

# STARVIEW

## Server Sharer Plus



## User's Manual SV421+



### Introduction

The StarView Plus KVM switch model SV421+, which will be called simply the SV421+, is a controller to allow one user to access more than one computer. The SV421+ provides the easiest and most cost-effective way to access more than one computer.

With the powerful features of the SV421+, anyone is capable of operating or testing many computers using only one keyboard, one mouse, and one monitor. Switching between controlled computers is quick and easy, you either press the button on the faceplate of the SV421+ or you can use our simple "Hot Key" commands. It is so simple to use as there is no software to install. No more frustrating incompatibility problems as the "Hot Keys" can be used with any Operating System on any hardware platform. This is possible because the SV421+ intercepts the "Hot Key" commands directly from the keyboard.

A single SV421+ can control up to four computers. If you combine many SV421+'s you can control up to 64 computers using standard cables. This combination of SV421+'s is called cascading and involves connecting the console port of a lower level SV421+ to a PC port of the next higher level SV421+. This aspect of the SV421+ will be described in detail later. The SV421+ also offers a powerful Auto-Scan mode, which will allow you to scan all operational PC's one by one and will stop at the Users' request.

There is no better way to save money because the use of the SV421+ eliminates the need to purchase a Monitor, Keyboard and mouse for each computer attached to it. The SV421+ also eliminates the User wasted time and effort by allowing them to control all the connected PC's from one workstation.

### FEATURES

- Supports Microsoft Intellimouse, Logitech First Mouse+, and MouseMan+, etc...
- Mouse conversion: A single PS/2 mouse controls any connected PC whether those PC's have PS/2 or Serial mice attached.\*
- A single Keyboard controls all connected PC's whether they have PS/2 keyboards or AT-Style keyboards.
- Superior Video Quality, The SV421+ has an ultra-high bandwidth, 180 MHz, that will support video resolutions up to 1600 x 1200 at 60 Hz refresh.
- Hot-Plug Capability: You can add or remove PC's from the SV421+ without turning the SV421+ OFF.
- Easy PC selection either through the "Hot Key" commands or manual Button selection.
- Keyboard settings such as Num Lock, Caps Lock, and Scroll Lock, are automatically saved and restored as you switch from PC to PC.
- Auto-Scan mode will automatically switch from PC to PC amongst the active machines connected to the SV421+.
- Quickly select PC's with the Previous/Next mode without leaving the keyboard.
- Online LED's and Selected LED's to show you the status of your PC's and SV421+ at a glance.

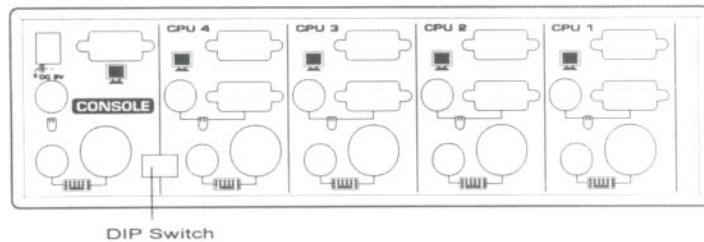
- Daisy-Chain to a depth of three levels, to allow access to up to 64 computers.
- Use standard cables to connect your PC's to the SV421+.
- Save space, power, and equipment costs.
- No software required.
- Easy to install and use.
- Optional External on-screen & display module (OSD) allows computers to be selected from an on-screen menu. (StarTech part number SV130)

### Specifications

Function	Specification
Power of Consumption	9V DC 250 Ma (max)
Number of PC's Accessed	4
PC Selected by	Keyboard, button, or foot switch
LED's	4 onlin indicators, 4 selected indicators
Scan Interval	3, 10, 20, 40
Keyboard Connector	5-pin DIN (AT stle) / 6-pin mini-DIN (PS/2) female
Serial Mouse Connector	9-pin D type (standard serial connector) female
PS/2 Mouse Connector	6-pin mini-DIN (standard PS/2) female
Monitor Connector	High Density 15-pin D type (standard VGA/SVGA) male
Enclosure	Metal
Weight	2650g (Approximately 6 lbs.)
Dimensions (L x W x H)	254 x 180mm x 82mm

\* The SV421+ translates PS/2 mouse protocols to MS mouse protocols.

### Rear panel



1. To reset the keyboards and mice simultaneously press select buttons 1 and 2 then hold them for three (3) seconds. This can be done whenever necessary.

NOTE: The SV421+ allows for PC's to be connected or removed from the unit WITHOUT turning off the power to the SV421+.

