ULTRAVIEW™

Installation and Operation Manual

Make the Rose Connection

ROSE ELECTRONICS

ULTRAVIEW™

Installation and Operation Manual

PC   RS6000   APPLE   SUN   SGI   HP   DEC

TO MORE CPUs

ON-SCREEN DISPLAY

CPU select window
1 PC
2 RS 6000
3 Apple
4 Sun
5 SGI
6 HP
7 DEC
8 Remote
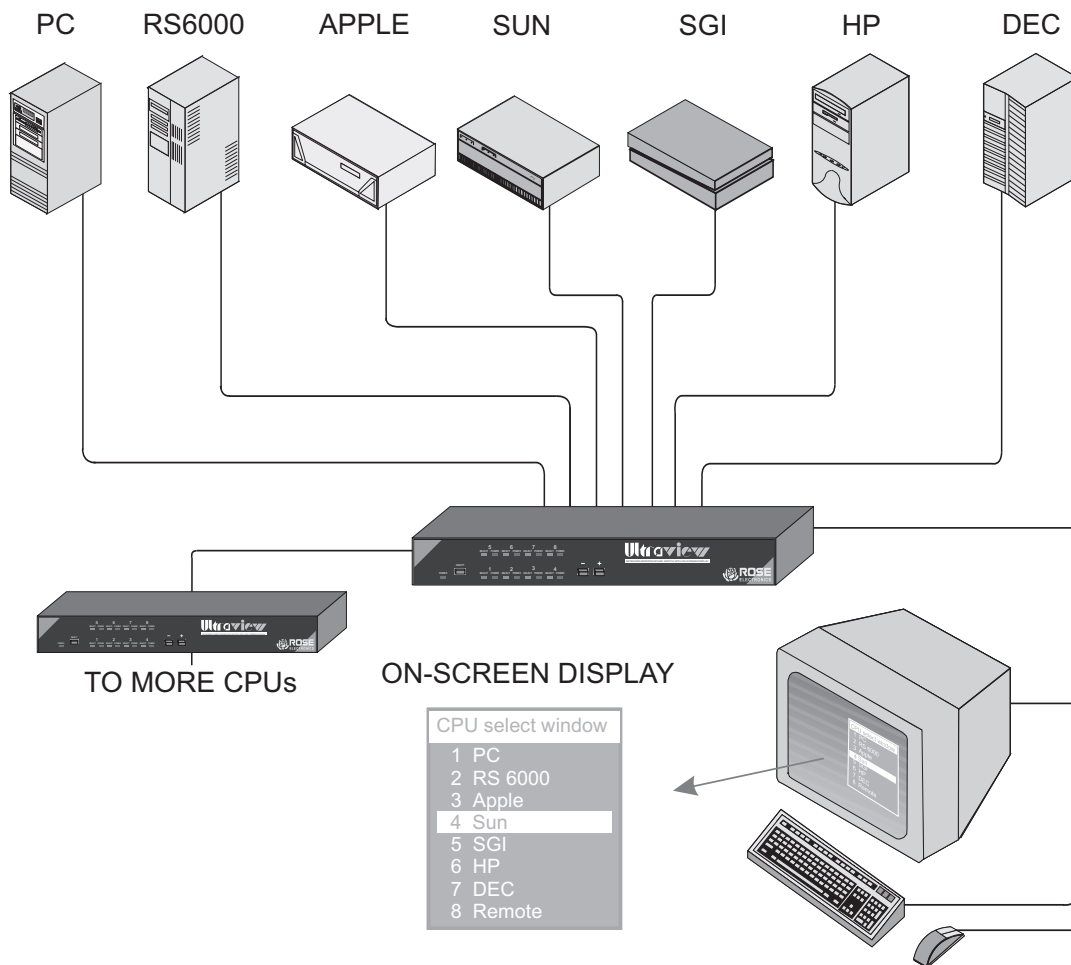
Make the Rose Connection

ROSE ELECTRONICS

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Rose Electronics Part # MAN-UV12

Printed in the United States of America ■ Revision 1.2

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INTRODUCTION

UltraView™ represents the latest state-of-the-art technology in keyboard-monitor-mouse switching. It features an on-screen display for configuration and switching computers. It is available in many different models, including UltraView and ServeView Plus with the OV-C overlay card installed.

The UltraView part number is Uxy-zU

where x is the platform support either E, P, S, A
E   For PC, Sun, Apple, and Unix computers
P   For PC and Unix computers
S   For Sun computers
A   For Apple computers

where y is the chassis size either M (mini), L (low), or H (high)
M   8.8" wide x 4.85" deep x 1.75" high 2 or 4 ports
L   13.2" wide x 4.85" deep x 1.75" high
8 ports
H   13.2" wide x 4.85" deep x 3.50" high
4, 8, 12, or 16 ports

where n is the number of ports present either 2, 4, 8, 12, or 16

Features

- Access up to 256 computers with one keyboard, monitor, and mouse
- Compatible with PC, Apple, Sun, and Unix computers, keyboards, mice, and monitors
- Unix computers supported include IBM RS/6000, SGI Indy and others, DEC Alpha, HP 9000/700 series, and any other which use a PC style keyboard
- On-screen display for easy configuration and computer switching
- View name of CPU on screen with adjustable font, color, and position
- Choose computer from window with adjustable color and position
- Microprocessor controlled keyboard and mouse and emulation
- Saves energy to assist in latest energy saving programs
- Available in 4 or 8 port models
- Select CPU from keyboard command, on-screen display window, front panel, or RS232
- Supports all PC, Macintosh, and Sun video types
- Video resolution supports up to 1280X1024 non-interlaced video
- Supports all modes of PC, PS/2, AT, Apple, Sun, and Unix keyboards
- Mouse can be PS/2, Microsoft serial, Mouse Systems serial, Apple ADB, 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 1–999 seconds
- Programmable keyboard typematic rate and delay for PCs
- Save all programmable settings in flash 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", 23", and 24" rack mount kits available

GETTING STARTED

To acquaint you with your UltraView unit, this manual first describes UltraView's front and rear panels. Installation and operation instructions begin with the *Quick setup system wiring guide* on page 5. This easy-to-understand diagram illustrates how to connect UltraView to your CPUs, monitor, keyboard, and mouse. Information for setting up a UltraView expansion system is given in the *UltraView expansion* section starting on page 10. Also see the *Keyboard command summary* on page 36.

Package contents

Your UltraView package includes the UltraView unit, a power transformer, your warranty registration card, and this manual.

Cable requirements

UltraView 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 UltraView and will provide quick and trouble-free operation. *Appendix E* lists the most common cables. Cables and accessories are available from Rose Electronics.

To add more CPUs to a fully populated unit, you must connect slave units to the master UltraView. To do this you need a switch to switch cable for each slave unit. By connecting 16 units each with 16 ports you can expand up to 256 computers.

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 E* and *Table 4 Video Distance Capability*.

Locating the unit

The UltraView 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 UltraView will be mounted in a rack with the optional rackmount kit, see page 33. Many customers will purchase a longer MKM adapter cable and put the monitor, keyboard, and mouse on a desk leaving the UltraView near the CPUs.

ULTRAVIEW HARDWARE

The front panel

The UltraView front panel has a power switch and power LED, up to 32 LEDs, and two push-button switches. To familiarize yourself with UltraView's controls and indicators, review the illustration and descriptions given below. The unit shown below is in the L style chassis but is similar for other models.
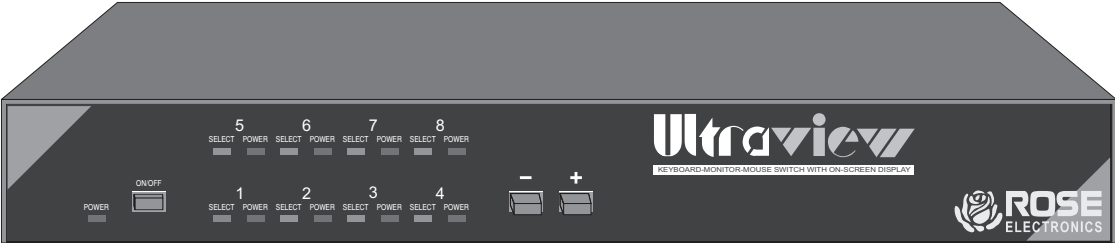
Figure 1. The UltraView front panel

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 connectors 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.
-/+	**Computer selection switches:** Changes currently selected computer from the front panel. The - switch is used to select a numerically lower computer. The + switch is used to select a numerically higher computer. Also used for reloading flash memory, resetting to factory default, and diagnostics.	

The rear panel

All cables are connected at the UltraView's rear panel as shown below. The unit shown below is in the L style chassis but is similar for other models.
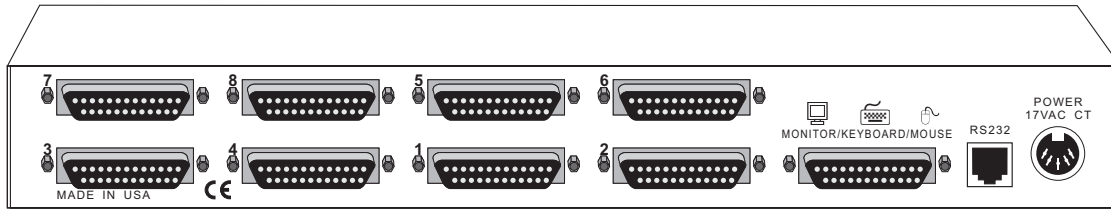
Figure 2. The UltraView rear panel

