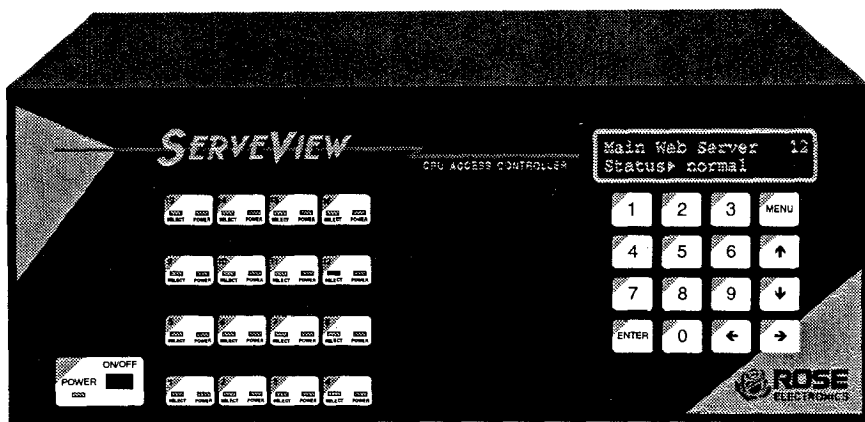


SERVEVIEW — KEYBOARD CONTROLLED SWITCH

INSTALLATION AND OPERATION MANUAL



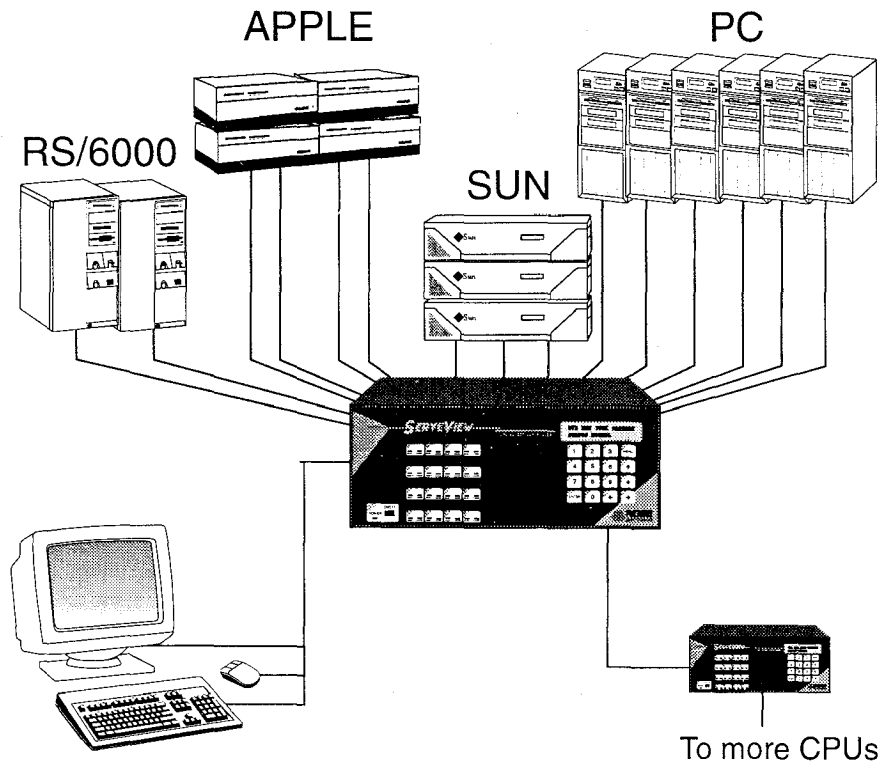
Make the Rose Connection 

PO BOX 742571 ■ HOUSTON, TEXAS 77274 ■ (713)933-7673

 **ROSE**
ELECTRONICS

PO BOX 742571 ■ HOUSTON, TEXAS 77274 ■ (713)933-7673

SERVEVIEW™ CPU access controller Installation and Operation Manual



Make the Rose Connection



PO BOX 742571 ■ HOUSTON, TEXAS 77274 ■ TEL (713)933-7673

LIMITED WARRANTY

Rose Electronics warrants the ServeView™ to be in good working order for one year from the date of purchase from Rose Electronics or an authorized dealer. Should this product fail to be in good working order at any time during this one year warranty period, Rose Electronics will, at its option, repair or replace the Unit as set forth below. Repair parts and replacement units will be either reconditioned or new. All replaced parts become the property of Rose Electronics. This limited warranty does not include service to repair damage to the Unit resulting from accident, disaster, abuse, or unauthorized modification of the Unit, including static discharge and power surges.

Limited Warranty service may be obtained by delivering this unit during the one year warranty period to Rose Electronics or an authorized repair center providing a proof of purchase date. If this Unit is delivered by mail, you agree to insure the Unit or assume the risk of loss or damage in transit, to prepay shipping charges to the warranty service location, and to use the original shipping container or its equivalent. You must call for a return authorization number first. Under no circumstances will a unit be accepted without a return authorization number. Contact an authorized repair center or Rose Electronics for further information.

ALL EXPRESS AND IMPLIED WARRANTIES FOR THIS PRODUCT INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO A PERIOD OF ONE YEAR FROM THE DATE OF PURCHASE, AND NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER THIS PERIOD. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

IF THIS PRODUCT IS NOT IN GOOD WORKING ORDER AS WARRANTED ABOVE, YOUR SOLE REMEDY SHALL BE REPLACEMENT OR REPAIR AS PROVIDED ABOVE. IN NO EVENT WILL ROSE ELECTRONICS BE LIABLE TO YOU FOR ANY DAMAGES INCLUDING ANY LOST PROFITS, LOST SAVINGS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF OR THE INABILITY TO USE SUCH PRODUCT, EVEN IF ROSE ELECTRONICS OR AN AUTHORIZED DEALER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, OR FOR ANY CLAIM BY ANY OTHER PARTY.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR CONSUMER PRODUCTS, SO THE ABOVE MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

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.

© Copyright Rose Electronics 1991-1996. All rights reserved.

No part of this manual may be reproduced, stored in a retrieval system, or transcribed in any form or any means, electronic or mechanical, including photocopying and recording, without the prior written permission of Rose Electronics.

IBM®, AT, and PS/2 are trademarks of International Business Machines Corp.
Microsoft® and Microsoft Windows™ are registered trademarks of Microsoft Corp.
Multisync is a trademark of NEC Technologies, Inc.

Rose Electronics Part # MAN-SVE13

Printed in the United States of America ■ Revision 1.3

TABLE OF CONTENTS

INTRODUCTION	1
Features	1
GETTING STARTED	2
Package contents	2
Cable requirements	2
Locating the unit	2
Selecting a monitor	3
Selecting a keyboard and mouse	3
PC mice	3
SERVEVIEW OVERVIEW	4
The front panel	4
The rear panel	5
QUICK SETUP SYSTEM WIRING GUIDE	6
QUICK INSTALL	7
Step 1. Configuring the unit	7
Step 2. Connecting the monitor, keyboard, and mouse	7
Step 3. Connecting the CPUs	8
Step 4. Powering up the system	8
Step 5. Switching among CPU	8
SERVEVIEW EXPANSION	9
Expansion cable requirements	10
Slave unit installation	10
OPERATION: KEYBOARD COMMANDS	11
Keyboard CPU selection	11
Going to the next or previous CPU	12
Scan mode commands	12
Scan time interval command	12
Setting CPU keyboard and mouse types	13
Mode command	14
Name command	15
Maximum ports command	16
Width command	16
Units command	16
Screen blanking command	17
Typematic value command	18
Reset command	19
Null command	19
ROM Identification command	19
OPERATION: FRONT PANEL	20
Power up display	20
Normal display	20
Switching CPUs from the front panel	20
Using review mode to switch CPUs	20
Display blanking	21
Keypad repeat	21
Configuration menu: Scan mode	21
Configuration menu: Scan time	21

Configuration menu: Power on scan	22
Configuration menu: Keyboard	22
Configuration menu: Mouse	23
Configuration menu: CPU keyboard/mouse	23
Configuration menu: CPU names	24
Configuration menu: Maximum ports	24
Configuration menu: Expansion width	25
Configuration menu: Expansion units	25
Configuration menu: Video blank time	25
Configuration menu: Keyboard typematic rate	25
Configuration menu: Keyboard delay	26
Leaving the configuration menu	26
MISCELLANEOUS OPERATION	27
Video distance capability	27
Mapping PC keyboards to Macintosh CPUs	28
Power interruption to the ServeView	28
Mouse sensitivity	28
Using the RS232 port	28
Rackmount kit	29
Slave unit operation	29
UPGRADING THE FLASH MEMORY	30
KEYBOARD COMMAND SUMMARY	32
TROUBLESHOOTING	34
SERVICE INFORMATION	36
Maintenance and repair	36
Reset to factory default	36
Technical support	36
APPENDICES	37
Appendix A. CPU/MKM pinout specification	37
Appendix B. RS232 pinout specifications	38
Appendix C. Factory default settings	38
Appendix D. General specifications	39
Appendix E. Error messages	39
Appendix F. Cables and accessories	40
FIGURES	1
Figure 1. The ServeView unit	1
Figure 2. The ServeView front panel	4
Figure 3. Rear panel view of model SVE-16U	5
Figure 4. Typical installation diagram	6
Figure 5. Expansion system layout	9
TABLES	4
Table 1. The front panel	4
Table 2. The rear panel	5
Table 3. Mode value description	14
Table 4. Typematic rate	18
Table 5. Typematic delay	18
Table 6. Video distance capability	27
Table 7. PC keyboard to Apple keyboard map	28
Table 8. Keyboard command summary	32

INTRODUCTION

Thank you for choosing ServeView™. Designed for *plug-and-play* operation, your new ServeView CPU access controller will simplify your job by helping you organize your multiple computer applications. Because ServeView lets you use a single keyboard, monitor, and mouse to access a number of computers, you can significantly reduce your equipment overhead and end keyboard and monitor clutter.

