioning the console drawer and the switch in a rack, refer to the separate Rackmount Console KVM Switch quick installation guide.) Follow the instructions in this user manual and you'll soon be enjoying these additional popular features:

- Integrated LCD console, keyboard, mouse and KVM switch module for sturdy rack-mount installation with tilt-free, two-piece rear bracket and extension kit
- Manage/control 8 or 16 computers from one keyboard, monitor and mouse
- Standard 19" 1U or 2U rack drawer
- Fits rack cabinets with depth from 67.5 to 80.5 cm (26 5/8 to 31 5/8 in.)
- Locking mechanism locks the drawer when pulled out, pushed in or folded down
- Full 105-key, low-profile, sturdy keyboard
- Ergonomic handrest design
- Auto-scan automatically selects computers sequentially
- Supports Microsoft IntelliMouse (Pro)
- Supports both PS/2 and serial mice
- 3-in-1 space-saving cables
- Programmable scan filters unused computers
- Store system settings and name entries to non-volatile memory

- Password security protects computers from unauthorized use
- Hotkey functions allow easy computer access
- Keyboard states automatically saved and restored when switching computers
- Operating system independent, transparent to all applications
- Plug and Play system configuration
- Keyboard and mouse can be hot plugged at any time
- DDC2B compatible
- Includes 6 ft. (1.8 m) PS/2 connection cable (plus 6 ft. [1.8 m] USB connection cable for Models 523561 and 523578)
- Lifetime Warranty

Use the chart below for cross-referencing the different INTELLINET NETWORK SOLUTIONS Rackmount Console KVM Switch models with their various manufacturer part/reference numbers and specifications.

Model No.	Console/ Drawer Part No.	KVM Module Part No.	Rear Brkt. & Ext. Kit Part No.	Console Size	KVM Port Type	KVM Ports	Ht.	Package Contents
521796	Transa PRO 15	IMM108D	REK7	15"	PS/2	8	1U	<ul style="list-style-type: none"> <li>• Console</li> <li>• Rear brkt. &amp; ext. kit</li> <li>• KVM Switch Module</li> <li>• Power supply</li> <li>• 6' PS/2 cable</li> </ul>
521871	Transa PRO 15	IKM116D	REK7	15"	PS/2	16	2U	
523561	Transa PRO 17	IUM108D	REK7	17"	Combo (USB and/ or PS/2)	8	1U	<ul style="list-style-type: none"> <li>• Console</li> <li>• Rear brkt. &amp; ext. kit</li> <li>• KVM Switch Module</li> <li>• Power supply</li> <li>• 6' PS/2 cable</li> <li>• 6' USB cable</li> </ul>
523578	Transa PRO 19	IUM108D	REK7	19"	Combo (USB and/ or PS/2)	8	1U	

## Overview

The combination of console and KVM switch module offers the latest and the most efficient way of controlling server rooms and multiple computers. With models of KVM switch modules available to control from eight to 136 servers at the console — or at another set of consoles up to 100 ft. away — it's the ultimate tool for server management.

The variety of models of KVM switch modules available — including the four INTELLINET NETWORK SOLUTIONS models addressed in this user manual — present different computer interface options, which are listed below and shown in the images that follow.

- Standard models feature three connectors: for PS/2 keyboard, PS/2 mouse and monitor (HDB15).
- Hybrid (PS/2 + USB) models feature connectors for PS/2 keyboard, PS/2 mouse, USB (keyboard + mouse) and monitor (HDB15).
- Slim PS/2 models feature special 3-in-1 connectors for PS/2 keyboard, mouse and monitor (HDB15).

# 1U module

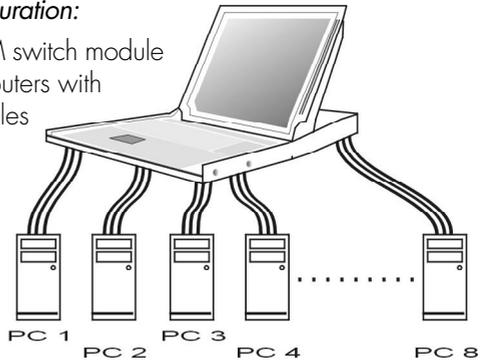
<b>Standard</b> PS/2	<b>IKM001</b>	1 ▶ 1	
	<b>IKM108D</b>	1 ▶ 8	
	<b>IKM116D</b>	1 ▶ 16	
	<b>IKM2108D</b>	2 ▶ 8	
	<b>IKM2116D</b>	2 ▶ 16	
<b>Hybrid</b> USB+PS/2	<b>IGM108D</b>	1 ▶ 8 for USB+PS/2	
	<b>IGM116D</b>	1 ▶ 16 for USB+PS/2	
<b>Slim</b> PS/2	<b>IMM104D</b>	1 ▶ 4	 blue-gray
	<b>IMM108D</b>	1 ▶ 8	 blue-gray
	<b>IMM116D</b>	1 ▶ 16	 blue-gray
<b>Slim</b> USB+PS/2	<b>IUM104D</b>	1 ▶ 4	 gray
	<b>IUM108D</b>	1 ▶ 8	 gray
	<b>IUM116D</b>	1 ▶ 16	 gray

# Configurations

KVM switch modules are available with four, eight (Models 521796, 523561 and 523578) and 16 ports (Model 521871) with various interfaces. In applications that require a larger number of computers, the KVM switch modules can be cascaded in a master/slave configuration. **NOTE:** Throughout this user manual, "master" refers to the KVM switch module that connects directly to the console drawer; "slave" refers to a KVM switch module that has its console port connected to a master's "PC-x" port. Slaves only exist in cascade configuration.