## Hardware Requirements

### To connect to a Monitor

- A VGA, SVGA, or Multisync monitor card installed in each PC.
- One VGA, SVGA or Multisync Monitor

### To connect a Mouse

- DB-9 serial port or 6-pin mini-DIN PS/2 bus mouse port in each PC.
- One PS/2 mouse

### To connect a Keyboard

- 5-pin DIN AT keyboard port with +5V DC on pin 5 and ground on pin 4, or a 6-pin mini-DIN PS/2 keyboard port with +5V DC on pin 4 and ground on pin 3.
- One PS/2 style Keyboard or one AT style Keyboard.

## Installing the Hardware:

### Setting up one SV421+

The connection of the Keyboard, Video and the Mouse is accomplished by using the same cables that you would use to connect them to a PC.

Connecting the mouse:

- Connect the 6-pin mini-DIN male plug of the PS/2 mouse to the female PS/2 port located in the CONSOLE section on the back of the SV421+.

Connecting the keyboard:

- If your keyboard uses a 5-pin DIN (AT style) connector, plug the male 5-pin DIN connector into the female 5-pin DIN socket in the CONSOLE section of the SV421+.

OR

- If your keyboard uses a 6-pin mini-DIN (PS/2 style) connector, plug the male 6-pin mini-DIN connector into the 6-pin mini-DIN socket in the CONSOLE section of the SV421+.

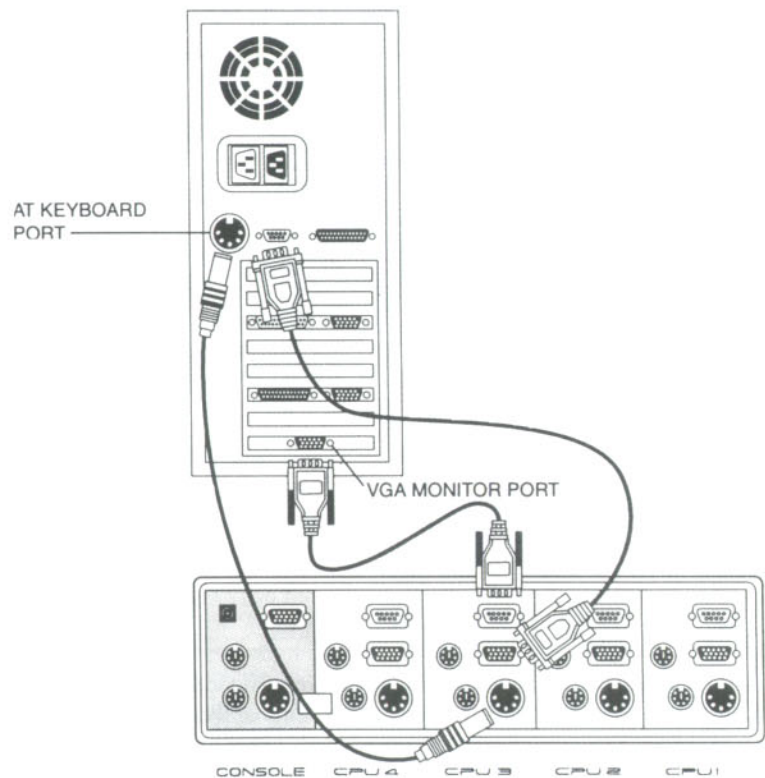
Connecting the monitor:

- Using the cable attached to your monitor, plug the male high density DB-15 (standard VGA, SVGA, or Multisync) connector into the female high density DB-15 connector in the CONSOLE section of the SV421+.

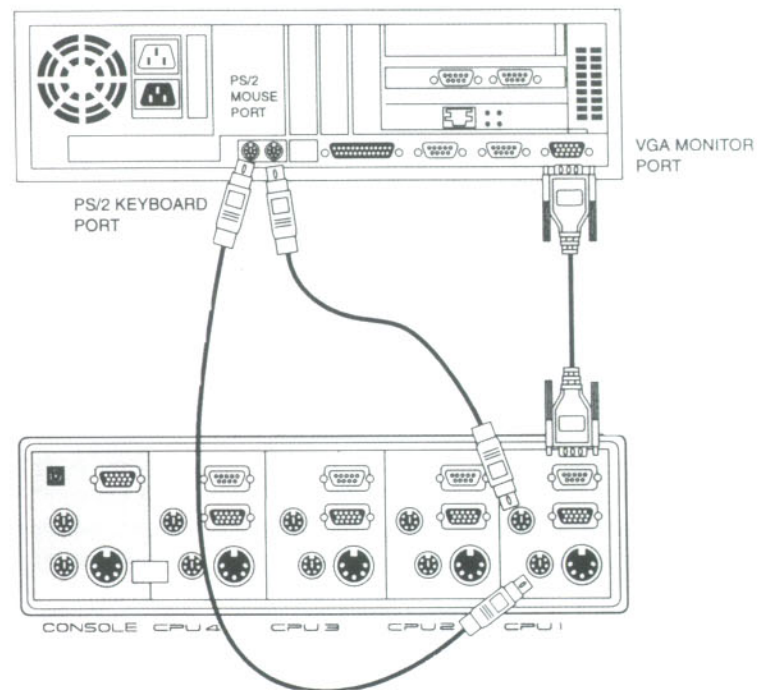
Connecting a computer:

- Connect a VGA compatible monitor extension cable from the video card of the computer to the video connector in one of the PC sections of the SV421+.
- Connect a straight-through keyboard from the keyboard port of your computer to the keyboard port of the same PC section where you connected the video.
- Connect a straight-through PS/2 or Serial mouse extension cable from the mouse connection of your PC to the mouse connector in the same PC section of your SV421+ where you have connected the video and the keyboard.

## Connecting an AT Computer to the StarView SV421+



## Connecting a PS/2 Computer to the StarView SV421+



## Cascading Multiple SV421+ KVM switches

The CONSOLE port of one SV421+ can be connected to a CPU port of another SV421+ in order to access more computers from a single keyboard, monitor, and mouse. By connecting up to 21 SV421+'s together, you can control as many as 64 separate PC's. The adjacent table shows how many SV421+'s are needed to control any given number of PC's.

Number of SV421+'s Required	Number of PCs to Control
1	1-4
2	5-7
3	8-10
4	11-13
5	14-16
6	17-19
7	20-22
8	23-25
9	26-28
10	29-31
11	32-34
12	35-37
13	38-40
14	41-43
15	44-46
16	47-49
17	50-52
18	53-55
19	56-58
20	59-61
21	62-64

### One Level (To control up to four computers)

- Set DIP Switch 4 to ON
- Connect the monitor output, mouse port, and keyboard port of each computer to one of the CPU ports of the SV421+ using your normal cables.

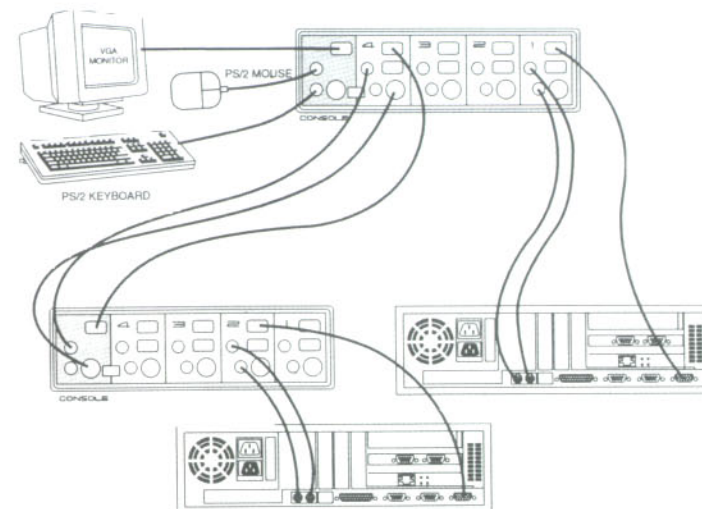
**Two Levels** (enables one SV421+ to control additional computers either by direct connection or indirectly through another SV421+ (Cascaded). The maximum number of computers is now 16)

- Set DIP Switch 4 of the First Level SV421+ to the ON position, ALL other SV421+ units must have DIP Switch 4 turned OFF.
- Computers may be connected either to the First Stage unit or to the other SV421+'s in the Second Stage.
- When connecting computers to the SV421+ you may use either the PS/2 or the AT style keyboard as appropriate for each machine.
- When connecting a Second Stage SV421+ you MUST use the AT style Keyboard connector to connect the console port of the Second Stage Unit to a CPU port of the First Stage Unit.

**Three Levels** (similar to two level operations. You can control up to 64 PC's in this configuration.)

- Set DIP Switch 4 of the First Level SV421+ to the ON position, ALL other SV421+ units must have DIP Switch 4 turned OFF.
- Computers may be connected either to the First Stage unit or to the other SV421+'s in the Second Stage.
- When connecting computers to the SV421+ you may use either the PS/2 or the AT style keyboard as appropriate for each machine.
- When connecting a Second Stage SV421+ you MUST use the AT style Keyboard connector to connect the console port of the Second Stage Unit to a CPU port of the First Stage Unit.