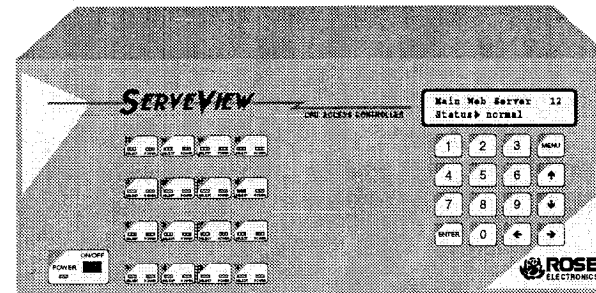


Figure 1. The ServeView unit

Features

- Access up to 256 PCs with one keyboard, monitor, and mouse
- Supports PC, Apple, and Sun computers, keyboards, mice, and monitors
- Front panel has 2-line by 20-character vacuum fluorescent display and 16-key keypad for controlling access to your CPUs
- Microprocessor controlled keyboard and mouse switching and emulation for plug-and-play operation
- Saves energy to assist in latest energy saving programs
- Available in 4, 8, 12, and 16 port models
- 4, 8, and 12-port models are field expandable to 16 ports with 4-port expansion kit
- Drives video, keyboard, and mouse signals up to 200 feet away
- Select CPU from keyboard, front panel, or RS232 port
- View name of CPU from front panel display
- Supports all PC, Macintosh, and Sun video types
- Video resolution supports up to 1280X1024 non-interlaced video
- Supports all modes of PS/2, AT, Apple, and Sun compatible keyboards
- Mouse can be PS/2, Microsoft serial, Mouse Systems serial, serial 8-bit, Apple or Sun
- Front panel LEDs show selected CPU and its power-on state
- Remembers and restores Num Lock, Caps Lock, Scroll Lock, and keyboard mode of each CPU when switching
- Screen blank function turns off video after 1–999 seconds of inactivity
- Scan function sequences among CPUs at a rate of 1–15 seconds
- Programmable keyboard typematic rate and delay for PCs
- Can save keyboard power-up state, screen blank interval, and typematic value in non-volatile memory
- Flash memory allows updating firmware through serial port
- Null command can correct out-of-sync PS/2 mouse
- Available in 117VAC or 230VAC models
- 19" and 24" rack mount kits available

GETTING STARTED

To acquaint you with your ServeView unit, this manual first describes ServeView's front and rear panels. Installation and operation instructions begin with the *Quick setup system wiring guide* on page 6. This easy-to-understand diagram illustrates how to connect ServeView to your CPUs, monitor, keyboard, and mouse. Information for setting up a ServeView expansion system is given in the *ServeView expansion* section starting on page 9.

Package contents

Your ServeView package includes the ServeView unit, a power transformer, a serial cable, your warranty registration card, and this manual. The serial cable will not be used in most operations. It is used to upgrade the ServeView's flash program memory, so do not discard it.

Cable requirements

ServeView connects to each CPU with a CPU Adapter Cable and to the monitor, keyboard, and mouse with an MKM Adapter Cable. These cables are most commonly purchased with the ServeView and will provide quick and trouble-free operation.

To connect more than 16 CPUs, you must connect slave units to the master ServeView. To do this you need a ServeView-to-ServeView adapter cable for each slave unit. Cables and accessories are available from where you purchased your ServeView.

Most installations use cable no longer than 20 feet in length. Cable length will affect the quality of the video, depending upon which resolution you will be using. You can improve the video resolution and distance by ordering coax cables, see *Appendix F* and *Table 6 Video Distance Capability*.

Locating the unit

The ServeView unit is best located as close to the CPUs as possible. This will reduce the length of the CPU cables and provide a more cost-effective and neater installation. Some installations use a rack in which to mount the CPUs, some use shelves, and others may use a free-standing arrangement. Quite often ServeView will be mounted in a rack with the optional rackmount kit. Many customers will purchase a longer MKM adapter cable and put the monitor, keyboard, and mouse on a desk leaving the ServeView near the CPUs.

Selecting a monitor

Sharing a monitor between dissimilar systems requires a monitor which can sync to every CPU's video. It is recommended to get a 17" or larger high quality multi-sync monitor capable of syncing to 1280 by 1024 at 75 Hertz for maximum compatibility. Certain CPUs may also only generate composite sync. If using such a CPU, your monitor should be capable of accepting composite sync to form its video display. Most of the monitors described above accept composite sync.

Selecting a keyboard and mouse

Though the ServeView can convert any keyboard and mouse protocol to any other there are certain recommendations due to the difference between the input devices. If the CPUs are all the same, then it is recommended that the keyboard and mouse be the type that is normally used with those CPUs. If the CPUs are different then there are some limitations that favor using certain keyboard and mice as described below.

If there are Sun workstations being connected it is recommended that the Sun keyboard and mouse be used. The Sun 5 keyboard has 118 keys and key click and beep features. The PC and Apple keyboards have 101 and 105 keys without key click or beep. The keys not present on the PC and Apple keyboards can not be sent to the Sun, so use the Sun keyboard.

If you have mixed PC and Apple CPUs, there are two differences. An Apple mouse only has one button. If you need a second or third button on your PC applications, you will want to use the PC keyboard and mouse. A PC keyboard is missing 4 keys that an Apple keyboard has. They are the left and right Apple keys, the power key, and the numeric pad = key. A provision has been made to map the left and right control and alt keys on a PC keyboard to make up for this loss, so these functions are available. This is described further under miscellaneous operation.

PC mice

There are a wide variety of mice available for the PC. We support most of them. At this time we do not support the Logitech 3-button serial mouse, but do support the Logitech 3-button PS/2 mouse. The PC mouse is another 3-button mouse that we support. These are often available as inexpensive mice with a switch on the bottom to select between MicroSoft and PC Mouse. Use the PC mouse setting to have access to the third button. You must also have the correct driver loaded to access the third button.

Do not use the serial MicroSoft or 8 bit other mouse with a PC set for PC mouse. The mouse produces data faster than the PC can accept it and unpredictable results will occur.

SERVEVIEW OVERVIEW

The front panel

The ServeView front panel has a 2-line by 20-character display, 17 LEDs, a power switch, and a 16-key keypad. To familiarize yourself with ServeView's controls and indicators, review the illustration and descriptions given below.

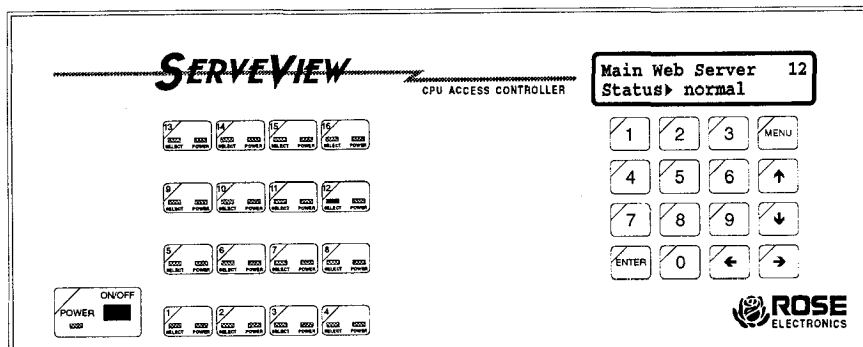


Figure 2. The ServeView front panel

Table 1. The front panel

Table 1. The front panel	
POWER	Power LED: When lit indicates that unit is powered on.
ON/OFF	Power Switch: Pressing the switch turns the unit on/off, provided supplied power adapter is properly connected.
LEDs	Indicator LEDs: Numbered pairs of LEDs indicate status of CPUs connected to corresponding numbered ports on rear panel.
	SELECT (RED) When lit shows which CPU or expansion unit you have selected for access.
	POWER (GREEN) When lit indicates which CPU is powered on or that expansion unit is attached and powered on.
DISPLAY	Twenty-character by two-line display shows CPU selected by name and number on first line. Power-on status is shown on the second line. Other information is displayed and configured by accessing the MENU function with the keypad.
KEYPAD	Sixteen-key keypad allows you to switch between CPUs sequentially by using the arrow keys or directly by using the numeric and enter keys. The menu key allows you to view or configure various settings of the ServeView.

The rear panel

All cables are connected at the ServeView's rear panel as illustrated and described below. Figure 3 shows a 16-port unit, model SVE-16U. The other models will not have all the connectors populated.

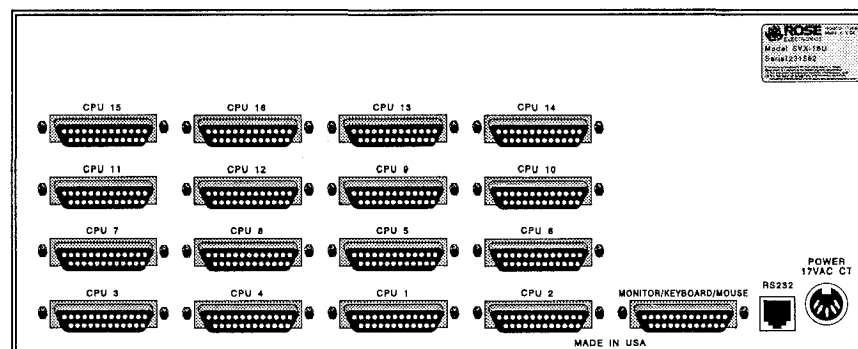


Figure 3. Rear panel view of model SVE-16U

Table 2. The rear panel

Panel Label	Connector	Description
CPU 1-16	DB25 Female	Computers are connected at these ports using CPU adapter cables. The cables have a DB25 male at one end and appropriate connectors at the other end, depending upon your video, keyboard and mouse type. You must have an adapter cable for each CPU you plan to connect.*
MONITOR/KEYBOARD/MOUSE	DB25 Female	Keyboard, monitor, and mouse are connected at this port using a MKM adapter cable. The cable has a DB25 male at one end and appropriate connectors at the other end, depending upon your video, keyboard and mouse type. Only one MKM adapter cable is needed.*
RS232	RJ-11 Jack	RS232 serial port for connecting a computer or terminal from which switching commands can be sent to switch CPUs. ServeView firmware is also upgraded through this port.
POWER	DIN5 Female	Power transformer included in package connects here. This is not a keyboard input. Power transformers are available for U.S. or International use. Both have center tapped output of 17 VAC at 1.4A. United States: Standard 117 VAC from regular AC power outlet International: 230 VAC input common outside USA

* See Appendix F and G for further cable information.