## Single KVM Switch Module Configuration:

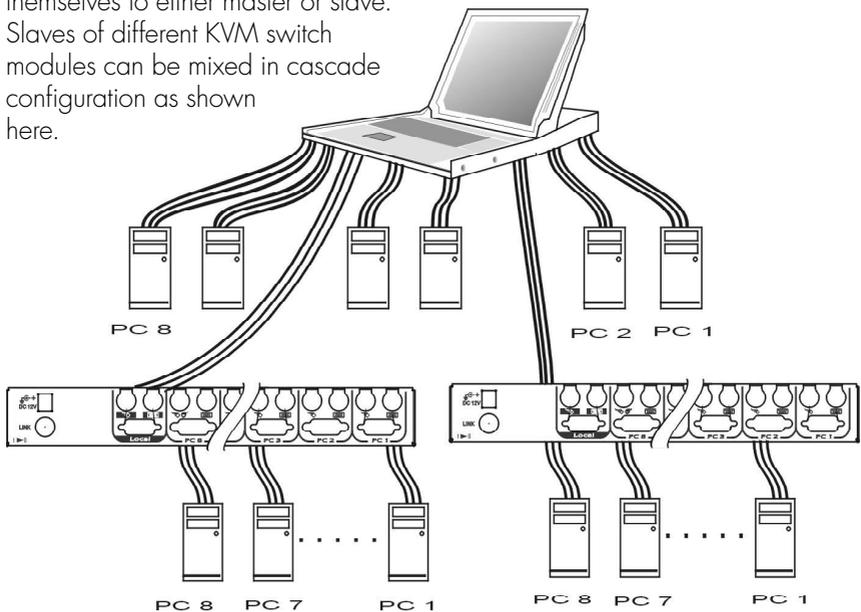
Combined with a console, the KVM switch module can be connected to multiple computers with keyboard, mouse and monitor cables as shown at right.



## KVM Switch Module in Cascade (Master/Slave) Configuration:

You can connect a second level of one or more KVM switches to a master unit.

Cascade configuration expands system ability, allowing you to select computers connected to the master or slaves. There is only one master that connects to the console directly operated by a user. Once connected, the KVM switch modules automatically configure themselves to either master or slave. Slaves of different KVM switch modules can be mixed in cascade configuration as shown here.

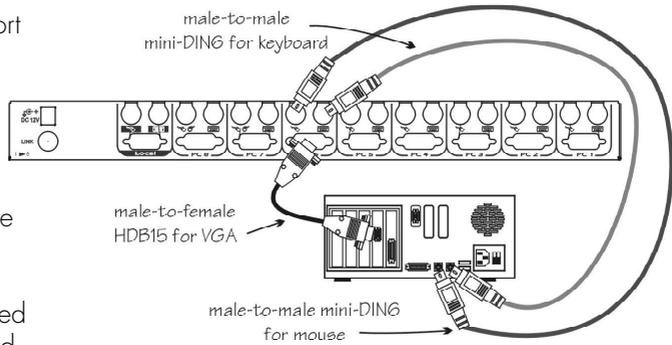


# 2. INSTALLATION

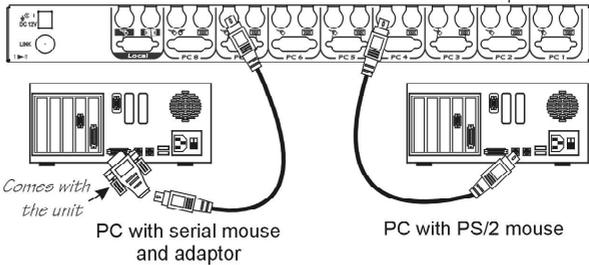
## Device Connection

### Standard Models (Model 521871):

Determine the port number of each computer. For computers using a PS/2 mouse, connect the computer's mouse and keyboard cables to the connectors marked with a mouse and keyboard, respectively, as shown. Repeat this step for PC-1 through PC-8.



For computers using a serial mouse, connect the DB9-to-mini-DIN6 adapter (included with the switch) to the computer mouse port, then use PS/2 cables to connect the mouse to the KVM switch module.

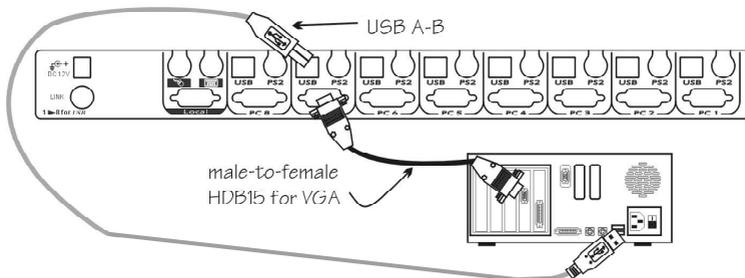


Connect the computer's monitor cable to the HD-DB-15 VGA connector.

**NOTE:** This function is only available for PC-7 and PC-8 marked with two mice.

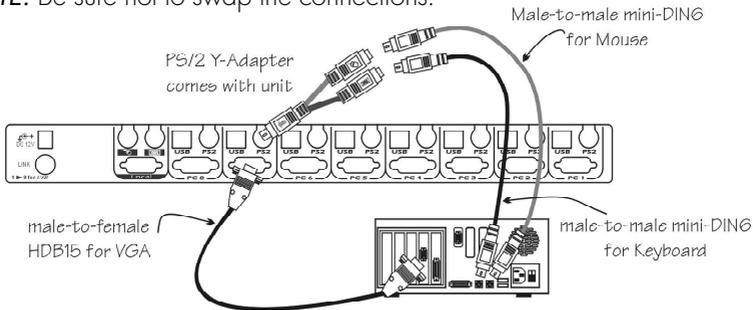
### Hybrid (PS/2 + USB) Models:

With a hybrid, you can connect to a computer using either a PS/2 or USB port. To a USB computer: Use a USB A-B cable to connect from one of the PC ports to the USB port of a computer (A connector, flat connector), as shown below. The computer can be a USB-ready PC, Sun, HP server or Mac.

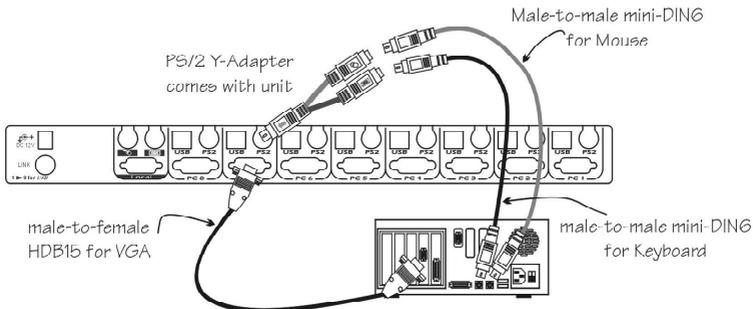


To a PS/2 computer: Connect a PS/2 "Y" adapter, which comes with the unit, to the PS/2 port on the PC side, then use two mini-DIN6 male-to-male cables for the keyboard and mouse, as shown below. There are two mini-DIN6 female connectors on the PS/2 "Y" adapter marked for the keyboard and mouse.