## Cascading PS/2 Computers with Second Level StarView KVM Switch



### Operating the SV421+

You can access any computer attached to the SV421+ by pressing one of the four buttons on the front panel, the foot switch, or by using the "Hot Keys". The SV421+ will then direct the keyboard, video, and mouse to and from the selected computer. It will seem as if the selected CPU is right there in front of you.

### Selecting PC's using the Front Panel SELECT buttons

To access a computer, press the SELECT button for that specific port and the "Selected LED" of the unit you have chosen will turn on.

To access a computer attached to a Second Level SV421+ just press the button on the Second Level SV421+ for the port that the PC is connected to.

To access a computer attached to a Third Level SV421+ just press the button on the Third Level SV421+ for the port that the PC is connected to.

### Selecting the PC Using the Foot Switch

There is an optional Foot Switch available for the SV421+, the SV20. As you tap the Foot switch the SV421+ will move the Selected LED to the next CPU port, continue tapping the foot switch until the CPU you want is selected.

### Selecting the PC using Keyboard "Hot Keys"

If you know the number of the port of the CPU that you wish to access you can use the "Hot Keys" to directly select that PC. Each PC that is connected to the SV421+ has a unique keyboard combination to use so that it can be selected via the "Hot Keys". Each combination will begin with the three keys, (pressed all at once or one at a time (in any order)) <alt> + <ctrl> + <shift>, then you will press the port number of the CPU you want to access, and finally the <enter> key. Below you will find example of the "Hot Key" usage.

The following table shows examples of selections made on the SV421+ by the use of hot keys and the resulting computer selection

Press These Keys	To Select this Computer
<alt> + <ctrl> + <shift> 1 <enter>	CPU1 on the First Level SV421+
<alt> + <ctrl> + <shift> 2 <enter>	CPU2 on the First Level SV421+
<alt> + <ctrl> + <shift> 12 <enter>	CPU2 on the Second Level SV421+ attached to the CPU1 port on the First Level SV421+
<alt> + <ctrl> + <shift> 221 <enter>	CPU1 on the Third Level SV421+ attached to the CPU2 port on the Second Level SV421+ attached to the CPU2 Port of the First Level SV421+

## Scanning the Active Computers

The SV421+ has an Auto-Scan mode that will scan each "Active" computer attached to the unit. Once placed in Auto-Scan mode the SV421+ will continue to scan until the user presses the [SPACE BAR]. You can adjust the amount of time the SV421+ takes to change computers by adjusting the settings of DIP Switches #1 and #2. These switches are located on the back of the SV421+ towards the left side. Use the following table to determine the Scan Time.

Dip Switch Number		Scan Interval
1	2	
ON	ON	3 Seconds
OFF	ON	10 Seconds
ON	OFF	20 Seconds
OFF	OFF	40 Seconds

**To begin Auto-Scan Mode:** (The Selected LED will blink indicating Auto-Scan Mode)

- Press the <alt> + <ctrl> + <shift> keys(all at once or one at a time)
- Press the 0 key
- Press the <enter> key

The SV421+ should begin scanning through the active computers at this point.

**To stop the Auto-Scan Mode**

- Press the [SPACE BAR]

Once the Auto-Scan mode is started all keyboard input will cease until the [SPACE BAR] is pressed.

## Quick Previous/Next PC switching

To start the Previous/Next Mode: (The Selected LED will blink slowly, to show that you are in Previous/Next Mode, on the currently selected CPU.)

- Press the <alt> + <ctrl> + <shift> keys(all at once or one at a time)

- Press the 9 key
- Press the <enter> key

**To Select the Next CPU attached to the SV421+:**

- Press the <shift> key located on the right side of the keyboard.

**To Select the Previous CPU attached to the SV421+:**

- Press the <shift> key located on the left side of the keyboard.

**To quit Previous/Next Mode:**

- Press the [SPACE BAR]

Once you have entered Previous/Next mode all keyboard input except the two shift keys will stop until the [SPACE BAR] is pressed.

## LED's

There are two LED's per CPU port for a total of eight LED's. These are separated into two groups the Online group (One per CPU Port located above each SELECT button) and a Selected Group.

The Online LED will light if there is a ready PC attached to that port

The Selected LED will indicate that the PC attached to the CPU port is currently selected.