QUICK SETUP SYSTEM WIRING GUIDE

The following diagram offers a basic example of how to connect your CPUs, keyboard, monitor, and mouse to the ServeView unit. Connectors will vary depending upon the types of equipment being installed.

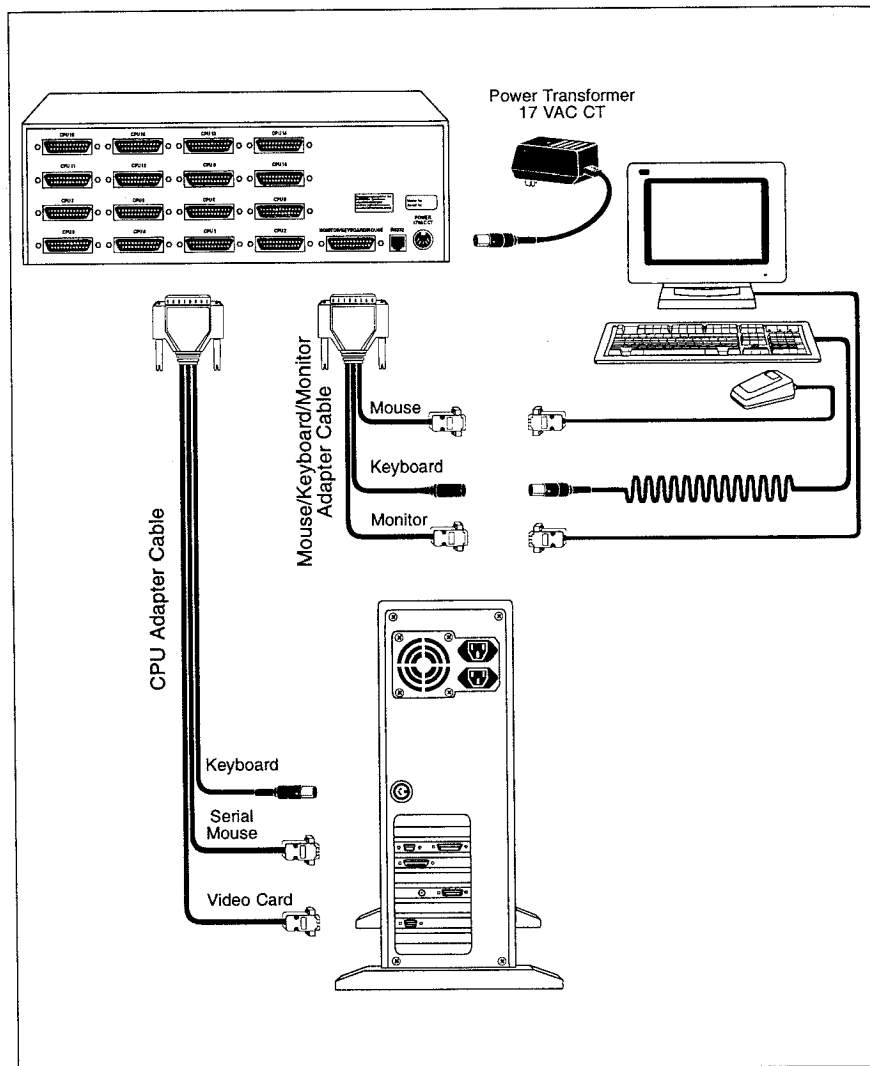


Figure 4. Typical installation diagram

QUICK INSTALL

This section provides instructions for the setup of your ServeView CPU access controller. For an illustrated example, see the *Quick setup system wiring guide* on the previous page. If you are installing more than one ServeView unit, please refer to the *ServeView expansion* section on page 9 prior to beginning installation.

Step 1. Configuring the unit

If you have decided to use an Apple or Sun keyboard and mouse or a PC with other than a PS/2 style mouse, you first must configure the unit. To do so you will use the numeric keypad and display.

- 1.1 Plug the power transformer's power jack into the the power plug located on the back of the ServeView unit, then plug the transformer into a power strip or wall outlet.
- 1.2 Push the On/Off switch on the front of the ServeView to power it up and wait a few seconds for the unit to complete its power-up procedure. The display shows the firmware revision, some diamonds as it performs its power up tests, and then connects the keyboard, monitor, and mouse to the CPU on port 1. The default name of "CPU 1" is then shown on display line 1. The CPU's power-on status is shown on display line 2.
- 1.3 Press the menu key to access the configuration menu. The first item to appear is the maximum number of ports. Press the up arrow until you get to the keyboard setting. Press the enter key to access the keyboard setting. Use the up arrow to scroll through the choices of PC, Mac(Apple), or Sun. Use the enter key to select the item scrolled to. The item selected now appears on the top line. Use the menu key to exit the menu. You are prompted to save the configuration menu. Press the enter key to save the new keyboard setting. Power the unit off.

Step 2. Connecting the monitor, keyboard, and mouse

The Monitor/Keyboard/Mouse (MKM) adapter cable connects your monitor, keyboard, and mouse equipment to the ServeView. Various styles of connectors are used by computers, so you should have the correct cable to match your equipment's connectors. MKM adapter cables are available where you purchased your ServeView.

- 2.1 Plug the DB-25 male connector of the MKM adapter cable into the port labeled "Monitor/Keyboard/Mouse" on the ServeView rear panel.
- 2.2 Plug the MKM adapter cable's monitor, keyboard, and mouse connectors into your equipment's corresponding connectors.

Step 3. Connecting the CPUs

CPU adapter cables connect your computers to the ServeView. Each computer requires its own adapter cable, with appropriate connectors for your particular CPU. CPU adapter cables are available where you purchased your ServeView.

- 3.1 Plug the DB-25 male connector of the CPU adapter cable into one of the numbered CPU ports on the ServeView rear panel.
- 3.2 Plug the CPU adapter cable's monitor, keyboard, and mouse connectors into the CPU's corresponding ports.

Step 4. Powering up the system

- 4.1 Power the unit back on. Boot up each of the connected CPUs. ServeView emulates all keyboard and mouse functions for automatic boot-up. You do not have to re-boot the CPU, if it is inconvenient. In this case you may need to issue the mode command, see page 14, to have proper keyboard communication.

Step 5. Switching among CPU

Your ServeView is now ready for operation using its default settings. To take full advantage of the ServeView features, please refer to the *Keyboard Command, Front Panel, and Operation* sections beginning on page 11. To begin switching immediately, however, follow the instructions below.

NOTE: Before entering any ServeView keyboard command, you must press and release the **left** Control Key. This activates ServeView to look for commands from the keyboard. You then have two seconds in which to start entering a valid command.

NOTE: When entering numbers from the keyboard, use only the numeral keys located at the top of your alpha-numeric keyboard. Numbers entered from the numeric keypad to the right will **not** be recognized as valid commands.

- 5.1 **From the keyboard** – Press and release your keyboard's **left** Control Key (<Ctrl>), then type in the CPU number.
- 5.2 **From the front panel** – Use the up and down arrows to sequence through the CPUs. The CPU name and number is shown on the top line of the display. The CPU power-on status is shown on the bottom display line. To switch to a CPU directly enter the number from the keypad.

SERVEVIEW EXPANSION

ServeView units can be chained together to expand your system to connect up to 256 CPUs. When used like this, the unit attached to the Monitor/Keyboard/Mouse port via the MKM adapter cable becomes the master unit. All other ServeViews are slave units that provide port expansion only and perform no control functions.

Slave units can be added to your ServeView system as you need them. For each slave you add to the system, you gain 15 additional ports. As Figure 5 shows, adding a single slave to a 16-port master unit gives you 31 ports. Adding a second slave unit will give you 46 ports, and so forth. Connecting a slave unit to each of your master ServeView's 16 ports lets you connect 256 CPUs to a single monitor, keyboard, and mouse.

Two configuration settings – units and width determine exactly how the CPUs are numbered. Please refer to the the units and width command for more information.

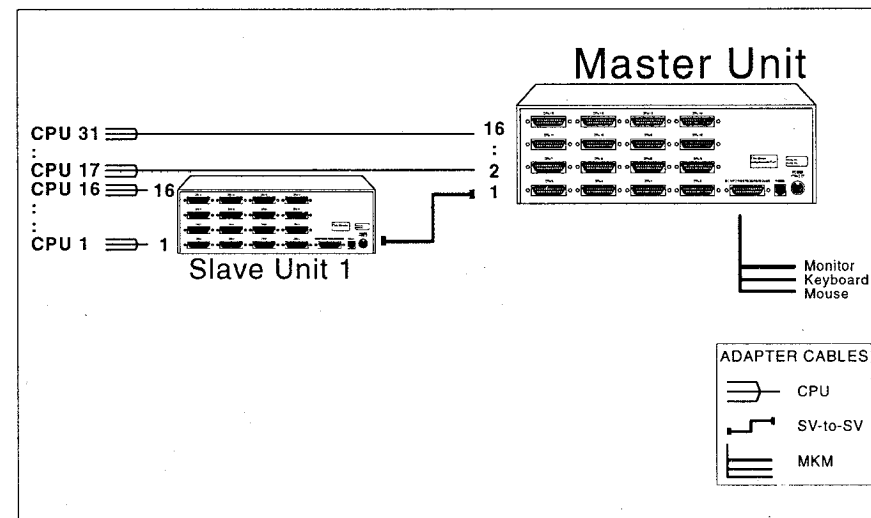


Figure 5. Expansion system layout

Expansion cable requirements

For slave-to-master installation you will need one ServeView-to-ServeView expansion cable for each slave unit. You still need a CPU adapter cable for each CPU you will be connecting to the ServeView CPU ports. As always, one MKM adapter cable is also required for connecting the master unit to your keyboard, monitor, and mouse.

