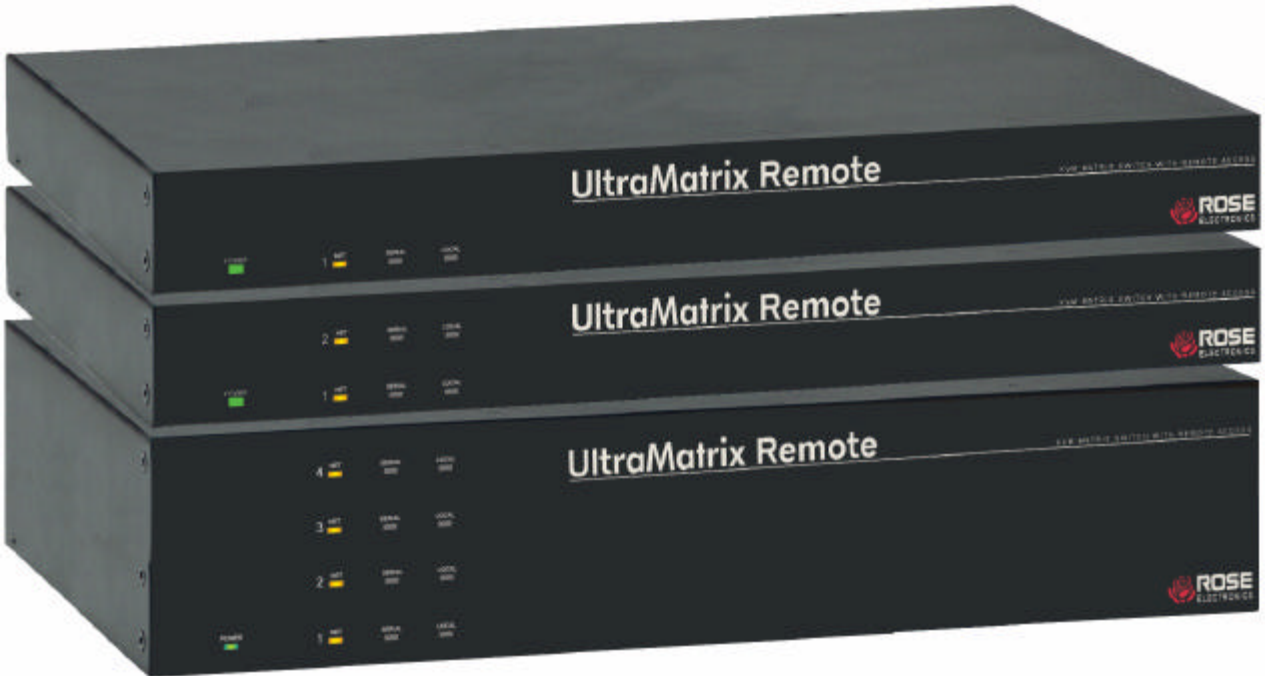


# UltraMatrix Remote™

KVM MATRIX SWITCH WITH REMOTE ACCESS

## INSTALLATION AND OPERATIONS MANUAL



10707 Stancliff Road  
Houston, Texas 77099

Phone (281) 933-7673  
[www.rose.com](http://www.rose.com)

## Limited Warranty

Rose Electronics warrants the UltraMatrix™ Remote 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 B 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.

IBM®, AT, and PS/2 are trademarks of International Business Machines Corp.  
Microsoft® and Microsoft Windows™ are registered trademarks of Microsoft Corp.  
Apple, Macintosh, and ADB are trademarks of Apple Computer, Inc.  
Sun is a registered trademark of Sun Microsystems Inc.  
Any other trademarks mentioned in this manual are acknowledged to be the property of the trademark owner.

Copyright © Rose Electronics 2004. 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.

Rose Electronics Part # MAN-UMR – 1.0  
Printed In the United States of America ■ Revision 1.0

# FCC/IC STATEMENTS, EU DECLARATION OF CONFORMITY

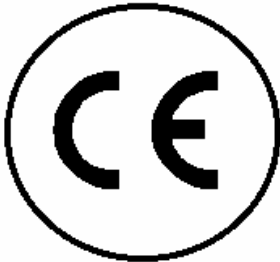
## FEDERAL COMMUNICATIONS COMMISSION AND INDUSTRY CANADA RADIO-FREQUENCY INTERFERENCE STATEMENTS

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This digital apparatus does not exceed the Class A limits for radio noise regulation of industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

## EUROPEAN UNION DECLARATION OF CONFORMITY ACCORDING TO COUNCIL DIRECTIVE 89/336EEC



This equipment is in conformity with the requirements of the European EMC directive 89/336/EEC in respect of:  
EN55022: (Class A)  
EN50082-1 / EN60555-2, and  
The Low Voltage Directive.