Selected LED Status	What It Means
OFF	This Port is not Selected
Flashing Slowly (Long OFF, Short ON)	This Port is connected to another StarView Unit. (cascade mode)
ON	This Port is connected to a PC or Server and is currently selected
Flashing Slowly (Long ON, Short OFF)	This Port is connected to a PC or Server and is currently Selected in Previous/Next Mode
Flashing Quickly (Equal ON and OFF)	This Port is connected to a PC or Server and is currently Selected in Auto-Scan Mode

## Trouble Shooting

Symptom	Causes	Remedy
The first level SV421+ does not take Hot Keys	Incorrect DIP switch settings	Set the first level SV421+ switch 4 to ON, all other SV421+ switches to OFF
Pressing the Hot Keys gets no response	SV421+ operates in Scan or in the Quick Previous/Next mode	Press the space bar to exit these modes before giving Hot Key commands.
	The selected port connects to a power off computer	Change the port selection to a power on computer
	Improper keyboard reset	Unplug then plug the keyboard back into the connector
		Turn OFF all computers, wait for 5 econds and turn them back on.

NOTE: The following statements assume that all cables are correctly attached.

## Keyboard Problems

The SV421+ works with both AT style Keyboards and PS/2 Style keyboards. Old XT keyboards (84 Key models) and some older AT models (Those with the Function Keys on the side instead of across the top) do not work with the StarView Plus KVM switches. Keyboard problems are rarely reported and in most cases, they can be solved by replacing the keyboard.

## Video Problems

The SV421+ supports VGA, SVGA, MultiSync, and XGA(Interlaced) with resolutions up to 1600 x 1024. The maximum bandwidth is 180 MHz.

You may use monitors or video cards with a higher resolution but signal decay may occur. When you encounter signal decay, the video image will lack in sharpness and overall quality.

It is strongly recommended that you use Coaxial VGA cables. Using these high quality cables will eliminate possible VGA problems.

## Mouse Problems

Assuming that all the cables are the correct ones, and they are properly installed, Perform the following procedure:

- a. Turn off the Switch Box and all PC's attached to it in order to reset the system.
- b. Turn the Switch Box back on.
- c. Turn the attached PC's back on. (NOTE: The Switch Box must be turned on before you turn on your computers) The SV421+ supports mouse emulation and must be powered on to provide the needed translation. All PC's may be turned on at the same time.
- d. If problems persist, change the mouse and/or the mouse driver. Try a generic mouse driver (one should be included with your copy of Windows 3.x, Win95, or Win NT). Use a regular mouse, some combination mice (Mice that can be either PS/2 or Serial) have special function buttons. (Kensington manufactures a mouse that has two extra buttons.) The SV421+ may not support the extra buttons and wheel when using a "net mouse" in serial mode. However, the two basic buttons should work fine. Switch the mouse to PS/2 mode if you need the functions of the extra buttons and/or the wheel.
- e. When using AT machines with a serial mouse, please note that the SV421+ mouse conversion does NOT support the Mouse System mouse driver. You must use the MS mouse driver instead of the Mouse Systems driver.

Some Notebook computers have difficulties working with the SV421+ when both mouse and keyboard ports are used simultaneously. The laptops known to exhibit this behavior are the IBM Thinkpad and the Toshiba Tecra. To avoid this problem you should connect either the mouse OR the keyboard to the SV421+. If you connect the mouse only you will have to use the Laptop keyboard when you switch to that port.

## Preventing Radio & TV Interference

WARNING!! This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

## Limited Warranty

IN NO EVENT SHALL THE DIRECT VENDOR'S LIABILITY EXCEED THE PRICE PAID FOR THE PRODUCT FROM DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE PRODUCT, DISK, OR ITS DOCUMENTATION.

The direct vendor makes no warranty or representation, expressed, implied, or statutory with respect to the contents or use of this documentation, and specially disclaims its quality, performance, merchantability, or fitness for any particular purpose.

The direct vendor also reserves the right to revise or update device or documentation without obligation to notify any individual or entity of such revisions, or update. For further inquiries please contact your direct vendor.

## Accessories

Foot Switch and Rack Panel

Part Number	Specifications
SV-20	ON/OFF V type foot switch (1a 1b) (93x80x32mm)
SV621RACK	19+ 2U rack panel for SV-421 & SV421+
SV120	External SUN to PS/2 converter
SV110	External MAC to PS/2 converter
SV560UTP	Category 5 UTP Console Extender / Sharer