Table 2. The rear panel		
Panel Label	**Connector**	Description
COMPUTER 1-8	DB25 Female	Computers are connected at these connectors 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 connector 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. UltraView firmware upgrades and diagnostics are also accessed through this port.
POWER	DIN5 Female	Power transformer included in package connects here. This is **not** a keyboard input. Power transformers are available for US. 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 E 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 UltraView unit. Connectors will vary depending upon the types of equipment being installed.
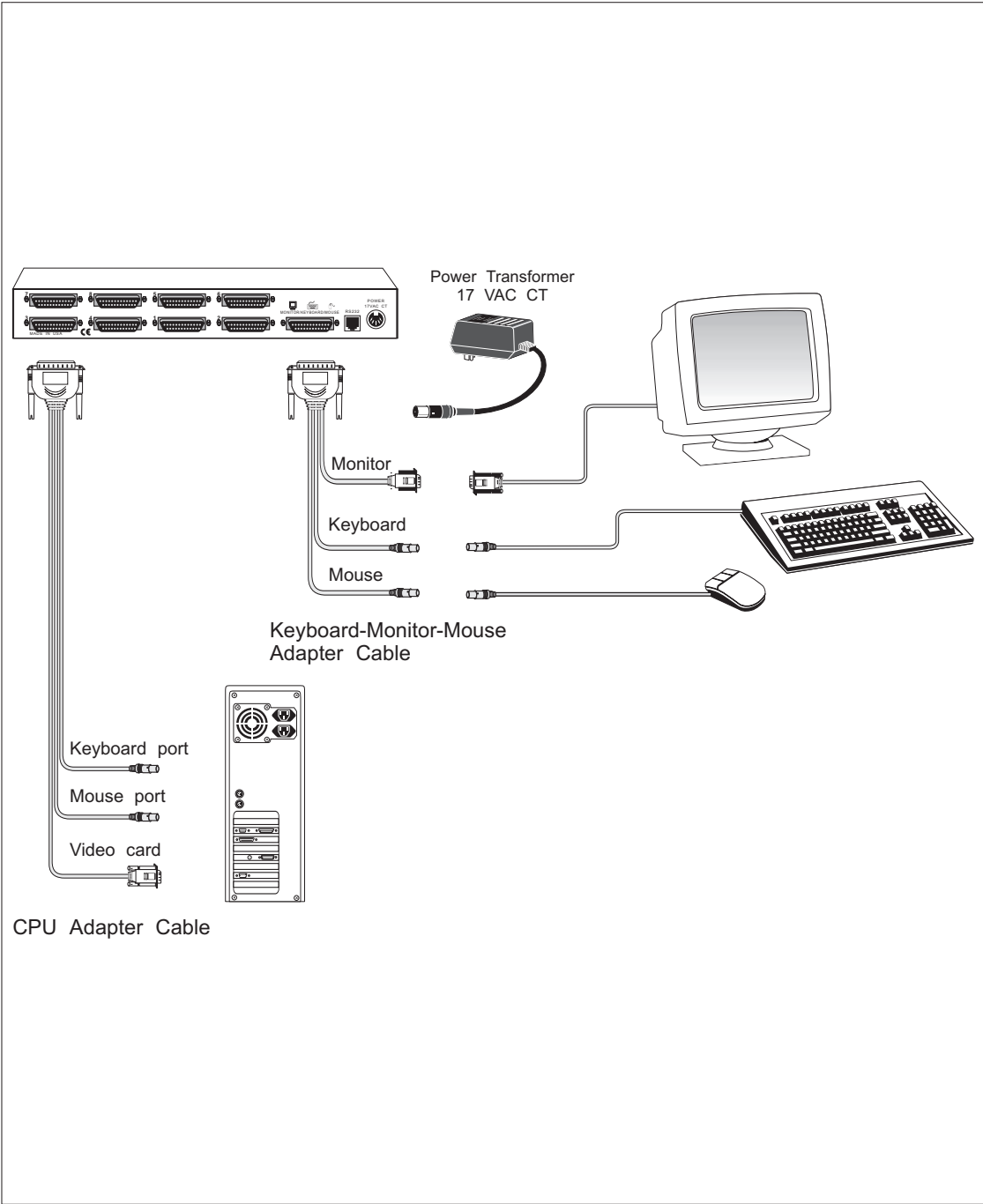
Figure 3. Typical installation diagram

QUICK INSTALL

This section provides instructions for the setup of the UltraView. For an illustrated example, see the *Quick setup system wiring guide* on the previous page. If you are installing more than one UltraView unit, please refer to the *UltraView expansion* section on page 10 prior to beginning installation.

Step 1. Connect power to the unit

Plug the power transformer's power jack into the the power plug located on the back of the UltraView unit, then plug the transformer into a power strip or wall outlet. Don't turn the power on to the UltraView yet.

Step 2. Connect one computer

CPU adapter cables connect your computers to the UltraView. Each computer requires its own adapter cable, with appropriate connectors for your particular CPU. CPU adapter cables are available from Rose Electronics.

2.1   Disconnect the keyboard, monitor, and mouse from a computer which is already running.

2.2   Plug the CPU adapter cable's monitor, keyboard, and mouse connectors into the CPU's corresponding connectors.

2.3   Plug the DB-25 male connector of the CPU adapter cable into the connector labeled COMPUTER1 on the UltraView rear panel.

2.4   Verify that the POWER LED 1 next to the SELECT LED 1 is on.

Step 3. Connect the monitor, keyboard, and mouse

The Monitor/Keyboard/Mouse (MKM) adapter cable connects your monitor, keyboard, and mouse equipment to the UltraView. 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 from Rose Electronics. Multi-platform models automatically detect PC, Apple, Sun, and Unix keyboards.

3.1   Plug the MKM adapter cable's monitor, keyboard, and mouse connectors into your equipment's corresponding connectors.

3.2   Plug the DB-25 male connector of the MKM adapter cable into the connector labeled "Monitor/Keyboard/Mouse" on the UltraView rear panel.

Step 4. Access UltraView's on-screen display

4.1   Turn the UltraView on by pushing in the power switch. The green POWER LED should turn on. The red SELECT 1 LED should also turn on. The keyboard is automatically recognized and detected.

4.2   After about three seconds you should see the normal video from the computer and a label in the lower left corner showing "Computer 1".

4.3   Press and release the **left control** key and press and release the **F12** key. The UltraView configuration menu should appear on top of your computer's normal video. This main menu is shown on page 12.

4.4   UltraView's on-screen display is very easy to use. The arrow keys always highlight possible selections. At the main page the enter key sends you to other pages and the escape key exits the on-screen display. At these other pages the enter key pops up an input box and the escape key exits to the main configuration page or aborts an input box.

4.5   Navigate through the menus to learn some of UltraView's capabilities if you want to. Then exit the on-screen display by hitting escape.

Step 5. Configure the PC serial mouse

5.1a   **If your UltraView is for PCs and Unix computers,** the mouse is automatically detected as PS/2 or serial. If you are using all PS/2 or all serial interfaces, then your CPUs are already configured. If you want to use some PS/2 computers and some serial computers, then you must use a PS/2 mouse and configure each computer which is to be serial in step 6.2.

5.1b   **If your UltraView is for Sun or Apple computers**, this step does not apply, your keyboard, mouse, and CPUs are already configured and functional, skip to step 7.

5.1c   **If your UltraView is for multiple platforms,** and your mouse is a Sun or Apple mouse, the keyboard and mouse have been auto detected, skip to step 6. If you have a PC keyboard and serial mouse, you must configure the mouse from the *Configure system* page.

Step 6. Configure the computer keyboard/mouse type

6.1a **If your UltraView is for PCs and Unix computers,** you have a choice between three PC keyboard types: PC1 (some IBM PCs), PC2 (most PCs), and PC3 (Unix computers). You have a choice between two mouse types: PS/2 or serial. Configure the mouse type for serial if you have a PS/2 mouse and a serial computer, otherwise leave it at PS/2.

6.1b **If your UltraView is for Sun or Apple computers**, this step does not apply, your keyboard, mouse, and CPUs are already configured and functional, skip to step 7.

6.1c **If your UltraView is for multiple platforms,** you have a choice between five keyboard types: PC1 (some IBM PCs), PC2 (most PCs), PC3 (Unix computers), Apple, or Sun. You have a choice between four mouse types: PS/2, serial-2(2-button), serial-3 (three button), or serial-8 (rarely used). You must configure the mouse for the correct type.

6.2 To configure a computer's keyboard or mouse type, press and release **left ctrl** and then **F12** to access the on-screen configuration menus. Use the down arrow to highlight *Configure computers*. Hit the enter key. Use the arrow keys to point to the keyboard and mouse fields. Hit enter to bring up a window that shows possible types. Use the arrows to highlight which type of keyboard or mouse type and hit the enter key to choose the selection. Configure as many computers as desired.

If you have several PCs with mixed keyboard modes and you don't want to individually have to configure them, just boot all the computers and let the UltraView learn the mode for each one.

If a computer uses a PS/2 mouse and the computer was already booted when connecting the switch, then the mouse must be enabled for each of these computers. Enable the mouse by selecting PS/2 mouse for each computer (even if it was already selected) or by using the reset command, described on page 30. You can also boot the computer to enable the mouse. See page 15 and 22 for more information.

6.3 Hit escape to go back to the main configuration page. Hit escape to exit the configuration menu. Use the down arrow to select yes to save the changes in flash memory. Hit enter. Your keyboard and mouse should be active on all computers configured. See page 21 for more information.

Step 7. Switching among CPU

Your UltraView is now ready for operation. To take full advantage of the UltraView features, please refer to *CONFIGURE VIA ON-SCREEN DISPLAY (page 12), OPERATION: COMPUTER SELECT WINDOW (page 28), and OPERATION: KEYBOARD COMMANDS (page 29).* To begin switching immediately, however, follow the instructions below.

> **NOTE:** Before entering any UltraView keyboard command, you must press and release the **left** Control Key. This activates UltraView 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.

7.1 **From the keyboard –** Press and release your keyboard's **left** Control Key (**<Ctrl>**), then type in the CPU number.

7.2 **From the front panel –** Use the - and + switches to sequence through the CPUs. Each computer's select LED will light as it becomes selected.

7.3 **From the CPU select window –** Press and release your keyboard's **left** Control Key (**<Ctrl>**) and then press and release the **escape** key. Use the up and down arrows to select the CPU desired and hit **enter**. You will immediately be switched to that computer.

ULTRAVIEW EXPANSION

The UltraView F chassis can be expanded with expansion card model UVK-4U to contain up to 16 ports. The card is installed by opening the chassis and installing the card according to the instructions provided.

UltraView units and other switches (such as the ServeView) 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 connector via the MKM adapter cable becomes the master unit. All other UltraViews or ServeViews are slave units that provide computer expansion only and perform no control functions.

Slave units can be added to your UltraView system as you need them. For each slave you add to the system, you gain n-1 additional ports, where n is the number of ports on the slave unit. As Figure 4 shows, adding a single 8-port slave to an 8-port master unit gives you 15 ports. Adding a second 8-port slave unit will give you 23 ports, and so forth. Using 8-port units only the maximum number of computer is 64. If you use 16-port units, you can connect up to 256 computers. You can mix 2, 4, 8, 12, and 16 port units together, but the number of ports on each slave unit should be equal.