**NOTE:** Be sure not to swap the connections.



To a laptop computer: In most cases, all you need is one PS/2 male-to-male cable connecting the KVM switch module and your laptop, as shown below; the "Y" adapter is not necessary. However, as some laptop computers do not follow the industry standard, check your laptop's user manual for details.



### **Slim Models (Models 521796, 523561 and 523578):**

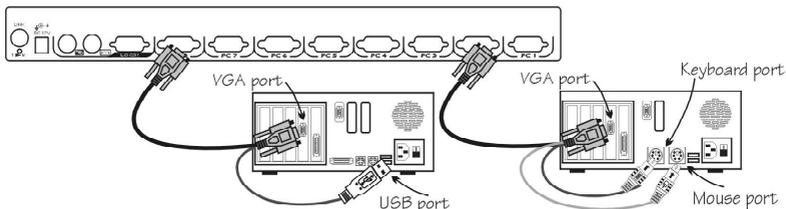
Use only the cables shown at right. Connection from a slim KVM module to a PS/2 computer or a USB computer is shown below.



For PS/2 computers connected to IMM and IUM models (Models 521796, 523561, 523578).

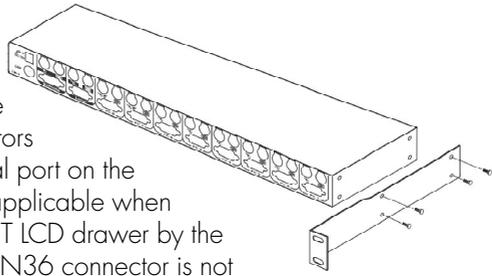


For USB computers connected to IUM models (Models 523561, 523578).



## A Module as a Slave or a Stand-Alone KVM Switch

A slave KVM switch module can be mounted to the inside of the rear uprights of a rack cabinet using the rear brackets (which come with all units except IKM001), with computer connectors facing to the rear, as well. **NOTE:** The connectors (keyboard and mouse) at the local port on the rear of the KVM module are not applicable when the module is connected to the TFT LCD drawer by the CEN36 connector. When the CEN36 connector is not connected to the TFT LCD drawer, the KVM switch module acts as a rear-mount stand-alone KVM switch module. The VGA ports (local and remote) can be connected to external VGA monitors at any time.



## Initial Power-Up

Make sure all computers and KVM switch modules are powered down during installation. You must power up the master before turning on any other devices.

For a single KVM switch module:

1. Connect a power adapter (output power = 12 V DC) to the master.
2. Turn on the computers.

For cascaded KVM switch modules:

1. Connect a power adapter (O/P = 12 V DC) to the master.
2. Connect power adapters (O/P = 9 – 12V DC) to all slaves.
3. Turn on the computers.

**NOTE:** After the initial power-up, you can hot-plug additional powered-down computers or a slave KVM switch module without turning off already-connected computers.

# 3. OPERATION

## Push Buttons

A computer can be selected by pressing the push button directly, by issuing hotkey commands or by activating the OSD (on-screen display) window. The indicator changes to reflect the computer port selected (red). The indicator flashes red when it is in either Auto Scan or Manual Scan mode.

**NOTE:** For 16-port modules (Model 521871), "1" – "8" are for the lower row of eight ports and "A" – "H" are for the higher/upper row of eight ports. Port 1 and Port A share the same button: If Port 1 is already selected, tap its button to select

Port A. If Port 1 is not selected, press and hold the “1” button on the console panel for two seconds to select Port A. The OSD menu and hotkeys are also available for computer selection.

### K/M Reset:

K/M Reset solves most problems developed by the keyboard, the mouse, device replacement or a change of configuration. Press both the front-panel “1” and “2” buttons for two seconds to re-configure the whole system without turning off either the switch module or any computer.

### Auto Scan:

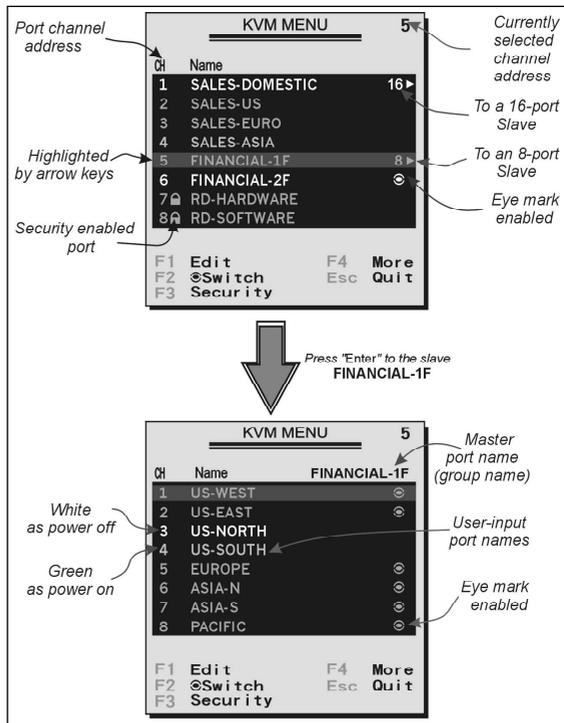
The KVM switch module has an easy-to-use feature to start auto-scanning. Press both the front-panel “7” and “8” buttons for two seconds to start Auto Scan. (For 4-port models, press “3” and “4” instead.)

## On-Screen Display (OSD) Operation

By hitting the left Control key twice within two seconds, you’ll see the hotkey menu if it is enabled (an OSD option). Or, by hitting the left Control key three times within two seconds, you’ll see a KVM menu showing a list of the computers with corresponding port numbers, names and status.

The port number of the selected computer is displayed in red (as on the console panel) at the right corner of the OSD menu.

A device name is green if it has power and is ready for operation. It’s white if it has no power. The OSD menu updates the color when it is activated.



Press the Page Up or Page Down keys to view another eight computers.

Use the up/down arrow keys, “1” – “8” or “A” – “H” to highlight a computer, and the Enter key to select it. Or, press the Escape (ESC) key to exit the OSD and remove the OSD menu from the display; the status window returns to the display

and indicates the currently selected computer or operating status.

A triangle mark (▶) to the right of a name indicates the port is cascaded to a slave. The number to the left of the triangle mark shows the number of ports the slave has; e.g., 8▶ for an 8-port switch. The Enter key brings you one level down, and another screen pops up listing the names of the computers on that slave. The name of the slave will be shown at the upper-right corner of the OSD menu. It is useful to group computers and still be able to see the group name.