Slave unit installation

Laying out the ServeView system prior to installation will make the installation process go more smoothly. It will also prevent confusion during operation by ensuring that the CPU selection numbers you use in the keyboard commands remain consecutive. Figure 5 illustrates the proper layout and numbering of your slaves and CPUs. Please also refer to page 29, **Slave unit operation**.

1. Connect the monitor, keyboard, and mouse to the master unit's Monitor/Keyboard/Mouse port as outlined on page 7.
2. Connect the MKM port of each slave unit to one of the numbered CPU ports on ServeView's rear panel using a ServeView-to-ServeView expansion cable.

As illustrated in Figure 5, when connecting slave units, connect the MKM port of the first slave to the master's CPU 1 port. If you need more than 31 ports, connect the second slave's MKM port to the master's CPU 2 port. This ensures the CPU selection numbers you use in keyboard commands remain consecutive.

Port 1 is now defined as CPU 1 on the slave connected to the master's CPU 1. For a system with a single slave and master, port 31 would be CPU 16 on the master.

3. From the keyboard attached to the master unit or its front panel, enter the maximum ports command to tell the master unit how many ports are being used. This allows scanning to cycle correctly and allows the master unit to control the interplay of the slave units. Enter command: **<Ctrl>Pxx<Enter>** (with xx representing the total number of ports in the system).
4. To save the number of ports entered above in the master unit's non-volatile memory, enter the Keep command: **<Ctrl> K** or say yes to save configuration from the front panel

NOTE: **<Ctrl>** represents pressing and releasing **left** Control Key.

OPERATION: KEYBOARD COMMANDS

ServeView is simple to operate. CPU selection and function commands are entered from the keyboard or the front panel. This section details each ServeView function and how to access it from the keyboard. To learn about how to access ServeView from the front panel see the *Front panel* section. For information on selecting CPUs from a computer or terminal connected to ServeView's RS232 port, please refer to page 28. Also see the *Keyboard command summary* starting on page 32.

IMPORTANT OPERATION NOTE: To send ServeView keyboard commands, you must first press and release the **left** Control Key (**<Ctrl>**). Pressing and releasing **<Ctrl>** activates ServeView to look for commands from the keyboard. You have two seconds between each keystroke to enter a valid command, otherwise ServeView aborts the command.

NOTE: When entering numeric commands, use only the numeric keys located at the top of your keyboard. Numbers entered from the numeric keypad to the right will **not** be recognized as valid commands.

NOTE: ServeView commands ignore case. All command letters are shown capitalized for clarity only. Do not use the shift key during the command.

Keyboard CPU selection

To select a CPU from your keyboard, press and release your keyboard's **left** Control Key (**<Ctrl>**), then type in the CPU number. Remember to use the numbers located at the top of your keyboard. **Do not** use the numeric keypad.

1–9 CPUs: ServeView will immediately switch to the desired CPU when you enter the one-digit number.

10–99 CPUs: ServeView will immediately switch to the desired CPU when you enter the two-digit number. For single-digit CPUs, you can enter the number with a leading zero (such as 01) or enter the single-digit number and press **<Enter>**. If you enter only one digit, and do not follow it with **<Enter>**, ServeView will wait two seconds for you to enter another digit, then, if no additional number is entered, will switch immediately to the single-digit CPU.

100–256 CPUs: ServeView will immediately switch to the desired CPU when you enter the three-digit number. For single- and double-digit CPUs, you can enter the number with one or two leading zeros (such as 027, 001), or enter the single- or double-digit number and press **<Enter>**. As noted above, ServeView will wait two seconds for a second or third number to be entered, then will switch to the CPU number entered.

Going to the next or previous CPU

From the keyboard you can toggle forward or backward through the CPUs by selecting either the Next or Previous CPU. To go to the Next CPU, press and release the **left** Control Key (<Ctrl>), then press the "+/= " (plus) key. To go to the Previous CPU, press and release <Ctrl>, then press the "-/_ " (minus) key. The command is not case-sensitive. Use the keys at the top of your keyboard, **not** those on the numeric pad.

Scan mode commands

To enable scanning from the keyboard, press and release the **left** Control Key (<Ctrl>), then type "S". ServeView will begin scanning sequentially from its current CPU through the remaining CPUs, then begin again at CPU 1. The time between switching to the next CPU is the scan time interval (see below) and is programmable from 1-15 seconds. To stop scanning, press and release <Ctrl>, then type "X". Scanning is also disabled by entering a CPU selection command.

Scan time interval command

The scan time interval command sets the time, in seconds, that ServeView will pause at each of the CPUs when scanning. The default setting is 5 seconds. To set another interval, press and release the **left** Control Key, type "T", enter the new scan time interval (in seconds), and press <Enter>. Remember to use the upper numeric keys, **not** the numeric keypad to the right. Follow with the Keep command to save the setting.

Setting CPU keyboard and mouse types

Each type of keyboard and mouse interface used on each CPU must be specified. This can be done through the keyboard or front panel display. Apple and Sun computers are very straightforward, since their keyboard and mouse interfaces are specific and do not vary from model to model. PCs on the other hand can have three keyboard modes and several types of mouse interfaces. Many Unix-style computers, such as the IBM RS/6000, DEC alpha, and certain Silicon Graphics computers use a PC keyboard interface. Each CPU attached to the ServeView can be configured for either Apple, Sun, or any mix of PC keyboard modes and PC mouse interfaces. Mixing an Apple or Sun keyboard or mouse with a PC keyboard or mouse on a single CPU is not supported.

Computers which use PC-style keyboards have 3 keyboard modes. Mode 1 is used primarily by certain models of IBM PS/2s. Mode 2 is the most common mode used by the vast majority of PCs. It is also the power-up state of all 101-type and PS/2 keyboards. Mode 3 is used by the IBM RS/6000, DEC Alpha, certain Silicon Graphics computers, and other UNIX computers.

For computers with PC keyboard interfaces, the keyboard mode is set by commands from the CPU when it boots up, which is detected by ServeView. Therefore the ServeView learns which CPU uses which mode. If the PC has already booted and is then connected, ServeView cannot detect the PC's keyboard mode and uses the setting stored in ServeView's non-volatile memory.

Most PCs which are mode 2 do not send a mode 2 command, since that is the keyboard's power-on mode. If a CPU was previously set to mode 1 or 3 and you connect a mode 2 PC to that CPU, it probably will not communicate correctly and you will need to configure it correctly.

PCs have several types of mouse interfaces as well. There is PS/2, Microsoft serial, 8 bit serial, and Mouse Systems. These must be set for each CPU. The PS/2 mouse interface uses a 6 pin mini-din connector and is similar to the keyboard interface. Its advantage is that when present, it is integrated on to the CPU's mother board and does not require using a serial interface which can be used to connect another device instead. The serial mice all use an RS232 connection with either a 9 or 25 pin D-connector. The Microsoft serial mouse has an RS232 interface with a 3 byte, 1200 baud, 7 bit protocol. The 8 bit serial mouse also has an RS232 interface, but has a 3 byte, 1200 baud, 8 bit protocol. The Mouse Systems mouse is yet another RS232 mouse which has a 5 byte, 1200 baud, 8 bit protocol. The Microsoft interface does not support a third button, the other three do. Many of the lower cost mice have a switch on them to choose between Microsoft and Mouse Systems mice.

Mode command

The mode command can be issued to change the keyboard mode for each CPU and can be saved in non-volatile memory with the Keep command. The Apple and Sun keyboard and mouse are changed with a single mode command. To change a PC's keyboard and mouse requires entering the mode command twice. Changing from Apple or Sun to a PC keyboard will set the PC mouse interface to PS/2. Changing to a PC mouse when previously set to Apple or Sun will be ignored.

Refer to the table below to use the proper mode value to be used in the mode command. To issue the Mode command first switch to the CPU on which you wish to change the mode. Then press and release the **left** Control Key, type '**M**', and enter the mode number "1" – "9" followed by **<Enter>**. Remember to use the alpha-numeric keys, **not** the numeric keypad, to enter the mode number. Follow with the Keep command. The mode is changed on your currently selected CPU, even if you are connected through an expansion ServeView. To change the mode on another CPU, you must first switch to that CPU and then issue the mode command.

Mode value	Function
1	PC keyboard mode 1 (Certain models IBM PS/2)
2	PC keyboard mode 2 (Most PCs)
3	PC keyboard mode 3 (RS/6000, Alpha, SGI)
4	Apple keyboard and mouse
5	Sun keyboard and mouse
6	PS/2 mouse
7	MicroSoft serial mouse
8	Other 8 bit serial mouse
9	PC mouse serial mouse

Name command

The name command provides a convenient way of entering the CPU names that are displayed on the front panel. While changing the names can be done from the front panel, the way described here is much easier. This method requires that you be at some sort of operating system prompt or application where characters which are typed are displayed immediately, such as a word processor or text editor. For a PC this could be the DOS or OS/2 command prompt, DOS edit, or any word processor or text editor. For a Macintosh this could be Teach text, Simple text, or any word processor or text editor. For a Sun, this could be the command tool prompt, boot prompt, or any word processor or text editor.