Two configuration settings – units and width determine exactly how the CPUs are numbered. Please refer to the the units and width on page 16 and 17 for more information.
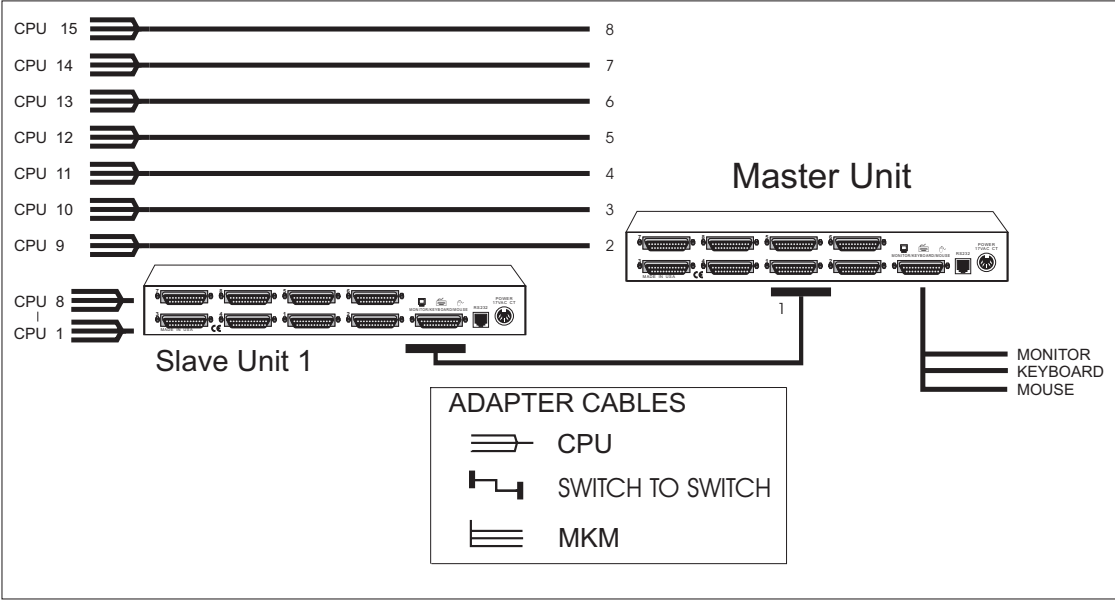
Figure 4. Expansion system layout

Expansion cable requirements

For the slave-to-master installation you will need one switch-to-switch expansion cable for each slave unit. You still need a CPU adapter cable for each CPU you will be connecting to the UltraView 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 UltraView 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 4 illustrates the proper layout and numbering of your slaves and CPUs.

1. Connect the monitor, keyboard, and mouse to the master unit's Monitor/ Keyboard/Mouse connector as outlined on page 6.

2. Connect the MKM connector of each slave unit to one of the numbered CPU connectors on UltraView's rear panel using a switch-to-switch expansion cable.

    As illustrated in Figure 4, when connecting slave units, connect the MKM connector of the first slave to the master's CPU 1 connector. Connect the second slave's MKM connector to the master's CPU 2 connector. This ensures the CPU selection numbers you use in keyboard commands remain consecutive.

    Computer number 1 is the connector labeled COMPUTER1 on the slave connected to the master's CPU 1. For a system with a single 8-port slave and master, Computer number 15 would be the connector labeled COMPUTER8 on the master.

3. From the keyboard attached to the master unit, use the on-screen display to configure the maximum number of computers, see page 16. This allows scanning to cycle correctly and allows the master unit to control the slave units.

CONFIGURATION VIA ON-SCREEN DISPLAY

The on-screen display is used to:

1. Configure the UltraView through a series of configuration menus (control F12 command).

2. Switch to different computers from a window which shows a list of computer names (control escape command). You can change the color and position of this window.

3. See the name of the computer you are currently switched to. The font, color, position, and when the text is displayed is all programmable.

The main configuration menu is accessed by pressing and releasing the **left control** key and then hitting the **F12** key. The menu in Figure 5 will appear.

```
UltraView version U60E        Copyright 1990-1999 Rose Electronics

Main configuration menu
Configure system
Configure computers
Configure overlay
Exit




                                  Use arrow keys to highlight
                                  selection and press enter
                                  or press escape to exit

 View/change keyboard, mouse, expansion, and scanning
```
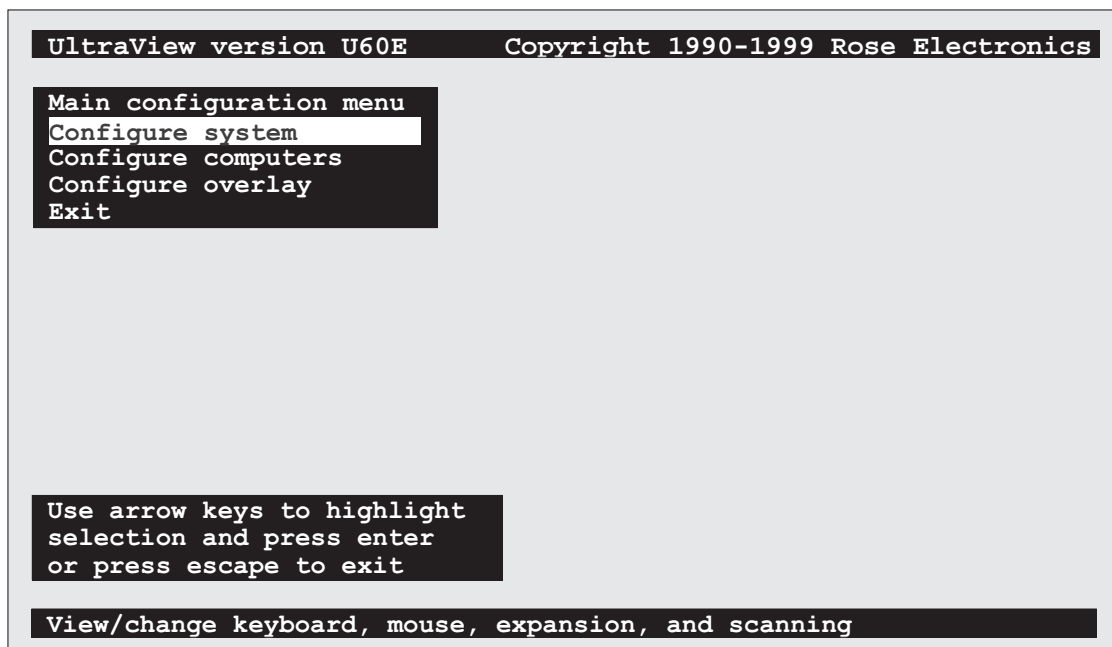
Figure 5 Main configuration menu

The on-screen display shows on top of your computer video, if you are switched to a computer with active video. If no video is present then the background is black. If the display is not synchronized, then you should switch to a computer with active video and configure the *resolution* setting from the *Configure overlay* page.

Navigating the configuration pages

Using the on-screen display is very easy and intuitive. Use the arrow keys to highlight a selection and hit enter to choose the selection. A help line on the very bottom of the screen explains what each selection is for.

From the main configuration page, choosing a selection, by hitting the enter

key, either exits to normal keyboard operation or goes to the *Configure system*, *Configure computers,* or *Configure overlay* pages. From these other pages, choosing a selection, by hitting the enter key, will pop-up an input box to enter text, a numeric value, or a list of possible choices. Use the escape key to return to the previous page or to abort an input box.

Saving changes made with on-screen display

If you make any changes to any settings, when you exit the main configuration page, a message box asking if you want to save the changes will pop up. Use the arrow keys to choose yes or no and hit return. If you choose yes the changes are saved in flash memory and if you choose no the changes are not saved. Regardless of yes or no the settings selected are active. If you answered no and then remove power from the box, the settings are lost.

Configure system page

Use this page to see information about the keyboard, configure the mouse, expansion settings, scan settings, and keyboard typematic settings. This page is accessed from the main configuration page by hitting enter when configure system is highlighted. The page is shown below in Figure 6. Each item on the page is individually described.

```
Configure system

Keyboard and mouse type
Keyboard              PC
Mouse                PS/2

Expansion
Maximum computers      8
Expansion units        0
Expansion width       16

Scan settings
Scan time (seconds)    5
Scan mode            Off
Power on scan        Off

Keyboard typematic
Rate (keys/sec)       20
Delay               Fast


Detected at power-up from cable, can't be changed here
```
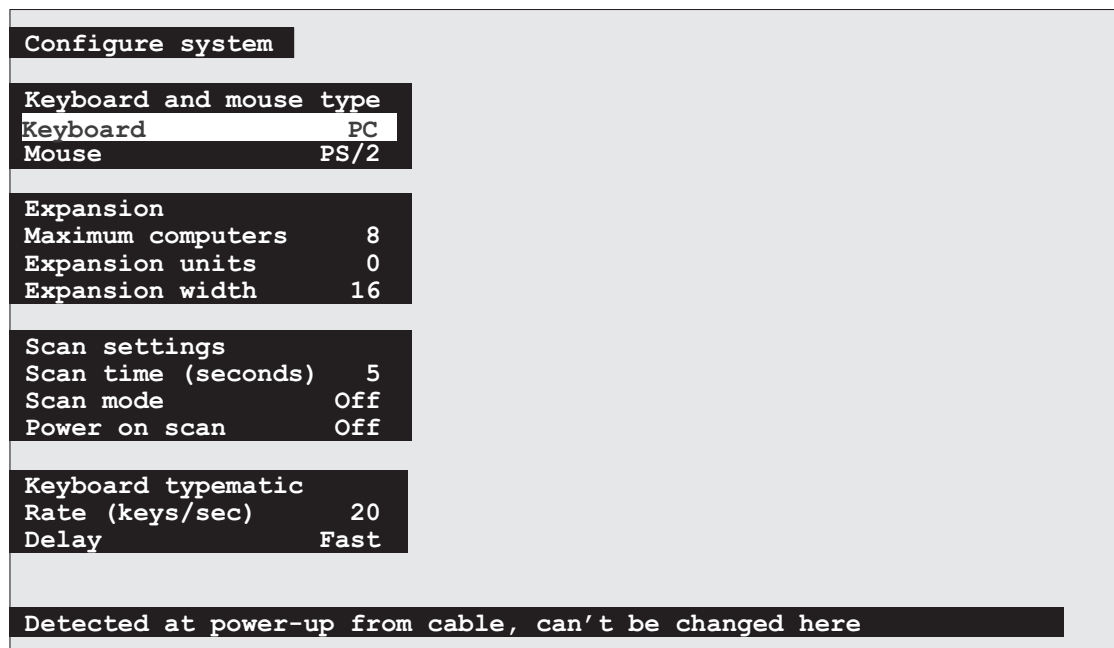
Figure 6 Configure system page

Configure system: *Keyboard*

This item can not be changed and is for information only. For PC, Apple, and Sun models the keyboard type is always PC, Apple, or Sun.