An eye icon (👁) to the right of a name indicates the computer is selected to be monitored in Scan mode. On the OSD, this icon can be switched on or off by using the F2 function key.

Press the ESC key to exit the OSD and return to the selected computer; the computer name is also shown on the screen.

### **Function Keys:**

Function keys are used to access/activate a number of popular features.

F1 is used to edit the name (up to 14 characters) entered for a computer or a slave. First, highlight a port, then press F1 followed by a name entry. Valid characters are "A" – "Z," "0" – "9" and the hyphen (dash) character. (Lowercase letters are converted to uppercase.) Press the Delete (Backspace) key to delete one character at a time. Non-volatile memory stores all name entries until you change them, even if the unit is powered down.

F2 is used to switch the 👁 of a computer on or off. First, use the up/down arrow keys to highlight the computer, then press F2 to switch its eye icon on or off. If Scan Type is "Ready PC +👁," only the active and 👁-selected computers will be displayed sequentially in Scan mode.

F3 is used to lock a computer to prevent unauthorized access. To lock a device, highlight it, then press F3. Next, enter up to four characters (as defined above) followed by Enter as new password. A security-enabled device is marked with a lock (🔒) following its port number. To permanently disable the security function from a locked device, highlight it, press F3, then enter the password.

To temporarily access a locked device, highlight it and press Enter. The OSD will prompt you for the password. After entering the correct password, you are allowed access to the device. The device is automatically re-locked once you switch to another port. During Scan mode, the OSD skips password-protected devices.

F4 is used to display a pop-up screen presenting additional function options, most of which are marked with a ▶ indicating there are even more options available. Using the up/down arrow keys, select the functions and press Enter. Available options will be shown in the middle of the screen, and can be selected using the same procedure. Press the Escape key to exit at any time.

- *Auto Scan:* In this mode, the KVM switch module automatically switches from one active computer to the next (sequentially) at a fixed interval. During Auto

Scan, the OSD displays the name of the selected computer. When Auto Scan detects any keyboard or mouse activity, it suspends the scanning until the activity stops, then resumes with the next computer in sequence. To abort Auto Scan, press the left Control key twice, or press any front-panel button. Scan Type and Scan Rate set the scan pattern. Scan Type (F4:More\Scan Type) determines if scanned computers must also be -selected. Scan Rate (F4:More\Scan Rate) sets the display interval when a computer is selected before selecting the next one.

- *Manual Scan:* This mode lets you scan through active (powered-on) computers one by one using keyboard control. Scan Type (F4:More\Scan Type) determines if scanned computers must also be -selected. Press the up arrow key to select the previous computer; press the down arrow key to select the next computer. Press any other key to abort the Manual Scan mode.
- *Audio Stick:* An optional multimedia module can be linked to the back of each KVM switch module for selecting microphone and stereo speaker signals. There are two options for Audio Stick: "On" and "Off." When set to "On," audio selection follows computer selection. When set to "Off," audio selection stops following computer selection. It is useful if you want to listen to a particular computer's audio signal while operating other computers. The non-volatile memory stores the Audio Stick setting.
- *Scan Type:* This presents three further options.  
"Ready PC + " lets you scan through active and -selected computers in Scan mode.  
"Ready PC" lets you scan through active computers in Scan mode.  
" Only" lets you scan (in Scan mode) through any -selected computer regardless of computer power status.  
The non-volatile memory stores the Scan Type setting.
- *Scan Rate:* This sets the duration of a computer displayed in Auto Scan mode. The options range from three to eight seconds. The non-volatile memory stores the Scan Rate setting.
- *Keyboard Speed:* This offers a keyboard typematic setting that overrides the similar settings in BIOS and Windows. Available speed options are "Low," "Middle," "Fast" and "Faster" (10, 15, 20 and 30 characters/second, respectively). The non-volatile memory stores the Keyboard Speed setting.
- *Hotkey Menu:* When you hit the left Control key twice within two seconds, the hotkey menu appears, displaying a list of hotkey commands if the option is on. The hotkey menu can be turned off if you prefer not to see it when the left Control key is hit twice. The non-volatile memory stores the Hotkey Menu setting.
- *CH Display:* This presents two further options.  
"Auto Off" means that, after you select a computer, the port number and the name of the computer will appear on the screen for three seconds, then disappear automatically.

“Always On” means that the port number and the name of a selected computer and/or OSD status is displayed on the screen all the time.

The non-volatile memory stores the CH Display setting.

- *Position*: The position of the selected computer name and/or OSD status is displayed on screen during the operation. The choices are “Upper Left,” “Upper Right,” “Lower Left,” “Lower Right” and “Middle.” The exact display position varies with different VGA resolutions: The higher the resolution, the higher the display position. The non-volatile memory stores the Position setting.
- *Country Code for Sun* (for Slim USB + PS/2 and Hybrid USB + PS/2 models only: Models 523561 and 523578): Sun keyboards of different languages have different layouts. The Rackmount Console KVM Switch is able to emulate a Sun keyboard for a specific language type or country; e.g., Arabic, Belgian, U.S. Select the proper country code that matches all of your Sun computers.
- *Max. Resolution* (for Slim USB + PS/2 and Hybrid USB + PS/2 models only: Models 523561 and 523578): You can adjust the monitor resolution under this sub-menu. Options are “1024 x 768,” “1280 x 1024,” “1600 x 1200,” “1920 x 1440” and “DDC2B Disable.”

F5 (for Slim USB + PS/2 and Hybrid USB + PS/2 models only: Models 523561 and 523578): This is to switch the Sun mark of a port on or off, indicating the computer is a Sun server. Sun servers have more keys on the keyboard than a PC. When a Sun-marked port is selected, the KVM switch starts to translate the keys from a PS/2 keyboard to a Sun keyboard. See Sun Keyboard Mapping (Section 6) for details.



Sun mark selected

Sun computer selection

ESC, or the Escape key, is pressed to exit the OSD.

## Hotkey Commands

Hotkey commands are a short keyboard sequence to select a computer, to activate a computer scan and so forth. The KVM switch module interprets keystrokes for hotkeys all the time. A hotkey sequence starts by pressing the left Control key twice followed by one or two keystrokes. A built-in buzzer generates a high-pitch beep for a correct hotkey command and one low-pitch beep for an error. A bad key sequence will not forward a command to the selected computer. **NOTE:** When entering numbers, do not use the numeric keypad on the right side of the keyboard.