To use the name command press and release the **left** Control key, then hit the **F12** key. On your computer you will see the following or similar message:

```
Name 1 = CPU 1          Change Y/N/Esc?
```

The text displayed shows you the name of the current CPU to which you are connected. This example implies you were switched to port 1 and its default name has not been changed from "CPU 1".

To change the name enter "Y", the text will backspace over the name and leave you with:

```
Name 1 =
```

You can type in the new name terminated with the enter key or hit escape to cancel the name command. You can use the backspace key to correct any errors as you type. You can use the shift key to change the case of letters or to enter shifted characters. Any character in the normal ascii character set is available.

Once you hit enter the display will backspace over what you have typed and display what it thinks you typed, similar to the following:

```
Name 1 = Mail server #1 Change Y/N/Esc?
```

The name is automatically stored in flash configuration memory. If you agree with what it displays you can hit the escape key to terminate the name command, hit "Y" to re-enter the name, or hit "N" to see the name of the next sequential port. In this manner you can view and change names on any CPU that you wish to. When changing the name, if you were switched to that port, the front panel will be updated immediately upon hitting the enter key. You can hit escape at any time to abort the name command. The name command is not automatically exited, so be sure to hit escape when finished configuring the names.

Maximum ports command

This command tells the ServeView system the total number of ports connected. This enables expansion and ensures that the scan function will cycle correctly. Although this command is used primarily when chaining slave units to a master, it can also be used to enable less than the full amount of ports in a ServeView unit. To issue the command press and release the **left** Control Key, type "**P**", enter the total number of ports (from 1 to 3 digits), and press **<Enter>**. Follow with the Keep command to save the new setting in the unit's non-volatile memory. This command never needs to be used on a slave unit since the master controls access to its CPUs.

Width command

The width command determines how many CPUs are on an expansion unit, so that the ServeView knows which CPU corresponds with which select number. For example, if we choose to connect 8 port expansion units to a master ServeView the width would be set to 8. Thus CPUs 1-8 would be expected to be on an expansion unit on port one of the ServeView. CPUs 9-16 would be expected to be on an expansion unit on port two of the ServeView and so on.

This feature allows flexibility in how CPUs are clustered together. To issue the command press and release the **left** Control Key, type "**W**", enter the width value, and press **<Enter>**.

Units command

The units commands is used to configure whether a CPU is on an expansion unit or on the master ServeView itself. You specify the total number of expansion units. To issue the command press and release the **left** Control Key, type "**U**", enter the units value, and press **<Enter>**.

The factory default is 0, which causes the ServeView to calculate where a CPU is based on the maximum port and width settings. It will fill expansion units completely and any residual ports left over will be on the matrix expander unit itself.

For example, maximum ports is set to 23 and width is set to 8. Units set to 2 will cause CPU 17 to be port 3 on the matrix expander unit itself. Units set to 3 will cause CPU 17 to be port 1 on the third expansion unit. Units set to 0 will be the same as setting units to 2, since it can not a fill a third expansion unit completely, it would need 24 ports to do so.

Screen blanking command

This feature reduces the wear on your screen and provide security for your system by blanking the screen when there has been no keyboard or mouse activity for a specified length of time. To set the screen blank interval time, press and release the **left** Control Key, type "**V**", enter the interval time, in seconds (0-999), and press **<Enter>** (an interval time of 0 disables this screen blank feature). Remember to use the upper numeric keys, **not** the numeric keypad to the right. Follow with the Keep command to save the new setting in the unit's non-volatile memory.

When in the Screen Blank state, all ServeView Select LEDs will be off and the front panel will show a status of video off. To restore the video screen, press any key or move the mouse. To restore the front panel, hit any key on the front panel. To disable the screen blank feature, press and release the **left** Control Key, type "**V**", enter "**0**" as the interval time, and press **<Enter>**. Follow with the Keep command if desired to save it. Keep command

The Keep command saves the current state of the ServeView's custom settings. These settings are scan interval, each CPU's mode and keyboard LED state, maximum ports, the screen blank interval, and the keyboard typematic value. These settings are saved in non-volatile memory and become the power-up settings. To enter the command, press and release the **left** Control Key, then type "**K**".

Typematic value command

ServeView can be configured to control the keyboard typematic rate and delay. This setting is used to adjust the user preference of the way the keyboard acts when holding a key down to repeat the key, such as when moving a cursor across a line. The rate is the speed at which the keys are sent in keys/second. The delay is the wait time in milliseconds after the key is initially pressed, before additional keystrokes are sent. To issue the command press and release the **left** Control key, then type "A", then enter the 1-3 digit decimal *typematic value* followed by <Enter>. The *typematic value* is defined as shown below. Use the keep command to save the value.

The *typematic value* to be used is determined from the following tables using the equation: **Typematic Value = Rate value + Delay Value**. Pick the desired rate in keys/sec. (32 choices) and delay in milliseconds (4 choices) from the tables below. Add the values to the right of the desired settings. For example to use a Rate of 16.0 keys/sec. and a 500 millisecond delay, the typematic value = 7 + 32 = 39, so to set this value, type <Ctrl> A 39 <Enter>.

Table 4. Typematic rate

Rate Keys/sec	Rate Value	Rate Keys/sec	Rate Value	Rate Keys/sec	Rate Value	Rate Keys/sec	Rate Value
30.0	0	15.0	8	7.5	16	3.7	24
26.7	1	13.3	9	6.7	17	3.3	25
24.0	2	12.0	10	6.0	18	3.0	26
21.8	3	10.9	11	5.5	19	2.7	27
20.0	4	10.0	12	5.0	20	2.5	28
18.5	5	9.2	13	4.6	21	2.3	29
17.1	6	8.6	14	4.3	22	2.1	30
16.0	7	8.0	15	4.0	23	2.0	31

Table 5. Typematic delay

Delay in millisecc.	Delay value	Delay in millisecc.	Delay value	Delay in millisecc.	Delay value	Delay in millisecc.	Delay value
250	0	500	32	750	64	1000	96

Reset command

This command is used to re-boot the mouse and keyboard without removing power from the ServeView. This is most useful to reset a PS/2 mouse which has been unplugged and plugged back in. This command is also useful to enable mouse data to be sent to a CPU which has not enabled the mouse. This may be the case if the ServeView was not connected or powered off after a CPU was booted up. To issue the command, press and release the **left** Control Key, then type "R". This command should not be issued to a CPU which has a PS/2 mouse connected, but no mouse driver is loaded, since many CPUs will crash if you send them unexpected mouse data.

Null command

This command is used to re-synchronize an out-of-sync PS/2 mouse. Such a condition can result due to transients, spurious power-up effects, or plugging and unplugging of cables with live equipment. The command may need to be entered once or twice, depending if the mouse is out-of-sync by one or two bytes. Microsoft mouse driver version 9.01 corrects this inadequacy of previous drivers and renders this command unnecessary. At publishing time, it is believed this mouse driver is only available for DOS and Windows. To issue the command, press and release the **left** Control Key, then type "N".

ROM Identification command

This command is used to identify the revision level of ServeView firmware currently installed. Before entering this command, your currently selected CPU should be at a command prompt, so that when the ServeView sends the ROM revision level that the result will be displayed. To issue the command, press and release the **left** Control Key, then type "I". ServeView will send back its current firmware revision level, in the format *majorlevel.minorlevel*.

OPERATION: FRONT PANEL

Through the front panel you can do almost everything that can be done from the keyboard. The front panel is convenient for configuring and viewing all configuration items. **Please note that the front panel display will turn itself off after 2 hours of operation to protect its phosphors from having a pattern burned into it. Hitting any key on the keypad will restore its operation.**

Power up display

Upon power up the display immediately shows the revision of the Serveview firmware. As the Serveview performs its power-up diagnostics, it displays a diamond for each step it successfully completes, then shows OK once all tests have completed successfully. If there are failures it will show a message on display line 2. See Appendix E, page 39 for an explanation of these messages.

```
REVISION A1.5 ♦♦♦♦OK
```

Normal display

Once the power up diagnostics have been completed successfully, the display shows the name and number of CPU 1 and its power status. The status line may show 'normal' or 'no CPU power'. In this example the default name of 'CPU 1' is shown on the left of line 1 and the CPU number on the right.

```
CPU 1           1  
Status> normal
```

Switching CPUs from the front panel

To switch CPUs from the front panel, use the up and down arrows to scroll through the CPUs. This will switch to the CPUs in sequence. You can also use the numeric keypad to enter the port number directly. Use the rules described on page 11 to determine how many digits to enter. If you have maximum ports set more than 9, as you enter the port number the display will show the number being entered on the top right of the display. You can use either the left or right arrow key as a backspace. As when entering from the keyboard, you have two seconds between keystrokes to enter a number.

Using review mode to switch CPUs

You can use the left and right arrow keys to cycle through the CPUs by name and number before switching to one. Hitting the right arrow key will show you the name of the next sequential CPU on the bottom line of the display. Hitting

the left arrow will show you the name of the previous CPU. Hitting enter will switch to the port you have scrolled to. Hitting any other key returns the display to normal mode.

Display blanking

After two hours of no keypad activity, the front panel display is turned off to protect the display phosphors. Hit any key to restore the display.

Keypad repeat

The arrow keys on the front panel keypad have a repeat function. If you hold in the key it will repeat and after two repeats it will speed up. This is useful when you want to scroll through a large number of items, such as using review mode with many CPUs or configuring the CPU names from the front panel.

Configuration menu: Scan mode

Hitting the MENU key causes you to enter the configuration mode. The first item to be displayed is scan mode.

```
Scan mode> Off  
Enter•select ↑↓•item
```

The bottom line is common to all menu items. Using the up and down arrows on the keypad will scroll through the possible items that can be accessed. Using the enter key will allow you to modify the item.