For the multi-platform models, the type of keyboard is automatically determined at power-up of the UltraView. If the keyboard is not attached at power-up , it will default to PC. If either a Sun or Apple keyboard is attached after power-up, it will not be recognized and you must power the UltraView off and back on for it to be recognized.

When using a Sun keyboard, the language type of the keyboard is acquired from the keyboard automatically and is displayed here. The language type can be either: US, US/UNIX, French, Danish, German, Italian, Netherlands/Dutch, Norwegian, Portuguese, Spanish, Swedish/Finnish, Swiss-French, Swiss-German, United Kingdom, Korean, Taiwan, Japan, French-Canadian, or unknown. The value recognized is reported to a Sun computer when it requests this information as part of a booting procedure or other process.

Configure system: *Mouse*

This item is only accessed with a multi-platform model and when using a PC keyboard. The PC only model automatically detects either PS/2 or serial and displays which mouse. When using Apple or Sun keyboards, an Apple or Sun mouse is automatically selected. To change the mouse type, hit enter while mouse is highlighted. An input selection box pops up as shown in Figure 7.

```
Configure system

Keyboard and mouse type
Keyboard              PC
Mouse                 PS/2          PS/2
                                    Serial 2-button
Expansion                           Serial 8-bit
Maximum computers      8            Serial 3-button
Expansion units        0
Expansion width       16

Scan settings
Scan time (seconds)   5
Scan mode             Off
Power on scan         Off

Keyboard typematic
Rate (keys/sec)       20
Delay                 Fast


  Type of mouse used, can only be changed if keyboard is PC type
```

Figure 7 Changing the mouse type

Use the up and down arrow keys to select the desired mouse and hit enter. Once enter is hit, the input box disappears and the new value appears in the mouse field.

A *PS/2 mouse* refers to those mice that have a 6 pin mini-din connector with either two or three buttons. It uses an interface integrated on to the CPU's mother board and is completely different from a serial interface.

When choosing a PS/2 mouse, this also resets the PS/2 mouse and enables data to be sent from it. This can be used after a PS/2 mouse has been connected and after the UltraView has been powered on to enable it. You can also use the reset command mentioned on page 30.

A *serial 2-button mouse* refers to those mice which have serial RS232 interfaces, usually with a DB9 connector, and are MicroSoft 3 byte, 7-bit, 1200 baud, no parity compliant. Most PC serial mice with 2 buttons are compliant with this specification.

A *serial 8-bit mouse* refers to those mice which have serial RS232 interfaces, usually with a DB9 connector, and are MicroSoft 3 byte, 8-bit, 1200 baud, no parity compliant. Very few mice meet this specification and this setting is rarely used and is included for completeness and future compatibility.

A *serial 3-button mouse* refers to those mice which have serial RS232 interfaces, usually with a DB9 connector, and are Mouse Systems 5-byte, 8-bit, 1200 baud, no parity compliant. Most PC serial mice with 3 buttons are compliant with this specification.

Certain commonly available serial mice made in Asia have the usual three buttons and a switch on the bottom. This switch is usually labeled MS/PC. In the MS position the mouse is compatible with the UltraView 2-button setting, and in the PC position it is compatible with the 3-button setting.

Configure system: *Maximum computers*

This setting configures the total number of computers connected. This enables expansion and ensures that the scan function will cycle through all the computers. 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 an UltraView unit. To change the maximum computers, press enter while maximum computer is highlighted. An *input new value* box appears, see Figure 8.

```
 Configure system

 Keyboard and mouse type
 Keyboard              PC
 Mouse                 PS/2

 Expansion
 Maximum computers      8        Input new value
 Expansion units        0
 Expansion width       16

 Scan settings
 Scan time (seconds)    5
 Scan mode             Off
 Power on scan         Off

 Keyboard typematic
 Rate (keys/sec)       20
 Delay                 Fast


 Total number of computers connected to switch (2-256)
```
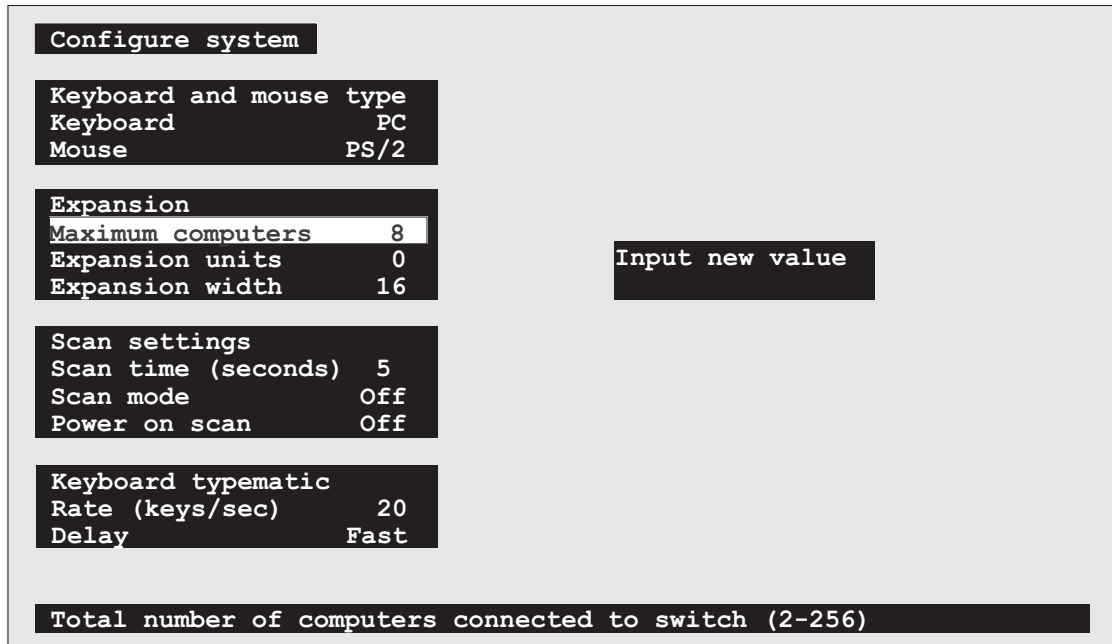
Figure 8 Changing the maximum number of computers

Use the numeric keys to input a new value from 2 to 256 and hit enter. The input box disappears and the new value is then shown in the maximum computers field.

Configure system: *Expansion units*

The units commands is used to configure how many *slave* expansion units are connected to the main *master* UltraView. This determines which CPU number is associated with which physical connector. If no expansion units are used, this number should be set to zero. If one expansion unit is connected the value should be set to one, and so on.

To change the expansion units, press enter while expansion units is highlighted. An *input new value* box appears. Use the numeric keys to input a new value from 0 to 16 and hit enter. The input box disappears and the new value is then shown in the expansion units field.

Configure system: *Expansion width*

The expansion width setting determines how many computers are on an expansion unit. This determines which CPU number is associated with which physical connector. For example, if four computers are attached to one or more expansion units, than the expansion width should be set to four.

To change the expansion width, press enter while expansion width is highlighted. An *input new value* box appears. Use the numeric keys to input a new value from 1 to 16 and hit enter. The input box disappears and the new value is then shown in the expansion width field.

For example, imagine we have a system with 32 computers and it is desired to cluster eight computers together to form four groups. A slave switch is used for each group of eight computers. The four slave switches are attached to a master 8-port switch.

In this example maximum ports should be set to 32, expansion units would be set to four, and expansion width would be set to eight. The four extra ports on the master unit could be connected to four additional computers, but maximum ports should then be set to 36.

Configure system: *Scan time*

This item sets the time, in seconds, that UltraView will pause at each of the computers when scanning. The default setting is 5 seconds. To change the time, press enter while scan time is highlighted. An *input new value* box appears. Use the numeric keys to input a new value from 1 to 999 seconds and hit enter. The input box disappears and the new value is then shown in the scan time field.

Configure system: *Scan mode*

This item turns scanning on or off. To change the scan mode, press enter while scan mode is highlighted. An *off/on input* box appears. Use the arrow keys to select on or off and hit enter. The input box disappears and the setting of off or on is shown in the scan mode field. You can also use the control S and control X commands to turn the scan mode on or off, see page 29 for more information.

Configure system: *Power on scan*

This item turns scanning on or off upon power-up of the UltraView. To change the power on scan, press enter while power on scan is highlighted. An *off/on input* box appears. Use the arrow keys to select on or off and hit enter. The input box disappears and the setting of off or on is shown in the power on scan field.

Configure system: *Typematic rate*

This setting is available with PC keyboards only and is used to adjust the user preference of the way the keyboard acts when holding a key down to repeat a key. The rate is the speed at which the keys are sent in keys/second.

To change the typematic rate, press enter while typematic rate is highlighted. An *input new value* box appears. Use the numeric keys to input a new value from 0 to 31 keys/second and hit enter. The input box disappears and the new value is then shown in the typematic rate field. Please note that PC keyboards do not have a linear rate in keys/second. Refer to Table 3 to get the exact rate.