The short-form hotkey command menu can be set as an OSD function (F4:more\ Hotkey Menu) to appear every time the left Control key is pressed twice.

To select a computer by hotkey command, you need to know its port number, which is determined by the KVM switch module connection. For a computer connected to a master, its port is represented by the PC port label (1 – 8 or A – H). For a computer connected to a slave, two characters represent its port. The first character is the port number of the master unit (1 – 8); the second is the port number of the slave (1 – 8 or A – H). Note that only a master's PC-1 through PC-8 ports can be connected to a slave.

For example, pressing (left) Control/Control/7 selects a computer connected to Port 7 of the master. Pressing (left) Control/Control/6/C selects a computer connected to Port C of a slave connected to Port 6 of the master.

To start Auto Scan, which automatically scans active (powered-on) computers one by one at a fixed interval, press (left) Control/Control/F1. When Auto Scan detects any keyboard or mouse activity, it suspends scanning until the activity stops, then resumes with the next computer in the sequence. The length of the Auto Scan interval (Scan Rate) is adjustable (as explained below). To abort Auto Scan, press the left Control key twice. **NOTE:** Scan Type determines whether -marked computers are to be displayed during Auto Scan.

Manual Scan — (left) Control/Control/F2 — enables you to manually switch between active computers. Press the up/down arrows to select the previous or the next computer in sequence; press any other key to abort Manual Scan.

To adjust Scan Rate — (left) Control/Control/F3 — set the duration before switching to the next computer in Auto Scan. The KVM switch module sounds one to four beeps to indicate the scan interval: 3, 8, 15 or 30 seconds.

To adjust the keyboard typematic rate (characters/second), press (left) Control/Control/F4. This setting overrides that of BIOS and other operating systems. The KVM switch module generates one to four beeps corresponding to 10, 15, 20 and 30 characters/second, respectively.

Audio Stick — (left) Control/Control/F5 — is an optional multimedia module that can be linked to the back of each KVM switch module for selecting microphone and stereo speaker signals. There are two options for Audio Stick: "On" and "Off." When set to "On," audio selection follows computer selection. When set to "Off," audio selection stops following computer selection. It's useful if you want to listen to a particular computer's audio signal while operating other computers. The KVM switch module generates one (on) or two (off) beeps.

## 4. CASCADE CONFIGURATION

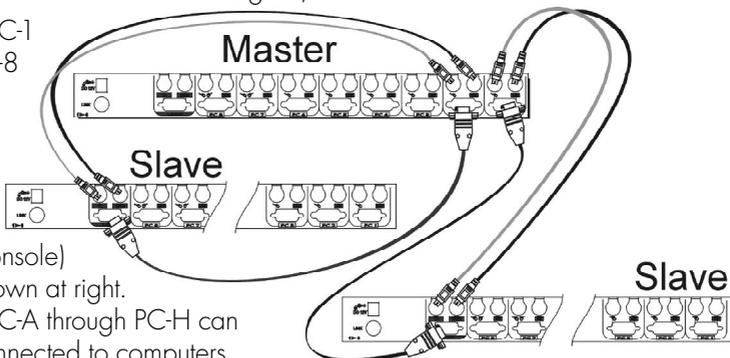
### Connection

Before connecting a device (a computer or a slave KVM switch module) to the master KVM switch module under power, you must turn off the device.

**NOTE:** The master must have at least as many PC-x ports as the slave; e.g., if an IKM108D is the master, another IKM108D can be a slave, but not an IKM116D (see the reference on Page 5).

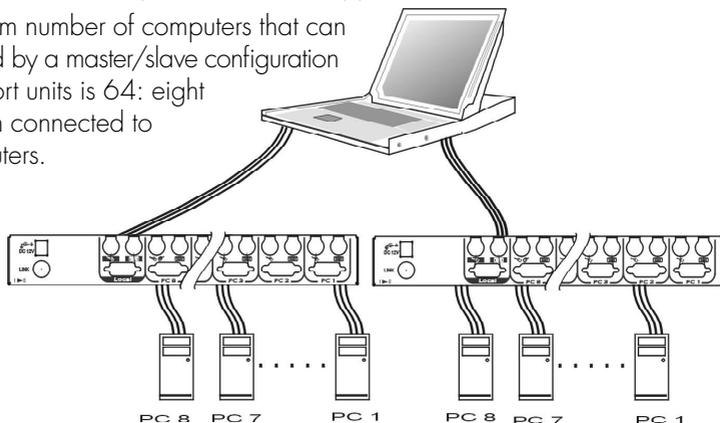
The ports PC-1 through PC-8 can be connected to either a computer or a slave's local (or console) port

port, as shown at right. The ports PC-A through PC-H can only be connected to computers.



**NOTE:** Only a master's PS/2 PC ports (not USB ports) can be connected to a slave's local (or console) port for cascade application.

The maximum number of computers that can be controlled by a master/slave configuration with all 8-port units is 64: eight slaves, each connected to eight computers.



### OSD Menu:

After the cascade connections are complete, you should re-activate the OSD menu to check if the master recognizes the slaves. A triangle mark (▶) is placed to the right of the channel name, indicating the port is connected to a slave and not a computer. A number to the left of the ▶ represents the slave model; e.g., "8▶" for an 8-port switch module.

## Change Configuration while Running

A device (a computer or a KVM switch module) at any PC-x port can be changed at any time after initial power-up. If you change any of the PC-1 to PC-8 ports' connections from a computer to a slave or vice versa, or replace the devices of a port, the OSD will update this change the next time it is activated. **NOTE:** Any new device must be turned off before it is connected to the master.

# 5. MULTI-ACCESS MODEL

A multi-access console KVM switch (IKM2108D, IKM2116D) features a pair of console ports, facilitating access to multiple computers from both a local and a remote location. An example of the practicality of this feature is the ability to access all computers in a configuration from inside a server room when you need to physically access the computers — as when performing a software upgrade — while being able to manage the computers outside the server room for daily use. **NOTE:** The four Rackmount Console KVM Switches covered by this user manual (INTELLINET NETWORK SOLUTIONS Models 521796, 521871, 523561 and 523578) are not multi-access models.

## Connection

### *Connected to a TFT LCD Drawer:*

The remote console is available for a second set of keyboard, mouse and monitor.