In the case of hitting enter at scan mode you will see the following display:

```
Scan mode> Off  
Choose ↑↓ Off
```

You can use the up and down arrows to scroll between off or on. Hit enter to select your choice. The scan mode if on will not start until leaving the configuration menu.

Configuration menu: Scan time

The next item on the main menu is the scan time. It looks like this:

```
Scan time> 5  
Enter•select ↑↓•item
```

Hitting enter will give the following display, where you may enter a new value between 1 and 999.

```
Scan time> 5
New value(1-999) ■
```

The ■ is a flashing cursor which directs you to enter a new value using the numeric keys followed by enter. The values (1-999) in parentheses tell you the range of values that you may enter. You can hit the MENU key at any time to abort the entry. If a new value is entered than the value is displayed on the top line of the previous display and you return to the main menu where you may continue to access menu items.

Configuration menu: Power on scan

The next item on the menu is the power on scan. This setting determines if the ServeView will go into scan mode at the previously specified time interval when it is first powered on. Use the up and down arrows to choose between yes or no.

```
Power on scan> No
Choose ↑↓ No
```

Configuration menu: Keyboard

The next item after power on scans is:

```
Keyboard> PC
Enter•select ↑↓•item
```

This item allows you to enter the type of keyboard being used. If you hit enter at this point you will see the following display:

```
Keyboard> PC
Choose ↑↓ PC
```

This item is directing you to use the up and down arrow keys to scroll through a list of choices. In this case the list of items is PC, Mac, and Sun. As with the maximum ports, if a new value is entered than the value is displayed on the top line of the previous display and you may continue to access menu items. Hitting enter also has the effect of resetting the keyboard attached.

Configuration menu: Mouse

The next menu is to change the mouse.

```
Mouse>PS/2
Enter•select ↑↓•item
```

If you have chosen Mac or Sun in the previous step this item will not appear. The menu works similar to the keyboard menu described above.

Your choices for mouse are PS/2, Microsoft serial, other 8-bit, and Mouse Systems. Please refer to page 14 for more information about these choices. Hitting enter also has the effect of resetting the mouse attached.

Configuration menu: CPU keyboard/mouse

The next menu item allows you to change the keyboard and mouse for each CPU. It looks like this:

```
CPU keyboard/mouse
Enter•select ↑↓•item
```

Hitting enter at this item will give the following display:

```
Choose ↑↓←→ CPU> 1
KB>PC2 MS>PS/2
```

The way this menu works is different than the previous two. You are directed that you can also use the left and right arrow keys, which allows you to move between the CPU, KB(keyboard) and MS(mouse) fields. Once at a field you can use the up and down arrow keys to scroll through the possible selections.

The choices for CPU is from 1 through the maximum number of ports. The choices for KB are PC1, PC2, PC3, Mac, and Sun. PC1, PC2, and PC3 refer to PC keyboards mode 1, 2, and 3. If you enter Mac or Sun for the keyboard you can not change the mouse setting. The choices for mouse are PS/2, Microsoft serial, other 8-bit serial, and serial PC Mouse. Please refer to page 14 for more information about the choices for keyboard and mouse. Once the keyboard and mouse are selected you can hit enter at either field and that will save the setting. The cursor then goes back to the CPU field. Hitting the menu key will bring you back to the main menu.

Configuration menu: CPU names

The next item on the menu is called CPU names and allows you to change the name of a CPU displayed on the front panel. It looks like this:

```
CPU names
Enter•select ↑↓•item
```

Hitting enter at this item will give the following display:

```
Choose ↑↓← → CPU> 1
NameCPU 1
```

The method of navigating through this menu is similar to the CPU keyboard and mouse menu described above. When first entering this menu you are pointing at the name of the currently connected CPU. Use the up and down arrows to cycle through the CPUs. To change the name of a CPU use the left and right arrows to go to the character of the CPU name that you want to change. The cursor changes from a flashing block to an underline. Use the up and down arrows to cycle through the ascii characters. Hit enter while in the name field (cursor showing as underline) to save the name. The cursor then goes back to the CPU field. Hitting the menu key will bring you back to the main menu.

Configuration menu: Maximum ports

The next item to be displayed is the maximum number of ports in the system.

```
Maximum ports> 16
Enter•select ↑↓•item
```

In the case of hitting enter at maximum ports you will see the following display:

```
Maximum ports> 16
New value(2-256) ■
```

Enter the new value of the maximum ports followed by enter. This menu entry works similarly to all menu items where a numeric value is required.

Configuration menu: Expansion width

The next item on the menu is the expansion width. The width setting determines how many CPUs are on an expansion unit. Refer to page 16 for more information on the width. This menu works similar to others where a numeric value is entered.

```
Expansion width> 16
New value(1-16) ■
```

Configuration menu: Expansion units

The next item on the menu is the expansion units. The units setting is used to configure whether a CPU is on an expansion unit or on the master ServeView itself. Refer to page 16 for more information on the units. This menu works similar to others where a numeric value is entered.

```
Expansion units> 0
New value(1-16) ■
```

Configuration menu: Video blank time

The next item on the menu is the video blank time. This setting determines after what interval of no keyboard or mouse activity will the monitor be blanked. This menu works similar to others where a numeric value is entered. When the monitor is blanked the front panel will show a status of video off.

```
Video blank time> 0
New value(1-999) ■
```

Configuration menu: Keyboard typematic rate

The next item on the menu is the KB typematic rate. This setting determines how fast a key repeats when a key is held down. This item is not available for Sun or Mac keyboards. This menu works similar to others where a numeric value is entered.

```
KB rate keys/sec> 20
New value(2-30) ■
```


Configuration menu: Keyboard delay

The next item on the menu is the KB delay. This setting determines how long after pressing a key will it start to repeat. This item is not available for Sun or Mac keyboards. This menu works similar to others where a choice is scrolled to. The choices are slow (1 second), medium (750 msec.), fast (500 msec), and fastest (250 msec.).

```
KB delay> Fast
Enter•select ↑↓item
```

Leaving the configuration menu

To leave the configuration menu hit the menu key while in the configuration menu. If you have not changed any settings you are returned to the normal display mode of showing currently connected CPU and status. If you have changed a setting other than the scan mode you will see the following display:

```
Save configuration
Enter choice ↑↓ Yes
```

Hit enter to save the new settings in flash configuration memory or use the up and down arrow keys to change to no and hit enter, if you don't want to save the new settings. The settings are still active, but are lost if the unit is powered off.

MISCELLANEOUS OPERATION

Video distance capability

The limitation on driving distance is usually due to the quality of the video. The table below shows the distances, resolution, and quality of video that can be expected. The table uses a letter which shows the cable type and a number which refers to the quality of the video, as described below. This table applies to the base unit without chaining. There will be some degradation when ServeViews are chained together. Rose Electronics does not support systems where the video quality is 1 or 2. There are further capabilities not listed here in order to send the higher resolution video longer distances. Please contact Rose Electronics technical support for more details.

- N – Normal cabling
- C – Coax cabling
- 4 – Perfect or near-perfect; Unable to easily detect defects in screen
- 3 – Very acceptable; Images clear, small reflections around lettering depending upon color; if you examine the screen closely you will find defects
- 2 – Acceptable; Slightly fuzzy images; readable text, acceptable for casual use, but not for prolonged viewing as this will cause eye fatigue
- 1 – Unusable; images smeared; text not easily readable

Table 6. Video distance capability

	5'	10'	20'	30'	50'	75'	100'	125'	150'	200'
640X480 60Hz refresh	N4 C4	N4 C4	N4 C4	N4 C4	C4	C4	C4	C4	C3	C3
640X480 72-75Hz refresh	N4 C4	N4 C4	N4 C4	N3 C4	C4	C4	C4	C3	C3	C3
800X600 non-interlaced	N4 C4	N4 C4	N3 C4	N3 C4	C4	C4	C4	C3	C3	C3
1024X768 interlaced	N4 C4	N3 C4	N3 C4	N3 C4	C4	C4	C3	C3	C3	C3
1024X768 non-interlaced	N4 C4	N3 C4	N3 C4	N3 C4	C4	C3	C3	C3	C3	
1280X1024 interlaced	N3 C4	C4	C3	C3	C3	C3				
1280X1024 non-interlaced	N3 C4	C4	C3	C3						

Mapping PC keyboards to Macintosh CPUs

A PC keyboard is missing 4 keys that an Apple keyboard has. They are the left and right Apple keys, the power key, and the numeric pad = key. A provision has been made to map the left and right control and alt keys on a PC keyboard to make up for this loss, so these functions are available.

Table 7. PC keyboard to Apple keyboard map

PC keyboard key	Apple function
Left control	Control key
Left alt	Apple/cloverleaf key
Right control	Power key
Right alt	Alt key

It may be awkward though if you are used to using a certain combination of left or right keys.

Power interruption to the ServeView

Certain keyboards are sensitive to rapid cycling of the power. Since power to the keyboard is provided from the ServeView, you should not interrupt power to the ServeView for less than three seconds. The ServeView is immune to such transients, but the keyboard may not reset correctly.

Mouse sensitivity

All three platforms of PC, Apple, and Sun have settings to adjust the mouse sensitivity. To optimize the movement of the mouse between systems, you should adjust the sensitivity according to individual preference. How you adjust the sensitivity is usually done from some type of control panel and varies depending upon the operating system.

Using the RS232 port

For your convenience, a computer or terminal can be connected to the RS232 serial port on the unit's rear panel. This allows you to send switching commands from your computer's serial port. You will need standard serial cabling with 6-pin jacks, and the appropriate adapter (either DB-25 female to RJ11 female or DB-9 female to RJ11 female, depending upon your equipment). These adapters are available where you purchased your ServeView.