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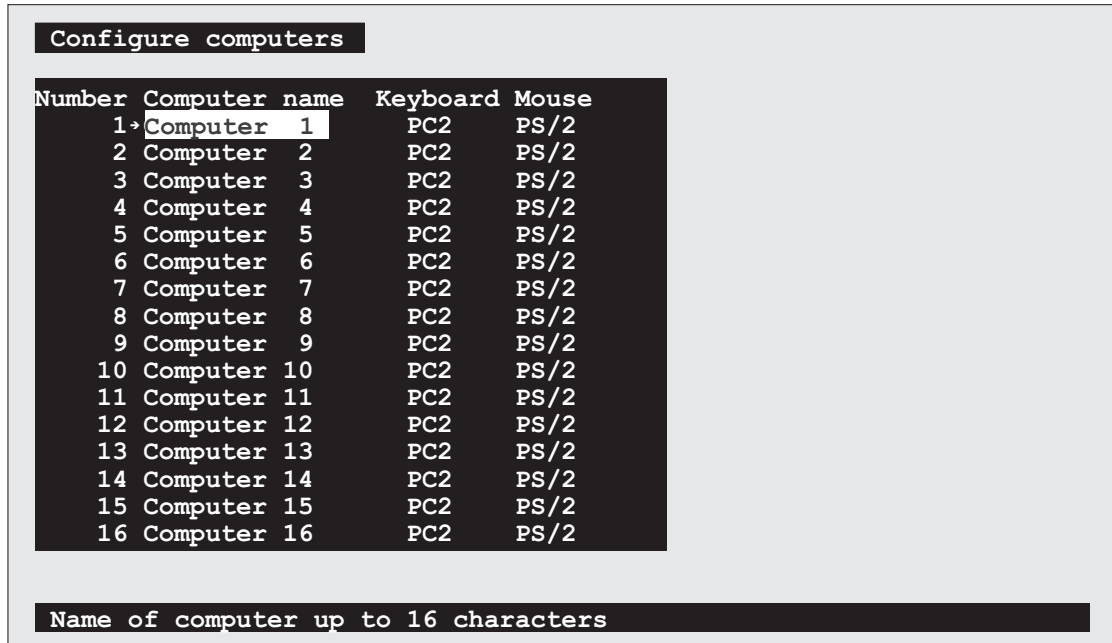
Configure system: *Typematic delay*

This setting is available with PC keyboards only and is used to adjust the user preference of the way the keyboard acts when holding a key down to repeat a key. The delay determines how long after pressing a key will it start to repeat. There are four possible settings: slow (1 second), medium (750 msec.), fast (500 msec.), and fastest (250 msec.).

To change the typematic delay, press enter while typematic delay is highlighted. A *typematic rate input box* appears. Use the arrow keys to select slow, medium, fast, or fastest and hit enter. The input box disappears and the setting selected is now shown in the typematic delay field.

Configure computers page

Use this page to configure the names, keyboard type, and mouse type for each computer. This page is accessed from the main configuration page by hitting enter when configure computers is highlighted. The page is shown below in Figure 9. The arrow in the column after the computer number points to the currently selected computer. Each item on the page is individually described.

```
 Configure computers

Number Computer name   Keyboard Mouse
     1→Computer  1        PC2     PS/2
     2 Computer  2        PC2     PS/2
     3 Computer  3        PC2     PS/2
     4 Computer  4        PC2     PS/2
     5 Computer  5        PC2     PS/2
     6 Computer  6        PC2     PS/2
     7 Computer  7        PC2     PS/2
     8 Computer  8        PC2     PS/2
     9 Computer  9        PC2     PS/2
    10 Computer 10        PC2     PS/2
    11 Computer 11        PC2     PS/2
    12 Computer 12        PC2     PS/2
    13 Computer 13        PC2     PS/2
    14 Computer 14        PC2     PS/2
    15 Computer 15        PC2     PS/2
    16 Computer 16        PC2     PS/2


 Name of computer up to 16 characters
```

Figure 9 Configure computers page

Navigating the configure computers page

Use the left and right arrow keys to move the highlight for changing the computer name, keyboard, or mouse. Use the up and down arrow keys to move the highlight for which computer is to be changed. Use the page up and down arrows to access computers 17-256.

On models for Apple or Sun computers the keyboard and mouse type can not be changed.

Configure computers: *Computer name*

Each computer can be given a 16 character name. These names are used on the computer select window and as a label showing the currently selected computer. To change the computer name press enter while a computer name is highlighted. An *input new name* box appears, see Figure 10.

```
 Configure computers

Number Computer name   Keyboard Mouse
      1→Computer   1       PC2     PS/2        Input new name
      2 Computer   2       PC2     PS/2
      3 Computer   3       PC2     PS/2
      4 Computer   4       PC2     PS/2
      5 Computer   5       PC2     PS/2
      6 Computer   6       PC2     PS/2
      7 Computer   7       PC2     PS/2
      8 Computer   8       PC2     PS/2
      9 Computer   9       PC2     PS/2
     10 Computer  10       PC2     PS/2
     11 Computer  11       PC2     PS/2
     12 Computer  12       PC2     PS/2
     13 Computer  13       PC2     PS/2
     14 Computer  14       PC2     PS/2
     15 Computer  15       PC2     PS/2
     16 Computer  16       PC2     PS/2

 Name of computer up to 16 characters
```
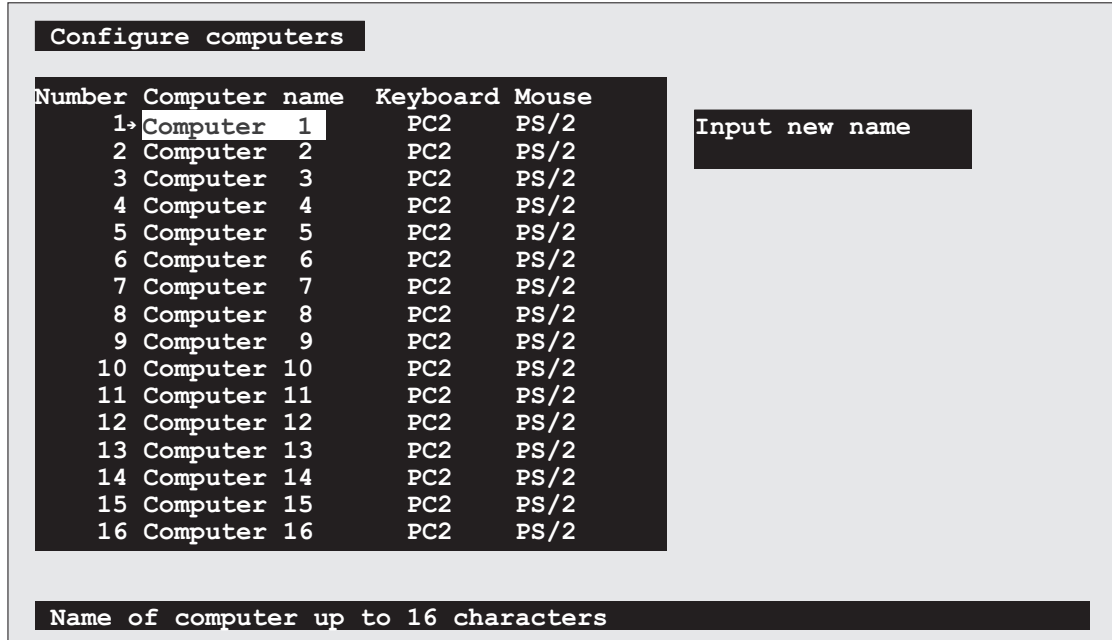
Figure 10 Changing a computer's name

Use the keyboard to input a new name. All ascii characters are valid in the name field. Use the shift key as normal, to input upper and lower case. The backspace key can be used to edit the field. When you have finished with inputting the name, hit enter. The input box disappears and the new name is then shown in the appropriate computer name field.

Configure computers: *Computer keyboard*

This field can not be changed on UltraView for Apple or Sun models. For the PC and multi-platform models you can assign which type of keyboard interface is used. To change the computer keyboard type, press enter while a keyboard field is highlighted. A computer keyboard input box appears, see Figure 11.

```
 Configure computers

Number Computer name   Keyboard Mouse
      1 →Computer  1      PC2      PS/2       PC1
      2 Computer  2        PC2      PS/2       PC2
      3 Computer  3        PC2      PS/2       PC3
      4 Computer  4        PC2      PS/2       Apple
      5 Computer  5        PC2      PS/2       Sun
      6 Computer  6        PC2      PS/2
      7 Computer  7        PC2      PS/2
      8 Computer  8        PC2      PS/2
      9 Computer  9        PC2      PS/2
     10 Computer 10        PC2      PS/2
     11 Computer 11        PC2      PS/2
     12 Computer 12        PC2      PS/2
     13 Computer 13        PC2      PS/2
     14 Computer 14        PC2      PS/2
     15 Computer 15        PC2      PS/2
     16 Computer 16        PC2      PS/2


 Type of computer keyboard used
```

Figure 11 Changing a computer's keyboard type

Use the arrow keys to select the desired keyboard type and hit enter. The input box disappears and the new keyboard type is then shown in the appropriate keyboard field.

For PCs there are three possible keyboard modes: mode 1 (PC1), mode 2 (PC2), or mode 3 (PC3). Most PCs are mode 2 and you need not change the default setting. If the computer is a Unix workstation or server, such as an IBM RS/6000, SGI, HP 700 or 9000 series, DEC Alpha, or other, then the CPU should be configured as PC mode 3.

Certain IBM brand PCs are either mode 1 or mode 2. There is no way to know for sure except by booting that computer. You can however configure for PC1 or PC2 and test if keyboard communication is correct. If in doubt reboot the computer. Upon completion of booting a computer, the correct mode should be shown in the keyboard field. Make sure to save it with the on-screen display or the keep command.

Configure computers: *Computer mouse*

This field can not be changed on UltraView for Apple or Sun models. This field can also not be changed if the keyboard type is set to Apple, because the UltraView will automatically assume a mouse type of Apple. For PCs you can assign which type of mouse is used. To change the computer mouse type, press enter while a mouse field is highlighted. A computer mouse input box appears, see Figure 12.
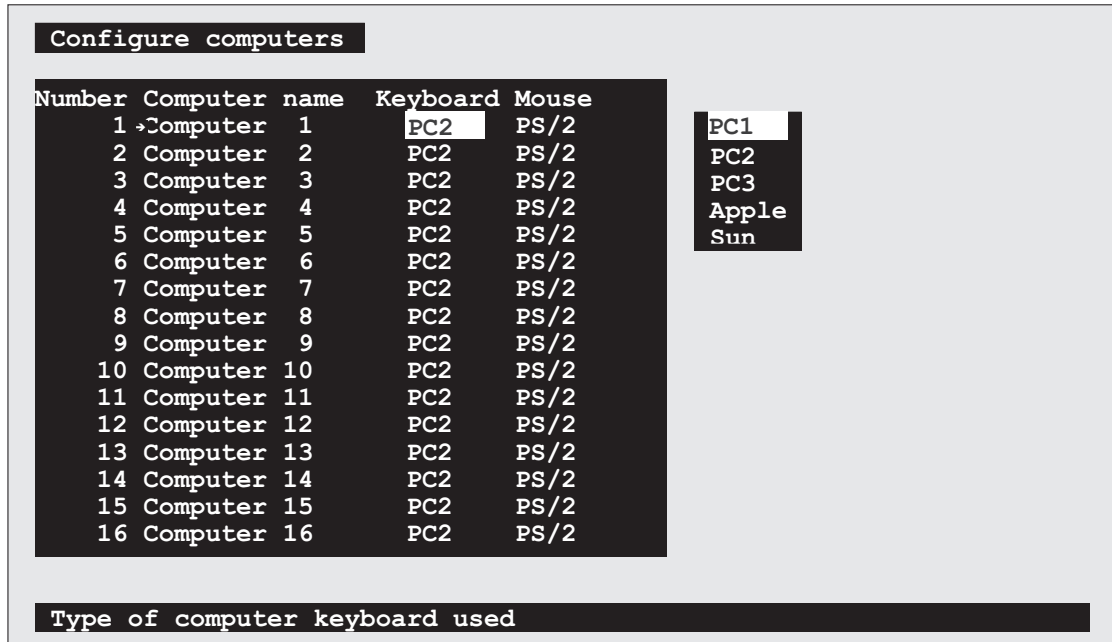
```
 Configure computers

Number Computer name   Keyboard Mouse
      1→Computer  1       PC2     PS/2        PS/2
      2 Computer  2       PC2     PS/2        Serial 2-button
      3 Computer  3       PC2     PS/2        Serial 8-bit
      4 Computer  4       PC2     PS/2        Serial 3-button
      5 Computer  5       PC2     PS/2
      6 Computer  6       PC2     PS/2
      7 Computer  7       PC2     PS/2
      8 Computer  8       PC2     PS/2
      9 Computer  9       PC2     PS/2
     10 Computer 10       PC2     PS/2
     11 Computer 11       PC2     PS/2
     12 Computer 12       PC2     PS/2
     13 Computer 13       PC2     PS/2
     14 Computer 14       PC2     PS/2
     15 Computer 15       PC2     PS/2
     16 Computer 16       PC2     PS/2


  Type of computer mouse attached (change for PCs only)
```