### *Stand-Alone:*

Both the remote and the local consoles are available for a keyboard, mouse and monitor connection.

## Operation

At power-up, the multi-access KVM switch module is in idle mode, broadcasting a VGA signal and detecting for keyboard and mouse activity. User LEDs (A and B) are both red, indicating the KVM switch module is not in use. When keyboard or mouse activity is detected at one console (remote or local), the KVM switch module immediately blocks the other console from accessing the computer. Only one LED (remote or local), at the left side of the panel, remains lit, indicating the KVM switch module is under user operation.

In the meantime, keyboard LEDs (Num/Caps/Scroll Lock) of the other console start to flash as its access is denied and the monitor is blocked from a VGA signal for security reasons. After the user has finished his operation for a period of time (i.e., User Timeout), the multi-access KVM switch module returns to idle mode. User Timeout has four options: "5 sec," "30 sec," "60 sec" and "HOLD." Select "HOLD" when you plan to access the KVM switch module for a long time. Pressing Scroll Lock twice forces the KVM switch module to return to idle mode immediately.

User Timeout is available in the OSD menu by pressing function key F4 under the sub-menu More. **NOTE:** The Keyboard Speed option is not available for multi-access models.

# 6. SUN/MAC KEYBOARD MAPPING

IGM108D and IGM116D models emulate a Sun keyboard and mouse when a computer is marked with a Sun in the OSD menu by function key F5. A Sun keyboard has more keys than a standard PS/2 keyboard. These extra keys are simulated by pressing the right Control key followed by one of the function keys on the PS/2 keyboard. For example, press the right Control key, then press function key F7 to activate Open for a Sun computer.

From PS/2 keyboard	Map to Sun keyboard	Map to Mac keyboard
right Control 1		
right Control 2		
right Control 3		
right Control 4	<small>(note)</small>	power
right Control F1	Stop	
right Control F2	Again	
right Control F3	Props	
right Control F4	Undo	
right Control F5	Front	
right Control F6	Copy	
right Control F7	Open	
right Control F8	Paste	
right Control F9	Find	
right Control F10	Cut	
Print Screen		F13
Scroll Lock		F14
Pause Break		F15
right Control H	Help	
right	right	right
left	left	left
	Compose	
right Alt	Alt Graph	right Option
left Alt	Alt	left Option

**NOTE:** For Sun, the switch module does not support the Low Power option under Power Off Select after the command (right) Control 4.

# 7. TROUBLESHOOTING

Before troubleshooting any problem, ensure that all cables are properly connected and well seated. Check that keyboard and mouse cables are not swapped. Label and bundle the cables for each computer to avoid confusion when they're connected to the KVM switch module.

<u>Problem</u>	<u>Possible Cause</u>	<u>Remedial Actions</u>
Nothing works.	Bad connection at the CEN36 connectors.	Push the assembled drawer and the KVM module box firmly together, leaving only 8 mm (5/16") space in between. Be sure they're secured by two screws.
VGA monitor works fine, but the keyboard and touchpad don't work.	Another keyboard or mouse is connected to the rear of the KVM module (marked "Local") when the CEN36 connector is connected to the KVM drawer.  The connection inside the KVM drawer has come loose due to vibration.	If the CEN36 connector on the KVM module connects to a KVM drawer, its local console should not connect to any keyboard or mouse.  Verify the KVM drawer is bad by disconnecting it from the KVM module (the CEN36 connector is not connected). Connect a keyboard, mouse and monitor to the "Local" port on the KVM module and connect another computer to any of the PC ports, and use the KVM module as a stand-alone KVM switch.
No screen image, or no OSD menu.	A computer is on but not selected.  The external power supply is not connected; there is no power to the KVM switch module.	Turn on a computer and select it by the front push buttons.  Power up the system via the external power supply. Select a computer with a front push button. A red rectangle, part of the OSD function, should pop up displaying the port number as the system is properly powered.  Connect a VGA monitor to the "Local" port at the rear and check if the VGA signal presents.

<u>Problem</u>	<u>Possible Cause</u>	<u>Remedial Actions</u>
Unable to operate USB-ready Sun server.	Incorrect KVM module.	Use only the hybrid PS/2 + USB KVM module.  Bring up the OSD menu, move the light bar to the port, press F5 to set the Sun mark on.
Keyboard error on boot.	Loose keyboard connection.	Make sure the keyboard cables are well seated.
Alphabets on the TFT LCD display are blurred or have shadows.	Improper resolution settings.	Set the VGA resolution of the computers to 1024 x 768 with "Large Font" for the best performance.
Master/slave does not work.	Improper installation procedures.	Make sure slave's console is connected to the master's PC-1 – PC-8 port. Only PS/2 ports can be used for cascading.  Press and hold the "1" and "2" push buttons to initiate K/M reset.  Turn off any/all power to the slave (unplug all cables) before connecting it to the master.
Keyboard strokes are shifted.	The computer was in shifted state when last switched.	Press both Shift keys.
The up/down arrow keys don't work in Manual Scan.	All PCs are off, or only one PC is turned on. The Scan mode works for powered-on computers only.  Scan Type is  -selected, but no PC is  -selected in the OSD.	Turn the computers on.  Press any other key to abort the Manual Scan mode.  Set the proper Scan Type in the OSD and determine which PCs are  -selected.
The OSD menu is not in the proper position.	The resolution of the menu is fixed; its size varies as computer VGA resolution changes.	Use F4:More\Position to select "UL" (upper-left) or "UR" (upper-right). The OSD menu may appear near the middle of the screen when "LL" (lower-left) or "LR" (lower-right) is selected.