1. Insert the RJ11 cable between the RS232 serial port on ServeView's rear panel, and the RJ11 female connector of the appropriate adapter.
2. Connect the adapter to one of the computer's (or terminal's) COM ports.
3. Set your computer at 9600 baud, no parity, 8 bits, 1 stop-bit.

4. To switch ports, enter the 1-3 digit port number followed by enter: **xxx<Enter>**.

WARNING: Serial cabling in excess of 50 feet should be routed with caution. The maximum cable length depends upon the construction of the cable and its routing. For extended runs, shielded cable should be used. Avoid routing near fluorescent lights, air conditioning compressors, or machines that may create electrical noise. If you experience data error, use shorter cables.

The RS232 port is also used to upgrade the unit's flash program to support new features or fix problems. See the flash upgrade procedure for more details.

Rackmount kit

The rackmount kit is an optional item that can be ordered at any time. Your ServeView unit is pre-drilled to accept the rack-mount mounting screws. There are two sizes available 19" by 5.25" and 24" by 5.25".

Slave unit operation and configuration

When two units are daisy chained together, one unit becomes a slave unit. This unit will have its front keypad disabled. When no CPU attached to the slave is selected, the front panel shows a status of not selected.

Be careful when configuring the CPU type. All slave units should be attached and powered up, otherwise they will not receive the CPU type information and configuration will not be complete. Do not configure a unit separately and then connect it to a master. The master determines the CPU type.

When configuring the CPU type from the front panel, by examining the CPU type and going to the next port with the up and down arrows, you automatically load the CPU type into a slave. This feature is useful to configure a slave which has not been previously configured, but the master has been configured. Change at least one item anywhere in the configuration menu to activate the unit to ask you to save the configuration. You can change any item to the same value, if you want to leave the configuration unchanged.

UPGRADING THE FLASH MEMORY

The ServeView has flash memory, which means its firmware may be re-loaded, to support new features or fix any problems in its operation. You have a choice of two baud rates at which to load the flash file. Both require an 8 bit, no parity protocol. To perform the flash loading procedure, you must press one of the following keys at power-on of the ServeView:

Flash load at **57600** baud **Menu** key pressed on power up

Flash load at **9600** baud **1** key pressed on power up

The display should show:

```
Waiting for file
at xxxxx baud
```

Then the proper file must be sent to the serial port with the proper cable, see Appendix F. From a PC use COPY filename com1 or com2. From other CPUs use a command which copies data out the serial port.

If the file is correct as it is being loaded you will see the following message

```
Receiving file
◆◆◆◆
```

The ◆ is file receive indicator that accumulates as the file is sent. Once the file is received successfully the following message will appear:

```
Receive successful
Hit enter to program
```

Hitting enter will cause the following message to appear

```
Programming flash
◆◆◆◆
```

The ◆ is a flash program indicator that accumulates as the flash is programmed. Once programming is complete the following message will appear:

```
Verifying flash
◆◆◆◆
```

The ◆ is a flash verify indicator that accumulates as the flash is verified. If programming and verifying is successful the following message appears:

```
Verify successful
Hit enter to boot
```

Hitting enter will cause the box to power up in normal operation.

Observe the new revision number as it powers up to verify that the correct file was loaded.

You may receive any of the following error messages when receiving the file:

```
Checksum error
Hit enter to proceed
```

```
Record error
Hit enter to proceed
```

```
Data error
Hit enter to proceed
```

If any of these errors occur, it means the RS232 cable is bad, the RS232 protocol is not configured correctly, or there are bad transmit or receive levels, or there are hardware problems on either the receiver or transmitter end. Only two wires are necessary to the ServeView, receive and ground. Hit enter to continue and you get the following message.

```
Receive failed
Try again ? Yes
```

You can hit the up/down arrows to change the yes to no. If you enter with yes, you go back to the beginning to receive a file. If you enter with no the box proceeds with its normal power up operation.

If verifying fails, you will get the following message:

```
Verify failed
Hit enter to program
```

At this point you can either hit enter and try again or power down the box and try over. It is possible that depending upon what was loaded that the kernel(flash loading utility), program, or configuration data is corrupt. If this error occurs it means either the flash is bad or there is a hardware problem in the box. Normally if this message is received the box should be serviced.

KEYBOARD COMMAND SUMMARY

To enter any keyboard command, first press and release the **left** Control Key, represented by **<Ctrl>**. Then enter the command followed by any parameters you wish to specify, for example the CPU number.

Letter commands are not case sensitive, and are shown in upper case for clarity only.

Do not use the numeric keypad to enter any commands.

All ServeView commands use a two second time-out between characters, to abort the command. This is a feature that restores the keyboard to normal operation, so the keyboard is not put it into a command mode which might lock it up from normal operation.

The **<Ctrl>** character is always passed through to the CPU. The command characters and command operands, however, are absorbed by the ServeView and not sent to the CPU.

Table 8. Keyboard command summary

Command	Key Sequence	Description
Go to selected CPU	<Ctrl> xxx where "xxx" is 1-3 digit CPU number	Connects your common keyboard, monitor, and mouse to the selected CPU. Only a single digit is necessary when using less than 9 CPUs.
Go to next CPU	<Ctrl> +	Selects the next sequential CPU.
Go to previous port	<Ctrl> -	Selects the previous sequential CPU.
Scan On	<Ctrl> S	Turns Scan mode on, causing ServeView to start scanning sequentially from the current CPU through the remaining CPUs and beginning again at CPU 1.
Scan Off	<Ctrl> X	Turns Scan mode off. Note: Scan can also be stopped by entering a CPU selection command.
Scan time interval	<Ctrl> T xx <Enter> where "xx" is time in seconds from 1-999 seconds	Sets the time, in seconds, that ServeView will pause at each CPU when scanning. Note: Follow with Keep command.

Set keyboard mode	Select CPU, then enter command: <Ctrl> M x <Enter> where "x" is 1-9	Sets ServeView CPU's keyboard and mouse mode. Note: Follow with Keep command.
Set maximum ports	<Ctrl> P xxx <Enter> where "xxx" is a 1-3 digit number from 2 to 256 signifying total number of ports	Sets the total number of ports to be used. Used when chaining slave units to a master, or when not all of the ports in a unit will be used. Note: Follow with Keep command.
Configure units setting	<Ctrl> U xx <Enter> where "xx" is 1-2 digit number	Configures how many expansion units are attached. Factory default is 0, which means unit calculates expansion units automatically.
Configure width setting	<Ctrl> W xx <Enter> where "xx" is 1-2 digit number	Configures how many CPUs are on an expansion unit. Factory default is 16.
Set screen blank time interval	<Ctrl> V xxx <Enter> where "xxx" is time in seconds from 0 to 999 seconds	Sets time in seconds with no keyboard or mouse activity after which video will be turned off. Reactivated when any key is pressed or mouse is moved. Note: Follow with Keep command.
Set typematic value	<Ctrl> A xxx <Enter> where "xxx" is a 1-3 digit number from 0 to 127 indicating KB typematic value	Sets power-on keyboard typematic action which is controlled by the ServeView. This can be used to adjust the key stroke rate and delay to the user preferred setting. See <i>Tables 4 and 5</i> for how the typematic value is determined. Note: Follow with Keep command.
Reset command	<Ctrl> R	Resets and enables mouse and keyboard, enables PS/2 mouse on currently selected CPU.
Send null to mouse	<Ctrl> N	Used to re-synchronize PS/2 mouse which has gotten out-of-sync.
Identify ROM version	<Ctrl> I	Identifies ROM version, CPU must be at some sort of command prompt to receive value.
Keep settings	<Ctrl> K	Tells ServeView to save custom settings.

1. CPU does not boot, keyboard error received

CPU does not boot, mouse error received

- a. Cable is loose, reseal cable and on PC hit F1 to continue or reboot computer.
- b. Wrong cable plugged in, keyboard and mouse cables reversed.
- c. Cable is defective, try using cable from another CPU. If problem goes away cable is defective.
- d. Port on ServeView is defective, try using another port on ServeView. If problem goes away port is defective.
- e. Port on CPU is defective, try plugging in keyboard or mouse directly if problem remains CPU port is defective. If CPU power status LED not lit, fuse on motherboard may be blown.
- f. CPU keyboard and mouse not configured, use mode command or front panel to configure.

2. Mouse driver does not load.

- a. If PS/2 type mouse, CPU must be connected to ServeView or mouse at boot-up time in order for mouse to be recognized by CPU. Reboot computer with ServeView powered on and cable attached.
- b. If RS-232 type mouse, make sure right COM port is being used and syntax of mouse driver is correct to search for the correct port.
- c. CPU keyboard and mouse not configured, use mode command or front panel to configure.

3. Can't switch CPUs from keyboard

- a. CPU keyboard and mouse not configured, use mode command or front panel to configure.
- b. Keyboard not configured, use front panel to configure.
- c. Power to ServeView was removed for less than three seconds possibly causing keyboard to lock up. Disconnect keyboard and plug it back in.
- d. For PCs, the mode of the keyboard does not match that of the CPU. Issue the mode command, usually 1 for IBM PS/2s, 3 for R/S6000 and DEC alpha, and 2 for all others. The default setting of the ServeView is mode 2. Sometimes an incorrect mode will confuse the CPU or keyboard and require re-booting the CPU or resetting the keyboard by unplugging and plugging it back in.
- e. If PS/2 type keyboard and mouse cables may be reversed.
- f. Not using left control. Using numeric keypad instead of keys on top row. Not releasing control key before typing in number. Waiting to long to enter CPU number. Using caps lock or shift key.

4. Wrong or missing characters from those typed

- a. The keyboard mode is incorrect. See *item 3c* above.