Figure 12 Changing a PC's mouse type

For the PC-only model you only have a choice between PS/2 or serial. If you are using a serial mouse changing this field has no effect. If you are using a PS/2 mouse, changing this field to serial configures the UltraView to convert the PS/2 mouse data to serial data for each computer configured to serial.

Use the arrow keys to select the desired mouse type and hit enter. The input box disappears and the new mouse type is then shown in the appropriate mouse field.

In order for the mouse to work properly the computer's mouse driver should have been previously been configured. To learn more about the difference between various mice see the discussion starting on page 15.

Configure overlay page

Use this page to configure the color of the configuration menus, the resolution of video when no computer video is present, the screen saver, the screen saver time, the computer select window appearance, and the computer label appearance. This page is accessed from the main configuration page by hitting enter when configure overlay is highlighted. The page is shown below in Figure 13. Each item on the page is individually described.

```
 Configure overlay

 Miscellaneous
 Color scheme                Aquarium
 Resolution         PC1 640x480x60Hz
 Screen saver           Black screen
 Screen saver time (seconds)       0

 Computer select window
 Background color    Transparent blue
 Text color                    White
 Position             X=  3   Y=  3

 Computer label
 Background color Transparent magenta
 Text color                   Yellow
 Position             X=  3   Y= 90
 Show computer number            Yes
 Fade out (seconds)               20
 Font              16x32 classic

 Colors of the configuration menu
```

Figure 13 Configure overlay page

Miscellaneous: *color scheme*

This item sets the colors of the configuration menus. There are 4 choices:

Aquarium   cyan, magenta, white, and blue
Tuxedo   black, red, and white
Festival   yellow, magenta, blue, cyan, and white
Forest   green, black, cyan, and blue.

To change the color scheme, press enter while color scheme is highlighted. A *color scheme input box* appears. Use the arrow keys to select the d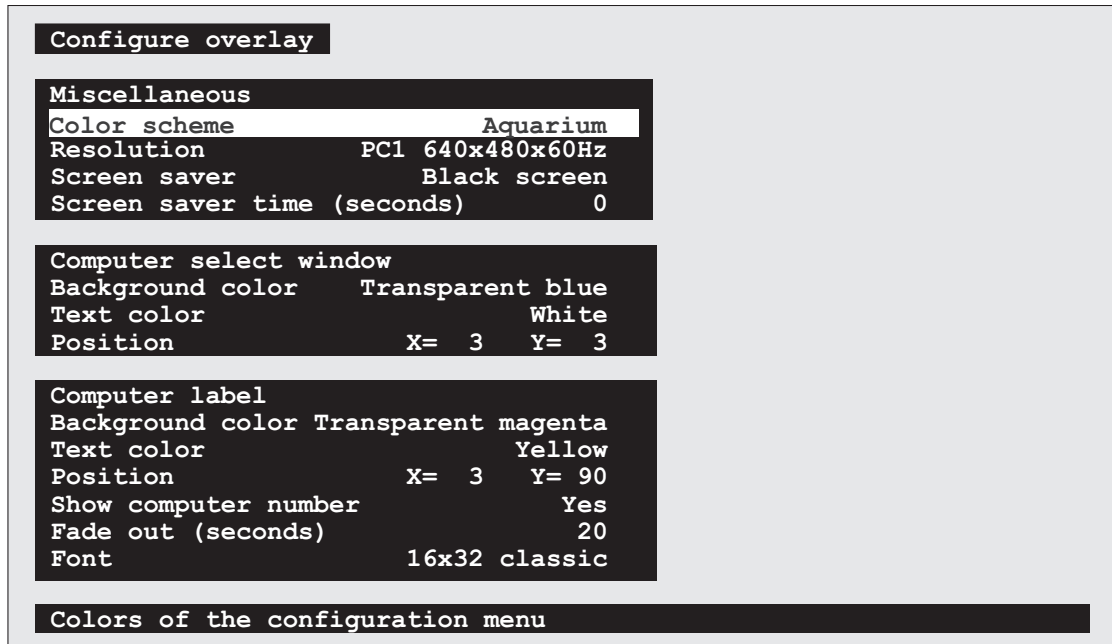esired color scheme and hit enter. The input box disappears and the setting selected is now shown in the color scheme field.

Miscellaneous: *resolution*

This item controls what resolution of video is sent to the monitor when no computer video is present. This gives maximum flexibility as to what type of

monitor is used.

There are several possible choices:
```
PC1   640x480  60Hz
PC2   640x480  72Hz
PC3   640x480  75Hz
MAC1  640x480  67Hz
MAC2  832x624  75Hz
SUN1  1152x900 66Hz
SUN2  1152x900 76Hz.
```

All of these choices will only be available if you have the multi-platform model. For the PC model only the PC choices will be allowed, for the Apple models only the Apple choices will be allowed, and for the Sun model only the Sun choices will be allowed.

To change the resolution, press enter while resolution is highlighted. A *resolution input box* appears. Use the arrow keys to select the desired resolution and hit enter. The input box disappears and the setting selected is now shown in the resolution field.

Miscellaneous: *Screen saver*

The UltraView features a screen saver feature which reduces the wear on your screen and provides security for your system. When there has been no keyboard or mouse activity for a specified length of time (set by the screen saver time command below), the screen saver turns on. You can blank the screen or choose one of three possible display patterns (fireflies, weaving, or bounce).

Normal video is reactivated when any key is pressed or the mouse is moved. If you are not in an on-screen display menu, then the computer name is also displayed as if you had just switched to a new computer. While in the screen saver mode all select LEDs will be turned off.

To change the screen saver, press enter while screen saver is highlighted. A *screen saver input box* appears. Use the arrow keys to select the desired screen saver and hit enter. The input box disappears and the setting selected is now shown in the screen saver field.

Miscellaneous: *Screen saver time*

This item sets the time in seconds when the screen saver is turned on with no keyboard or mouse activity.

To change the screen saver interval time, press enter while screen saver time is highlighted. An *input new value* box appears. Use the numeric keys to input a new value from 0 to 999 seconds and hit enter. The input box disappears and the new value is then shown in the screen saver time field.

Computer select window: *Background color/Text color*

This item sets the background and text colors of the computer select window. The solid colors available are: black, red, green, yellow, blue, magenta, cyan, and white. The transparent colors available are clear, red, green, yellow, blue, magenta, cyan, and white. With the transparent colors, you can see through the color to the computer video behind it. When using clear the computer video comes through without any color.

To change the color, press enter while computer select window background color or text color is highlighted. A *color selection input* box appears. Use the arrow keys to point to the desired color. The name of the color is also shown with its color changing as you point to each different color, so an example of the color can be seen. Hit enter to select the color pointed to. The input box disappears and the new color is then shown in the appropriate color field.

Computer select window: *Position*

This item set the position of the computer select window when it is popped up. The window can be positioned anywhere on-screen and will maintain the position even as different resolutions of video are input.

To change the position, press enter while computer select window position is highlighted. The overlay page disappears and the computer select window is shown. Use the arrow keys to position the window and hit enter when the desired position is reached. The overlay page returns with the horizontal (X) and vertical (Y) position numbers updated in the position field.

The range of horizontal movement (X) is from 0 and 64. The range of vertical movement (Y) is from 0 to 99. The position will wrap around the edge of the screen as it is positioned at minimum and maximum points.

The computer select window will automatically scale to the resolution of the incoming video and maintain a constant position on screen.

Computer label: *Background color/text color*

This item sets the background and text colors of the computer label. The solid colors available are: black, red, green, yellow, blue, magenta, cyan, and white. The transparent colors available are clear, red, green, yellow, blue, magenta, cyan, and white. With the transparent colors, you can see through the color to the computer video behind it. When using clear the computer video comes through without any color.

To change the color, press enter while computer label background color or text color is highlighted. A *color selection input* box appears. Use the arrow keys to point to the desired color. The name of the color is also shown with its color changing as you point to each different color, so an example of the color can be seen. Hit enter to select the color pointed to. The input box

disappears and the new color is then shown in the appropriate color field.

Computer label: *Position*

This items set the position of the computer label window when it is displayed. The label can be positioned anywhere on-screen and will maintain the position even as different resolutions of video are input.

To change the position, press enter while computer label position is highlighted. The overlay page disappears and a label box is shown. Use the arrow keys to position the label box and hit enter when the desired position is reached. The overlay page returns with the horizontal (X) and vertical (Y) position numbers updated in the position field.

The range of horizontal movement (X) is from 0 and 64. The range of vertical movement (Y) is from 0 to 99. The position will wrap around the edge of the screen as it is positioned at minimum and maximum points.

The computer select window will automatically scale to the resolution of the incoming video and maintain a constant position on screen.

Computer label: *Show computer number*

This item sets whether the computer number is displayed along with the computer label. To change show computer number, press enter while show computer number is highlighted. A *yes/no input* box appears. Use the arrow keys to select yes or no and hit enter. The input box disappears and the setting of yes or no is shown in the show computer number field.