<u>Problem</u>	<u>Possible Cause</u>	<u>Remedial Actions</u>
Auto Scan doesn't switch PCs; plus, the KVM switch module beeps occasionally and the red indicator flashes.	<p>All PCs are off or only one PC is turned on. Scan mode works only for powered computers.</p> <p>Scan Type is -selected, but no powered PC is -selected in the OSD.</p>	<p>Turn on the computers.</p> <p>Set the proper Scan Type in the OSD and determine which PCs are -selected.</p> <p>Press the left Control key twice to abort Auto Scan.</p> <p>Press any front button to select a PC, and Auto Scan stops.</p>
Double OSD images in the cascade configuration.	Improper slave connection procedure.	<p>Press buttons "1" and "2" for two seconds to activate K/M reset.</p> <p>Turn off any/all power to the slave (unplug all cables) before connecting it to the master.</p>
Computer can't use serial mouse.	<p>Loose mouse adapter.</p> <p>Incorrect mouse adapter.</p> <p>Incorrect PC port connection.</p>	<p>Secure the mouse adapter to the computer's COM port.</p> <p>Use only the mouse adapter that comes with the unit.</p> <p>The mouse conversion is only effective at PC ports 7 and 8.</p>
Can't select a computer connected to a slave.	<p>Improper master unit connection.</p> <p>Improper slave unit connection.</p> <p>Too many levels of slaves.</p>	<p>Only master ports PC-1 – PC-8 can be connected to slaves.</p> <p>Connect the slave console port to PC-1 – PC-8 ports of the master.</p> <p>Only one level of slave units is allowed. Bring up the OSD again to check if the master recognizes the slave connection. Look for the  and the number before it.</p>
Occasionally, the KVM switch module fails to function.	The system is not getting enough power.	Make sure the external power supply is properly connected.

# 8. SPECIFICATIONS

Model 521796:

## Standards

- PS/2

## General

- PC connections: 8
- Console connections: 1
- PC port connectors:
  - Keyboard: 8 PS/2
  - Mouse: 8 PS/2, serial (includes adapters for two ports)
  - Monitor: HD15 male
- Console port connectors: keyboard, PS/2; mouse, PS/2; monitor, HD15 male
- Computer selection: via buttons, hotkeys and Windows switching software client
- Max. number of cascable PCs: 64 (when cascaded with models of same type)
- OSD: yes
- Automatic scan interval: 3, 8, 15, 30 seconds
- Programmable scan pattern
- Cable length max.: 30 m (100 ft.) at console; 30 m (100 ft.) at PC ports
- VGA bandwidth: 1920 x 1440, DDC2B
- LCD KVM drawer connector: CEN36
- Video resolution: max. 1024 x 768
- FCC Class B, CE, RoHS

## Power

- 12 V DC, 3 A (when connected to LCD drawer); 9 – 12 V DC, 500 mA (when not connected)
- Power consumption: max. 500 mA

## LCD Panel Specifications

- Active display area: 304.1 x 228.1 (mm)
- Pixel pitch (mm): 0.297 (H) x 0.297 (V)

- Resolution: 1024 x 768 @ 60/70/75 Hz
- Color pixel arrangement: RGB vertical strip
- Display mode: normally white
- Brightness (cd/m<sup>2</sup>): 250 (center)
- Contrast ratio: 350:1
- Display colors: 16.2M (RGB 6-bits + FRC data)
- User control: OSD control (auto-saving)
- Input signal: RGB analog, H/V separate
- Plug-n-Play VESA: VESA DDC 1/2B
- Power consumption (max): 33 W (normal operation/typical)
- Viewing angle (typical): -70 – 70(H); -60 – 60(V)
- Backlight unit: 2 CCFs edge-light (top/bottom)
- Power supply input voltage: full range, 100 – 240 V AC

## Environmental

- KVM module dimensions: 40 (H) x 404 (W) x 114 (D) mm (1.6 x 15.9 x 4.5 in.)
- Weight: 19.4 kg (42.7 lbs.)
- Operating temperature: 0 – 50°C (32 – 122°F)
- Operating humidity: 0 – 95%
- Storage temperature: -20 – 60°C (-4 – 140°F)
- Storage humidity: 95% RH

## Package contents

- Rackmount Console KVM Switch
- Rear bracket and extension kit
- Power adapter
- One 6 ft. (1.8 m) PS/2 3-in-1 cable
- Console quick installation guide
- KVM Switch Module user manual

## Additional cables required (sold separately)

- PS/2 3-in-1 KVM Cable, 6 ft. (1.8 m): 502535
- PS/2 3-in-1 KVM Cable, 10 ft. (3.0 m): 503303

Model 521871:

## Standards

- PS/2

## General

- PC connections: 16
- Console connections: 1
- PC port connectors:
  - Keyboard: 16 PS/2
  - Mouse: 16 PS/2, serial (includes adapters for two ports)
  - Monitor: HD15 male
- Console port connectors: keyboard, PS/2; mouse, PS/2; monitor, HD15 male

- Computer selection: via buttons, hotkeys and Windows switching software client
- Max. number of cascable PCs: 136 (when cascaded with models of same type)
- OSD: yes
- Automatic scan interval: 3, 8, 15, 30 seconds
- Programmable scan pattern
- Cable length max.: 30 m (100 ft.) at console; 30 m (100 ft.) at PC ports
- VGA bandwidth: 1920 x 1440, DDC2B
- LCD KVM drawer connector: CEN36
- Video resolution: max. 1024 x 768
- FCC Class B, CE, RoHS

## Power

- 12 V DC, 3 A (when connected to LCD drawer); 9 – 12 V DC, 500 mA (when not connected)
- Power consumption: max. 500 mA

## LCD Panel Specifications

- Active display area: 304.1 x 228.1 (mm)
- Pixel pitch (mm): 0.297 (H) x 0.297 (V)
- Resolution: 1024 x 768 @ 60/70/75 Hz
- Color pixel arrangement: RGB vertical strip
- Display mode: normally white
- Brightness (cd/m<sup>2</sup>): 250 (center)
- Contrast ratio: 350:1
- Display colors: 16.2M (RGB 6-bits + FRC data)
- User control: OSD control (auto-saving)
- Input signal: RGB analog, H/V separate
- Plug-n-Play VESA: VESA DDC 1/2B
- Power consumption (max): 33 W (normal operation/typical)
- Viewing angle (typical): -70 – 70(H); -60 – 60(V)
- Backlight unit: 2 CCFLs edge-light (top/bottom)
- Power supply input voltage: full range, 100 – 240 V AC

## Model 523561:

### Standards

- PS/2
- USB
- Compatible with Windows, MAC and Unix

### General

- PC connections: 8
- Console connections: 1
- PC port connectors: keyboard, mouse, monitor: HD15 x 8
- Console port connectors:
  - Keyboard: PS/2
  - Mouse: PS/2
  - Monitor: HD15 female
- Computer selection: via buttons, hotkeys and Windows switching software client
- Max. number of cascadable PCs: 64 (when cascaded with models of same type)
- OSD: yes
- Automatic scan interval: 3, 8, 15, 30 seconds
- Programmable scan pattern
- Cable length max.: 30 m (100 ft.) at console; 15 m (50 ft.) at PC ports for PS/2; 5 m (16 ft.) at PC ports for USB
- VGA bandwidth: 1920 x 1440, DDC2B
- LCD KVM drawer connector: CEN36
- Video resolution: max. 1024 x 768
- FCC Class B, CE, RoHS