5. Mouse does not move

- a. Mouse not configured, use front panel to configure mouse.
- a. ServeView turned off after or not connected when CPU booted or application using mouse run. Exit and re-enter application using mouse or issue reset command.
- b. PS/2 mouse was not connected when ServeView powered up or has been disconnected and reconnected. Issue the reset command or re-configure the mouse from the front panel.

7. PS/2 mouse gets out of sync

- a. Cabling was disturbed during mouse movement. Issue the null command once or twice to re-sync the mouse. Get a later mouse driver which does not exhibit this problem, such as Microsoft rev 9.01.

8. Video fuzzy

- a. Cable too long or wrong type. Verify that resolution and distance match. See *Table 6 Video Distance Capability*. Upgrade cable if necessary.

9. Video not synchronized or wrong color

- a. Cable is loose, reseal cable.
- b. Monitor not capable of syncing to video selected, get a higher end monitor.
- c. Video source producing composite sync only and monitor doesn't accept composite sync. Change video source or monitor to be compatible with one another.
- b. Wrong CPU cable used. If you have a 9515, 9517, 9518, XGA mono or similar monitor you must use special cables or adapters. See previous section, *XGA video, Model 9515, 9517, 9518 monitors*.
- c. Cable is defective, try using cable from another CPU if problem goes away cable is defective.
- d. Port on ServeView is defective, try using another port on ServeView. If problem goes away port is defective.

10. Lower resolution video OK, but can't enter high resolution mode

- a. Driver has not been setup. Windows, OS/2, System 7, Unix or other driver has not been configured for this resolution. Configure the driver.

11. Slave unit does not switch

- a. Maximum ports command not issued.
- b. Width or units command not configured properly. Reconfigure them to match number of CPUs and how they are connected.

Maintenance and repair

The unit does not contain any user-serviceable parts inside. Any malfunction of the unit should be reported to a factory-authorized repair center for service. Any discrepancies in the operation of the unit according to this manual should be reported to the Technical Support Department of Rose Electronics.

Reset to factory default

To reset the ServeView to its factory default settings hold the → key in at power up which will eventually show the display:

Configuration reset
Hit enter to proceed

Hitting enter will cause one of the following messages to appear:

Reset successful
Hit enter to proceed

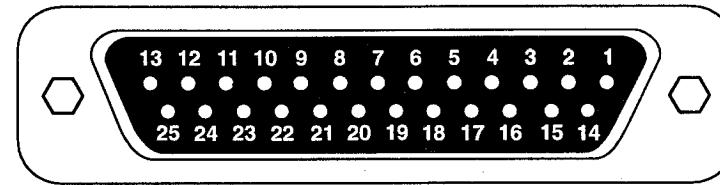
Reset failed
Hit enter to proceed

If the failure message shows the unit must be serviced, you can attempt to reset again by hitting the enter key. If the passing message shows hit the enter key to continue and the ServeView will go into normal operation

Technical support

If you cannot determine the nature of a problem, please call Rose Electronics and ask for Technical Support. If possible, call from a phone located near the unit—we may be able to solve your problem directly over the phone. If we cannot solve your problem, and determine that the fault is in the unit, we will issue a Return Authorization (RA) number that must appear on the outside of all returned products. The unit should be double-packed in the original container, insured, and shipped to the address given to you by our Technical Support representative.

To speak to a Technical Support representative, call (713) 933-7673 from 8:00–Noon and 1:00–5:00 Central Time, Monday through Friday.

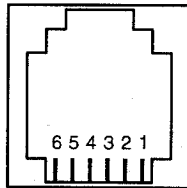


DB-25 Female Connector

Pinouts for ServeView
DB-25 Female Connectors

Pins	Numbered CPU Ports	MKM Port	Description
1	Ground	Ground	Analog Ground
2	Ground	Ground	Analog Ground
3	Ground	Ground	Analog Ground
4	Ground	Ground	Digital Ground
5	HSync-in	HSync-out	Video Control
6	VSync-in	VSync-out	Video Control
7	KBClk	KBClk	Keyboard Clock
8	KBData	KBData	Keyboard Data
9	MSClk	MSClk	Mouse Timing
10	MSData	MSData	Mouse Data
11	+5V-in	+5V-out	Power for LEDs, Peripherals
12	RS232-out	RS232-in	Serial Data
13	RS232-in	RS232-out	Serial Data
14	Red-in	Red-out	VGA Color
15	Green-in	Green-out	VGA Color
16	Blue-in	Blue-out	VGA Color
17	Red-in	Red-out	EGA Color
18	Green-in	Green-out	EGA Color
19	Blue-in	Blue-out	EGA Color
20	Intensity-in	Intensity-out	EGA Color/Mono
21	-V	-V	Unreg -12V
22	Ground	Ground	Digital Ground
23	Ground	Ground	Digital Ground
24	+V	+V	Unreg +12V
25	Reserved	Reserved	Reserved

Appendix B. RS232 pinout specifications



Pin	Signal Name	Acronym	I/O	Description
1	Data Set Ready	DSR	Input	Unused
2	Data Terminal Ready	DTR	Output	Pulled high with 1Kohm resistor
3	Transmit Data	TXD	Output	Serial data from port
4	Signal Ground	GND		DC ground reference
5	Receive Data	RXD	Input	Serial data to port
6	Request to Send	RTS	Output	Pulled high with 1Kohm resistor

Appendix C. Factory default settings

Setting	Default
Maximum ports	Same as physical number of ports
Keyboard Type	PC
Mouse type	PS/2
CPU keyboard - mouse	PC mode 2 - PS/2
CPU names	CPUxxx where xxx is port number
Scan Time Interval	5 seconds
Power on scan	Off
Video Blank Time Interval	0 (Off)
Typematic Value	43 (Rate=10.9 chars/sec, delay = 500 millisc.)
Expansion width	16
Expansion units	0
Caps/Numlock/Scroll	Numlock On

Appendix D. General specifications

SIZE	13.5"W x 5.25"H x 4.9" D
WEIGHT	12 lb.
ENVIRONMENTAL	0-55 C, 10-90% relative humidity non-condensing
INPUT POWER	117 VAC power adapter supplied 230 VAC optional
OUTPUT POWER	17VAC CT, 1.4A
POWER CONNECTOR	DIN5
CPU/MKM CONNECTORS	DB25 Female
CHASSIS	Fully shielded, black painted steel
CONTROLS	Power switch, 16 key keypad
INDICATORS	1 power LED, 4-16 select LED, 4-16 CPU LED 2 line by 20 line vacuum fluorescent display

Appendix E. Error messages

Any errors which occur during power up diagnostics are shown on the display. The following messages may be displayed

Display	Description / action
Kernel corrupted	Kernel portion of flash memory has wrong checksum. It may be possible to reload it using the load flash function. The unit halts and must be repaired or reloaded. Call for technical support.
Static ram bad	The static ram memory chip is bad. The unit halts and must be serviced. Call for technical support.
Program corrupted	Program portion of flash memory has wrong checksum. It may be possible to reload it using the load flash function. The unit halts and must be repaired or reloaded. Call for technical support.
Configuration bad	Configuration portion of flash memory has wrong checksum. It may be possible to reset it to factory default using the reset to default procedure on page 36. Call for technical support.
Reset failed Hit enter to proceed	Configuration portion of flash memory can not be reloaded. Hitting enter retries to program. If it is not successful, unit must be serviced. Call for technical support.

Appendix F. Cables and accessories

Description	Part Number
Expansion board	
4 port expansion board	SVE-4U
Monitor/Keyboard/Mouse Adapter Cables	
VGA-AT keyboard-Serial (9) mouse to DB-25M cable	CAB-VX509M1
EGA-AT keyboard-Serial (9) mouse to DB-25M cable	CAB-E0509M1
VGA-PS/2 keyboard-PS/2 mouse to DB-25M cable	CAB-VX0606M1
Mac keyboard/mouse to DB-25M cable	CAB-AV0400M1
Sun keyboard/mouse to DB-25M cable	CAB-SE0800M1
CPU Adapter Cables	
VGA-AT keyboard-Serial (9) mouse to DB-25M cable	CAB-VX0509Cxx*
EGA-AT keyboard-Serial (9) mouse to DB-25M cable	CAB-E0509Cxx*
VGA-PS/2 keyboard-PS/2 mouse to DB-25M cable	CAB-VX0606Cxx*
Mac CPU keyboard/mouse to DB-25M cable	CAB-AV0400Cxx*
Sun CPU keyboard/mouse to DB-25M cable	CAB-SE0800Cxx*
Coax VGA-AT keyboard-Serial (9) mouse to DB-25M cable	CAB-CX0509Cxx**
Coax VGA-PS/2 keyboard-PS/2 mouse to DB-25M cable	CAB-CX0606Cxx**
*Available in standard lengths of 5, 10, and 20 ft. Replace xx with desired length.	
**Available in 30, 50, 75, 100, 125, 150 and 200-foot lengths. Replace xx with desired length.	
Adapters	
EGA-to-VGA adapter for use with mixed VGA and EGA systems. Converts CPU's EGA DB-9 connector to VGA HD-15 for connection to VGA CPU Adapter Cable.	ACC-EV
4-conductor RJ11 cable for connecting optional computer or terminal to ServeView's RS232 serial port. Used with PC or AT adapter shown below	CAB-04RJxx*
25 pin female DB25 adapter for ServeView serial port	ACC-PCRX
9 pin female DB9 adapter for ServeView serial port	ACC-ATRX
Other Cables	
ServeView-to-ServeView Expansion Cable for connecting slave units to master ServeView for system expansion (1-foot long)	CAB-SMM1/SVE
Accessories	
Rackmount: Black anodized, for installation in 19-inch racks.	RM-SV16
Rackmount: Black anodized, for installation in 24-inch racks.	RM-SV16/24
Call for other rackmount arrangements.	

NOTE: ServeView is also available in 2 and 4 port units, also expandable up to 256 ports. Call our sales department for more details.