Computer label: *fadeout*

This item sets the time when the computer label disappears after switching to a computer. With a value of 0, the computer label will not be displayed when switching computers. With a value of 255, the computer label will always be displayed. Also see the display label command on page 30 to make the label display and disappear on command.

To change the computer label fadeout, press enter while computer label fadeout is highlighted. An *input new value* box appears. Use the numeric keys to input a new value from 0 to 255 seconds and hit enter. The input box disappears and the new value is then shown in the computer label fadeout field.

Computer label: *font*

This items sets in which font the computer label is displayed. The choices are:
8x16 modern
8x16 classic
16x24 modern
16x24 classic
16x32 modern
16x32 classic.

The 8x16 sizes are the same as the size in the configuration menus. The 16x24 sizes are 100% larger horizontally and 50% larger vertically then the 8x16 fonts. The 16x32 sizes are 100% larger horizontally and 100% larger vertically than the 8x 16 fonts. The modern font is a sans-serif font, similar to Helvetica. The classic font is a serifed font, similar to Times. The actual size of the font on the screen depends upon the resolution of the video that is input. As the resolution increase the fonts become smaller, therefore larger fonts are more visible with higher resolutions.

To change the font, press enter while font is highlighted. A *font input box* appears. Use the arrow keys to select the desired font and hit enter. The input box disappears and the setting selected is now shown in the font field.

OPERATION: COMPUTER SELECT WINDOW

You can pop-up a computer select window on top of your computer screen to select a specific computer from a list of computers. The computer select window is accessed by pressing and releasing the **left control** key and then hitting the **Escape** key. The window shown in Figure 14 will appear. The arrow in the column after the computer number points to the currently selected computer.
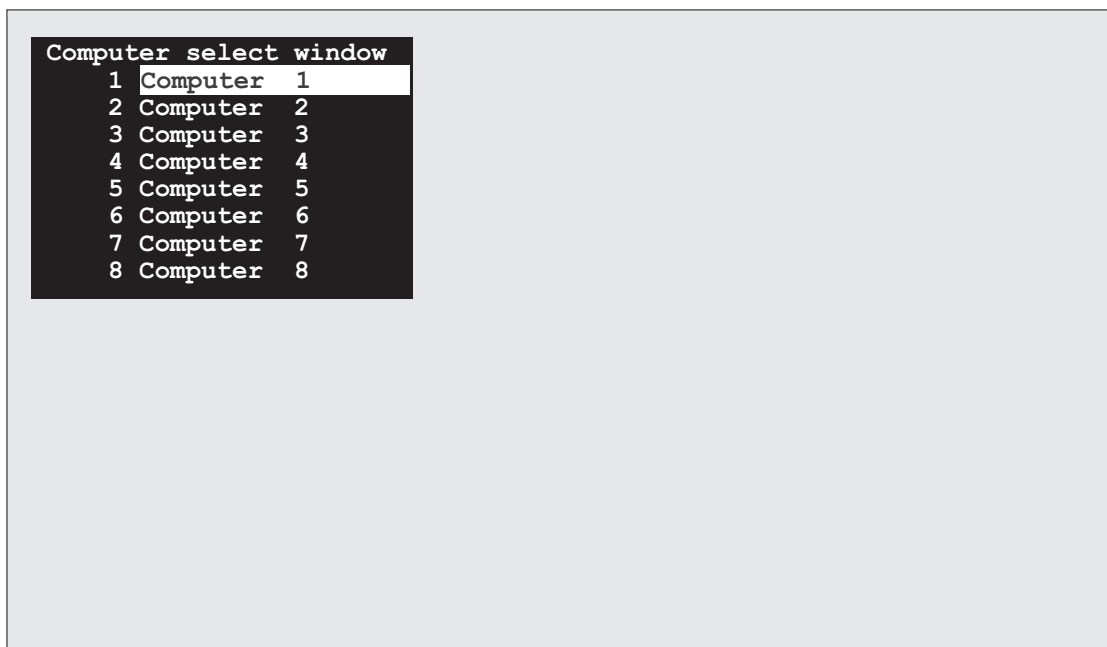
```
Computer select window
    1 Computer  1
    2 Computer  2
    3 Computer  3
    4 Computer  4
    5 Computer  5
    6 Computer  6
    7 Computer  7
    8 Computer  8
```

Figure 14 Computer select window

The text is overlayed on top of your current video. Use the up and down arrow keys to select the desired computer. If you have more than 16 computers configured, use the page up and page down keys to access the other computers at up to 16 computers/window. The window height will vary in size depending upon the maximum number of computers configured. For instance if maximum computers is configured to 6, then 6 computer names will show in the window.

Use the configure overlay page described on page 23 to set the position and color of the computer select window. When the desired computer is highlighted, hit enter to immediately switch to that computer or escape the window to abort switching and remove the computer select window from the screen.

When switching to the new computer, the name of the new computer will show in its previously configured position, color, and font.

OPERATION: KEYBOARD COMMANDS

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: UltraView will immediately switch to the desired CPU when you enter the one-digit number.

10–99 CPUs: UltraView 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>**, UltraView 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: UltraView 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, UltraView 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

These commands are shortcuts to the settings available through the on-screen display. To enable scanning from the keyboard, press and release the **left** Control Key (**<Ctrl>**), then type "S". UltraView 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 1-999 seconds. To stop scanning, press and release **<Ctrl>**, then type "X". Scanning is also disabled by changing to a new CPU.

Display label command

This command controls the computer label display. If the label is currently on, it turns it off. If the label is off, it turns it on for the fadeout time setting. To issue the command, press and release the **left** Control Key, then type "D".

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 and later corrects this inadequacy of previous drivers and renders this command unnecessary. To issue the command, press and release the **left** Control Key, then type "**N**".

Reset command

This command is used to re-boot the mouse and keyboard without removing power from the UltraView. 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 UltraView 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.

Screen saver time command

This command is a short cut for setting the screen saver time, that can be set from the on-screen display. To set the screen saver interval time, press and release the **left** Control Key, type "**V**", enter the interval time, in seconds (0–999), and press **<Enter>**. To disable the screen saver feature, press and release the **left** Control Key, type "**V**", enter "**0**" as the interval time, 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 new setting in the unit's non-volatile memory. To restore normal video, press any key or move the mouse. If not on an on-screen menu the computer label appears, as if you had just switched to a new computer.

Keep command

The Keep command saves the current state of the UltraView's custom settings. 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**".

VIDEO

Selecting a monitor

Sharing a monitor between dissimilar systems requires a monitor which can sync to all of the CPU's video. It is recommended to get a high quality multiple scan rate monitor capable of synching to 1280 by 1024 at 75 Hz. 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.

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 UltraViews 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 4. 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						

MISCELLANEOUS

Power interruption to the UltraView

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

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 or to load new flash firmware. You will need serial cabling with 4-pin or 6-pin RJ jacks, and the appropriate adapter (either DB-25 female to RJ11/12 female or DB-9 female to RJ11/12 female, depending upon your equipment). These adapters are available from Rose Electronics.

1. Insert the RJ cable between the RS232 serial port on UltraView's rear panel, and the RJ 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.

Rackmount kit

The rackmount kit is an optional item that can be ordered at any time. Your UltraView unit is designed to accept rack mount brackets that attach to the sides of the UltraView unit. There are three sizes available 19" by 1.75", 23" by 1.75", and 24" by 1.75". You must order the rack mount kit for the correct chassis. See Appendix E for part numbers.

UPGRADING THE FLASH MEMORY

The UltraView has flash memory, which means its firmware may be reloaded, 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, either 9600 baud or 57600 baud. Both require an 8 bit, no parity, and 1 stop bit protocol. You must have the proper serial cable. You can obtain it from Rose Electronics or make if from the specification in Appendix B.

The file can be obtained from the Rose Electronics bulletin board or FTP site and is of the form UrrN.HEX where rr is the revision number and N is either E for multi-platform , P for PC, and S for Sun, or A for Apple. Please make sure to get the right file. The unit won't let you to load the incorrect file. There are two methods to load the flash file.

Method 1 - Using a communication program

1. Connect the RS232 cable from your computer's serial port to the RS232 port on the unit.

2. Press both the - and + switches on the front panel, at power-on of the UltraView. The UltraView is ready to accept the upgrade file at 9600 baud as shown by LED 1 being lit. To use 57600 baud, press the + switch, LED 4 will light. Before loading the file you can always change between the baud rates by pressing the - switch (9600 baud, LED 1 lit) or the + switch (57600 baud, LED 4 lit). Run your communication program. Set the baud rate to the correct rate and put the program in direct connect mode. When you press the - or + switch, you should see the message:
Waiting for file at 9600 baud or *Waiting for file at 57600 baud.*

3. Send the file to the unit using a simple ascii text file protocol. While the file is being sent, periods are sent to indicate file copy progress. Once the file has been sent, you should see the message:
Receive successful
Hit space to program

3. Hit the space bar. The flash is now being programmed and verified. Programming and verifying progress is indicated by sending periods. You should see the following message:
Programming flash
....
Verifying flash
....
Verify successful
Hit enter to boot

4. Hit the enter key. The new firmware now executes and diagnostic information is sent to your screen as well as the on-screen display. Observe the new revision number matches that of the file. Then you will see:
Hit enter key to continue

5. Hit the enter key. The box is now operational and port 1 is selected. The flash procedure is complete.

You may receive any of the following error messages when receiving the file:
Checksum error or *Record error* or *Data error*
Receive failed
Try again Y/N?

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 three wires are necessary to the UltraView, transmit, receive and ground. Enter Y to try again and it takes you back to the beginning *Waiting for file ...* Enter N and the box will prompt you *Hit enter to boot* which brings you to the same point as step 4, with the firmware unchanged.

If verifying fails, the box should be serviced. You can try to program the flash again though by hitting enter.
Verify failed
Hit enter to program

Method 2 - Using the LEDs and front panel switches with a file copy

1. Connect the RS232 cable from your computer's serial port to the RS232 port on the unit.

2. Press both the - and + switches on the front panel, at power-on of the UltraView. The UltraView is ready to accept the upgrade file at 9600 baud as shown by LED 1 being lit. To use 57600 baud, press the + switch, LED 4 will light. Before loading the file you can always change between the baud rates by pressing the - switch (9600 baud, LED 1 lit) or the + switch (57600 baud, LED 4 lit).

3. Copy the file to the unit. While the file is being copied LED 1 or 4 will flash. Once the file is copied, LED 2 will light.