# TABLE of CONTENTS

## Contents

Disclaimer .....	1
About this manual .....	1
Introduction .....	1
Features.....	2
Upgradeability.....	2
Security .....	2
Flexibility .....	2
On-screen display technology.....	2
Compatibility.....	2
Cable requirements .....	3
Package contents .....	3
Rose Electronics web site.....	3
UltraMatrix Remote Models.....	4
Rear Panel .....	4
System overview.....	5
UltraMatrix Remote Installation.....	6
Connecting the hardware.....	6
Connecting the KVM station .....	6
Connecting to the network.....	6
Connecting the computers.....	6
Configuring the Unit.....	7
Menu structure .....	9
Main Menu.....	10
Configure System menu .....	11
“System settings”.....	11
Configure password .....	11
Starting computer number .....	11
Maximum computers.....	12
PC keyboard rate (chars/sec .....	12
PC keyboard delay.....	12
Sun keyboard language.....	12
Menu color scheme .....	12
Screen saver .....	12
Screen saver time (seconds) .....	13
Background / Text color.....	13
Position .....	13
Fadeout (seconds) .....	13
Configure Computer menu.....	14
Computer name .....	14
Keyboard .....	15
Mouse.....	15
Configure KVM menu.....	16
KVM name .....	16
Resolution.....	16
Start.....	17
User.....	17
Configure User menu.....	18
User name .....	18
Password .....	18
Profile .....	18
Configure profile menu.....	19
Name.....	19
Access .....	19
Mode.....	19
Share.....	20
Scan .....	20

Logout .....	20
Configure group menu.....	21
System Status display.....	23
Computers.....	23
Power.....	23
Pos (Position).....	23
Ver (Version).....	23
KVM.....	23
CPU.....	23
User.....	23
Status.....	23
Save menu.....	24
Connecting the expansion units.....	28
Serial port usage (RS232).....	33
Connecting the Serial Cable.....	33
Setting up Windows HyperTerminal.....	33
Starting a serial communication session.....	33
Serial menu options.....	34
Option 1. Change Starting Computer (From card #1 only).....	34
Option 2. Change the serial port baud rate.....	34
Option 3. Receive new main program or kernel from serial port.....	34
Switching using the serial port.....	36
Serial device support.....	37
Remote Viewer Installation.....	39
Software Installation.....	39
Pass-through mode.....	40
Full-screen mode.....	40
Question mark help.....	40
Viewer configuration.....	40
Configuring the Viewer for the UltraMatrix Remote model.....	43
Starting the Viewer program.....	44
Connecting.....	44
Scrolled view.....	48
Scaled view.....	48
Auto Size.....	48
Single.....	48
Quad.....	48
Color.....	48
Gray.....	48
Black and White.....	48
Toolbar.....	49
Status Bar.....	49
Auto Size Now.....	49
Full Screen.....	49
Refresh.....	49
Pass-through.....	49
File menu.....	50
Shortcuts menu.....	50
Help.....	51
Maintenance and Repair.....	52
Technical Support.....	52
Safety and EMC Regulatory Statements.....	54

## Figures

---

Figure 1. Typical Application.....	5
Figure 2. Quad screen mode.....	5
Figure 3. Configure Login screen.....	7
Figure 4. Network configure login screen.....	8
Figure 5. Main menu.....	10
Figure 6. Configure system menu.....	11
Figure 7. Configure computer menu.....	14
Figure 8. Configure KVM menu.....	16
Figure 9. Configure User menu.....	18
Figure 10. Configure Profile menu.....	19
Figure 11. Configure Group menu.....	21
Figure 12. System Status display.....	23
Figure 13. Save menu.....	24
Figure 14. Serial menu.....	34
Figure 15. Serial support.....	37
Figure 16. Viewer Set-up Wizard.....	39
Figure 17. UltraMatrix Remote Viewer / Icon description.....	40
Figure 18. Connections menu.....	41
Figure 19. Security.....	42
Figure 20. Configure KVM switch.....	43
Figure 21. Connecting.....	44
Figure 22. Switch connection.....	46
Figure 23. Quad screen mode.....	47

## Appendices

---

Appendix A – Specifications.....	56
Appendix B – Parts and cables.....	56
Appendix C – RackMount.....	57
Appendix D – KeyCodes.....	58
Appendix E – Import file format.....	58
Appendix F – UltraMatrix Remote firmware upgrade.....	59
Appendix G – Viewer software upgrade.....	59

# Introduction

## Disclaimer

While every precaution has been taken in the preparation of this manual, the manufacturer assumes no responsibility for errors or omissions. Neither does the manufacturer assume any liability for damages resulting from the use of the information contained herein. The manufacturer reserves the right to change the specifications, functions, or circuitry of the product at any time without notice.