### Power

- 12 V DC, 3 A (when connected to LCD drawer); 9 – 12 V DC, 500 mA (when not connected)

## Environmental

- KVM module dimensions: 80 (H) x 404 (W) x 114 (D) mm (3.2 x 15.9 x 4.5 in.)
- Weight: 18.8 kg (42.7 lbs.)
- Operating temperature: 0 – 50°C (32 – 122°F)
- Operating humidity: 0 – 95%
- Storage temperature: -20 – 60°C (-4 – 140°F)
- Storage humidity: 95% RH

## Package contents

- Rackmount Console KVM Switch
- Rear bracket and extension kit
- Two PS/2 to USB adapters
- Power adapter
- One 6 ft. (1.8 m) PS/2 3-in-1 cable
- Console quick installation guide
- KVM Switch Module user manual

### *Additional cables required (sold separately)*

- PS/2 3-in-1 KVM Cable, 6 ft. (1.8 m): 502535
- PS/2 3-in-1 KVM Cable, 10 ft. (3.0 m): 503303

- Power consumption: max. 500 mA

## LCD Panel Specifications

- Active display area: 337.920 x 270.336 (mm)
- Pixel pitch (mm): 0.264 (H) x 0.264 (V)
- Resolution: 1280 x 1024 @ 60/70/75 Hz
- Color pixel arrangement: RGB vertical strip
- Display mode: normally white
- Brightness (cd/m<sup>2</sup>): 260 (center)
- Contrast ratio: 450:1
- Display colors: 16.2M (RGB 6-bits + FRC data)
- User control: OSD control (auto-saving)
- Input signal: RGB analog, H/V separate
- Plug-n-Play VESA: VESA DDC 1/2B
- Power consumption (max): 37 W (normal operation/typical)
- Viewing angle (typical): -80 – 80(H); -80 – 80(V)
- Backlight unit: 4 CCFLs edge-light (top/bottom)
- Power supply input voltage: full range, 100 – 240 V AC

## Environmental

- KVM module dimensions: 40 (H) x 404 (W) x 114 (D) mm (1.6 x 15.9 x 4.5 in.)
- Weight: 18.8 kg (41.44 lbs.)
- Operating temperature: 0 – 50°C (32 – 122°F)
- Operating humidity: 8 – 95%
- Storage temperature: -20 – 60°C (-4 – 140°F)
- Storage humidity: 95% RH

## Package contents

- Rackmount Console KVM Switch

- Rear bracket and extension kit
- Power adapter
- 6 ft. (1.8 m) PS/2 3-in-1 cable
- 6 ft. (1.8 m) USB 3-in-1 cable
- Console quick installation guide
- KVM Switch Module user manual

*Additional cables required (sold separately):*

- PS/2 3-in-1 KVM Cable, 6 ft. (1.8 m): 502535
- PS/2 3-in-1 KVM Cable, 10 ft. (3.0 m): 503303
- USB 3-in-1 KVM Cable, 6 ft. (1.8 m): 502242
- USB 3-in-1 KVM Cable, 10 ft. (3.0 m): 503327

## Model 523578:

### Standards

- PS/2
- USB
- Compatible with Windows, MAC and Unix

### General

- PC connections: 8
- Console connections: 1
- PC port connectors: keyboard, mouse, monitor: HD15 x 8
- Console port connectors:
  - Keyboard: PS/2
  - Mouse: PS/2
  - Monitor: HD15 female
- Computer selection: via buttons, hotkeys and Windows switching software client
- Max. number of cascaded PCs: 64 (when cascaded with models of same type)
- OSD: yes
- Automatic scan interval: 3, 8, 15, 30 seconds
- Programmable scan pattern
- Cable length max.: 30 m (100 ft.) at console; 15 m (50 ft.) at PC ports for PS/2; 5 m (16 ft.) at PC ports for USB
- VGA bandwidth: 1920 x 1440, DDC2B
- LCD KVM drawer connector: CEN36
- Video resolution: max. 1024 x 768
- FCC Class B, CE, RoHS

### Power

- 12 V DC, 3 A (when connected to LCD drawer); 9 – 12 V DC, 500 mA (when not connected)
- Power consumption: max. 500 mA

### LCD Panel Specifications

- Active display area: 376.32 x 301.056 (mm)
- Pixel pitch (mm): 0.294 (H) x 0.294 (V)
- Resolution: 1280 x 1024 @ 60/70/75 Hz

- Color pixel arrangement: RGB vertical strip
- Display mode: normally white
- Brightness (cd/m<sup>2</sup>): 250 (center)
- Contrast ratio: 500:1
- Display colors: 16.7M (RGB 8-bits data)
- User control: OSD control (auto-saving)
- Input signal: RGB analog, H/V separate
- Plug-n-Play VESA: VESA DDC 1/2B
- Power consumption (max): 40 W (normal operation/typical)
- Viewing angle (typical): -85 – 85(H); -85 – 85(V)
- Backlight unit: 4 CCFs edge-light (top/bottom)
- Power supply input voltage: full range, 100 – 240 V AC

### Environmental

- KVM module dimensions: 40 (H) x 404 (W) x 114 (D) mm (1.6 x 15.9 x 4.5 in.)
- Weight: 21.0 kg (46.3 lbs.)
- Operating temperature: 0 – 50°C (32 – 122°F)
- Operating humidity: 8 – 95%
- Storage temperature: -20 – 60°C (-4 – 140°F)
- Storage humidity: 95% RH

### Package contents

- Rackmount Console KVM Switch
- Rear bracket and extension kit
- Power adapter
- 6 ft. (1.8 m) PS/2 3-in-1 cable
- 6 ft. (1.8 m) USB 3-in-1 cable
- Console quick installation guide
- KVM Switch Module user manual

*Additional cables required (sold separately)*

- PS/2 3-in-1 KVM Cable, 6 ft. (1.8 m): 502535
- PS/2 3-in-1 KVM Cable, 10 ft. (3.0 m): 503303
- USB 3-in-1 KVM Cable, 6 ft. (1.8 m): 502242
- USB 3-in-1 KVM Cable, 10 ft. (3.0 m): 503327



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