4. Press and release the + switch, LED 2 flashes off for a brief instant. The flash is now being programmed and verified. LED 3 now lights.

5. Press and release the + switch, LED 3 flashes off for a brief instant. The new firmware is now run and diagnostic information is sent to the on-screen display. Observe the new revision number matches that of the file. LED 4 now lights.

6. Press and release the + switch. LED 1 now lights. The box is now operational and port 1 is selected. The flash loading procedure is complete.

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 UltraView 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 UltraView and not sent to the CPU.

Command	Key Sequence	Description
Table 7. 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 CPU	<Ctrl> -	Selects the previous sequential CPU.
Scan On	<Ctrl> S	Turns Scan mode on, causing UltraView 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.
Display label	<Ctrl> D	Turns computer label on if it was off, and on for fadeout time if it was off.
Send null to mouse	<Ctrl> N	Used to re-synchronize PS/2 mouse which has gotten out-of-sync.
Reset command	<Ctrl> R	Resets and enables mouse and keyboard, enables PS/2 mouse on currently selected CPU.
Screen saver wait	<Ctrl> V xxx <Enter> where xxx is time in seconds from 0-999.	Sets time in seconds with no keyboard or mouse activity when screen saver is turned on. Video is reactivated when any key is pressed or mouse is moved.
Keep settings	<Ctrl> K	Tells UltraView to save all current settings in flash memory.

TROUBLESHOOTING

1. **CPU does not boot, keyboard error received**
   CPU does not boot, mouse error received
   a. Cable is loose, reseat 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 UltraView is defective, try using another port on UltraView. 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.

2. **Mouse driver does not load.**
   a. If PS/2 type mouse, CPU must be connected to UltraView or mouse at boot-up time in order for mouse to be recognized by CPU. Re-boot computer with UltraView 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.

3. **Can't switch CPUs from keyboard**
   a. CPU keyboard and mouse not configured.
   b. Power to UltraView was removed for less than three seconds possibly causing keyboard to lock up. Disconnect keyboard and plug it back in.
   c. 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 Unix computers, and 2 for all others. The default setting of the UltraView 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.
   d. If PS/2 type keyboard and mouse cables may be reversed.
   e. Not using left control. Using numeric keypad instead of keys on top row. Not releasing control key before typing in number. Waiting too 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.
   b. UltraView 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.
   c. PS/2 mouse was not connected when UltraView powered up or has been disconnected and reconnected. Issue the reset command or

reconfigure the mouse.

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, reseat cable.

    b. Monitor not capable of synching 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.

    d. 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*.

    e. Cable is defective, try using cable from another CPU if problem goes away cable is defective.

    f. Port on UltraView is defective, try using another port on UltraView. 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.

11. On-screen display not synchronized

    a. No video from computer and resolution setting not configured correctly.

    b. No TTL composite sync or separate horizontal and vertical sync from computer. Current on-screen display does not support sync-on-green. Call technical support for details.

SERVICE INFORMATION

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 Rose Electronics Technical Support Department.

Reset to factory default

To reset the UltraView to its factory default settings hold the **–** switch in at power up. Keep it pressed in until the unit switches to the last port on the unit, port 4 (on a 4-port unit), port 8 (on an 8-port unit), and so on. If the monitor is connected, various diagnostic messages will appear. If you release the switch quickly after turning the power on, the memory will not be reset and you can observe the diagnostic messages. The messages indicate the firmware revision levels and on-board diagnostic test results.
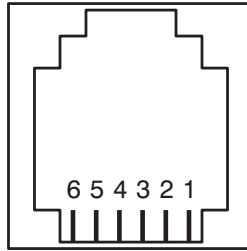
Appendix A. CPU/MKM pinout specification
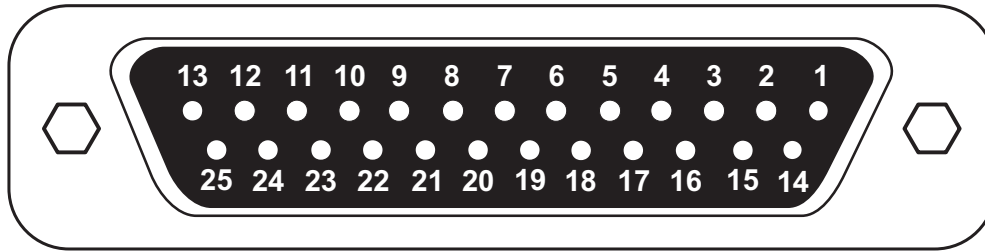
DB-25 Female Connector

Pinouts for UltraView 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 Clock
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	Audio in/out	Audio in/out	Audio (Multi-platform only)
18	Audio in/out	Audio in/out	Audio (Multi-platform only)
19	Audio in/out	Audio in/out	Audio (Multi-platform only)
20	Audio in/out	Audio in/out	Audio (Multi-platform only)
21	-V	-V	Unreg -12V
22	Ground	Ground	Digital Ground
23	Ground	Ground	Digital Ground
24	+V	+V	Unreg +12V
25	RS232-in	RS232-out	Serial Data

Appendix B.   RS232 pinout specifications

```
     _____
    |    _____    |
    |   |        |   |
    |   |        |   |
    |   |        |   |
    |   |        |   |
    |___|        |___|
    |                |
    |  6 5 4 3 2 1   |
    |_|_|_|_|_|_|_|__|
      | | | | | |
```

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.   General specifications

SIZE (Width x Height x Depth)	M (mini)	8.8" wide x 4.85" deep x 1.75" high 22.35 cm. x 12.32 cm. x 4.44 cm.
	L (low)	13.2" wide x 4.85" deep x 1.75" high 33.53 cm. x 12.32 cm. x 4.44 cm.
	H (full)	13.2" wide x 4.85" deep x 3.50" high 33.53 cm. x 12.32 cm. x 8.89 cm.
WEIGHT Includes transformer, manual, and packaging	M (mini) 2-port and 4-port	4 lb. (1.8 kg.)
	L (low) 8-port	6 lb. (2.7 kg.)
	H high) 4-port and 8-port	7 lb. (3.2 kg.)
	H (high) 12-port and 16-port	8 lb. (3.6 kg.)
ENVIRONMENTAL	0-55 C°, 10-90% relative humidity non-condensing	
TRANSFORMER INPUT	117 VAC power adapter supplied 230 VAC optional	
TRANSFORMER OUTPUT	M (mini) 17VAC CT, 700ma L (low) 17VAC CT, 700ma H (high) 17VAC CT, 1400ma	
CPU/MKM CONNECTORS	DB25 Female	
CHASSIS	Fully shielded, black painted steel	
CONTROLS	Power switch, - switch, + switch	
INDICATORS	1 power LED, 4-16 select LED, 4-16 CPU power LED	

Appendix D.   Factory default settings

Setting	Default
Keyboard-Mouse type and CPU keyboard-mouse type	PC models: PC-PS/2 Apple models: Apple ADB Sun models: Sun 5 Multi platform models: PC-PS/2
CPU names	Computerxxx where xxx is computer number
Scan Time Interval	5 seconds
Power on scan	Off
Typematic Rate (PC keyboard)	20 (10.9 chars/sec actual)
Typematic delay (PC keyboard)	Fast (500 milliseconds)
Maximum ports	Same as physical number of ports
Expansion width	16
Expansion units	0
Color scheme	Aquarium
Resolution	PC and multi-platform: 640x480 60Hz Sun:1152x900 66Hz
Screen saver	Fireflies
Screen saver timeout	120 seconds
Computer select window Background color	Transparent blue
Computer select window Text color	White
Computer select window Position	X=3 Y=3
Computer label Background color	Transparent magenta
Computer label Text color	Yellow
Computer label Position	X=3 Y=90
Show computer number	Yes
Fade out	20 seconds
Font	16x32 classic
Caps/Numlock/Scroll	Numlock On

Appendix E.   Cables and rack mounts

Description	Part Number
Monitor–Keyboard–Mouse Adapter Cables	
VGA–AT keyboard–Serial (9) mouse to DB-25M	CAB-VX0509Mxx*
VGA–PS/2 keyboard–PS/2 mouse to DB-25M	CAB-VX0606Mxx*
Apple video–keyboard–mouse to DB-25M	CAB-AV0400Mxx*
Coax VGA–AT keyboard–Serial (9) mouse to DB-25M	CAB-C1V0509Mxx**
Coax VGA–PS/2 keyboard–PS/2 mouse to DB-25M	CAB-C1V0606Mxx**
Coax Apple video–keyboard–mouse to DB-25M	CAB-C1AV0400Mxx**
Coax Sun video–keyboard–mouse to DB-25M	CAB-SC0800Mxx**
Coax VGA-Sun keyboard-Sun mouse	CAB-C1V0800Mx**
CPU Adapter Cables	
VGA–AT keyboard–Serial (9) mouse to DB-25M	CAB-VX0509Cxx*
VGA–PS/2 keyboard–PS/2 mouse to DB-25M	CAB-VX0606Cxx*
Apple CPU video–keyboard–mouse to DB-25M	CAB-AV0400Cxx*
Coax VGA-AT keyboard–Serial (9) mouse to DB-25M	CAB-C1V0509Cxx**
Coax VGA-PS/2 keyboard–PS/2 mouse to DB-25M	CAB-C1V0606Cxx**
Coax Apple video–keyboard–mouse to DB-25M	CAB-C1AV0400Mxx
Coax Sun CPU video keyboardmouse to DB-25M	CAB-SC0800Cxx**
Other cables	
4-conductor RJ11 cable to connect PC to UltraView's RS232 serial port. Used with DB25 or DB9 adapter shown below.	CAB-04RJxx*
25 pin female DB25 adapter for UltraView serial port	ACC-PCRX
9 pin female DB9 adapter for UltraView serial port	ACC-ATRX
UltraView-to-UltraView Expansion Cable for connecting slave units to master units for system expansion	CAB-C1VSMMxx*
*Available in standard lengths of 1, 5, 10, and 20 feet Replace *xx* with desired length.	
**Available in 1, 5, 10, 20, 35, 50, 75, and 100 foot lengths. Replace *xx* with desired length.	

Rackmount kits			
	Width		
Chassis size	19" width	23" width	24" width
Chassis M (mini)	RM-U19M	RM-U23M	RM-U24M
Chassis L (low)	RM-U19L	RM-U23L	RM-U24L
Chassis H (high)	RM-U19H	RM-U23H	RM-U24H
Kit comes with 2 side brackets and 4 switch to bracket mounting screws			

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