The manufacturer cannot accept liability for damages due to misuse of the product or other circumstances outside the manufacturer's control. The manufacturer will not be responsible for any loss, damage, or injury arising directly or indirectly from the use of this product.  
(See limited warranty)

## About this manual

This manual covers the installation, configuration, and the operation of the UltraMatrix Remote series switches. The installation consists of installing and configuring the unit, connecting the computers/servers, and installing and configuring the viewer software on a network workstation.

## Introduction

Thank you for choosing Rose Electronics® UltraMatrix Remote™ KVM switch with remote access capabilities. The UltraMatrix Remote switch is the results of Rose Electronics commitment to providing continued state-of-the-art switching solutions for today's demanding workplace. The UltraMatrix Remote has proven to be a valuable investment for all types of businesses that have the need to monitor, maintain, and access information from multiple computer systems locally, over your network, or from anywhere in the world. Its use in large computer facilities gives the IT professional the added flexibility to remotely monitor and maintain hundreds of systems, running on different platforms, from one or multiple KVM stations. The UltraMatrix Remote is the common sense switching solution that provides the flexibility, integrity, and security required for today's business environment.

NOTE: A **K**eyboard, **V**ideo monitor, and **M**ouse are referred to through this manual as a **KVM** station

The UltraMatrix Remote's advanced on-screen display (OSD) menus guide you through the configuration process with on-screen information for each configuration section, making it easy to configure the UltraMatrix Remote, the KVM stations, the computers, the remote viewer, and security for the system. There are additional configuration parameters that can be used to personalize the look of the menus and dialog boxes. A help line is provided for each menu selection giving a brief explanation of the selected menu item.

Rose Electronics UltraMatrix Remote switches are designed to meet your switching needs, whatever your system demands are, one user or multiple users, one computer or hundreds. All models offer standard features that allow for easy, secure, and complete access to as many as 1,000 computers from one or multiple KVM stations.

Reliability, security, flash memory technology, state of the art KVM switching technology, and other features ensure the UltraMatrix Remote will streamline your data center or server room and simplify the maintenance, access and updating of your systems.

## Features

---

- Available in several different models designed to meet your remote access needs
- Connect to remote computers locally or from any workstation on your network
- Local KVM port for configuring the UltraMatrix Remote and direct access to the connected computers
- Video resolution up to 1280 x 1024
- Powerful and expandable to 1,000 computers
- Solid state embedded unit has no disk drive for maximum reliability

## Upgradeability

- Free lifetime base firmware upgrades, based on flash memory technology provide new features and improvements. Base firmware upgrades are available from our web site at [www.rose.com](http://www.rose.com).

## Security

- Security system with login requirements, computer access control and data encryption
- Unique configuration password for persons authorized to perform configuration maintenance
- User names and passwords allow controlled access to computers with sensitive information, system data, or restricted applications
- Computers can be assigned to a unique group, allowing authorized access only
- Four connect modes; View, Share, Control, and Private provide flexibility in configuring the UltraMatrix Remote to conform to your security requirements
- Profiles can be defined and assigned to each user that defines which computers they have access to and the connect mode

## Flexibility

- Modular design makes for easy installation, maintenance, and expandability
- Plug-in expansion boards make the UltraMatrix Remote easy to extend to other switches
- Pre-configuration of the switch allows for installation without powering most computers/servers down
- Switching to computers can be done by keyboard commands, an on-screen list of computers, or by commands through the RS232 serial port
- Multi-language capabilities
- Integrated auto-switching power supply accepts 90-240 VAC sources

## On-screen display technology

- Advanced on-screen display makes configuration and computer switching easy
- Scaling, scrolling, auto-size, quad screen, and scanning features
- The remote video pops-up over the computer application display or is automatically generated
- Easy to use menus guide you through the configuration process
- The connection status for all computers can be displayed
- Multi-lingual OSD (English, French, German, and Spanish)
- Menus and display windows can be configured with solid or transparent colors
- One of four screen saver options can be selected

## Compatibility

- A variety of hardware platforms can be connected simultaneously to the UltraMatrix Remote without interference, including PCs, Sun systems, IBM RS/6000, HP, DEC, SGI, serial devices such as routers and hubs, and others
- Full keyboard and mouse emulation and video resolutions up to 1280 x 1024 ensures trouble-free access to most software applications
- Serial support using VT100, VT102, and VT202 terminal emulation
- Standard TTY mode automatically scrolls incoming data



## **Cable requirements**

The cable requirements for your system will vary depending on the types of CPUs connected to the UltraMatrix Remote and the equipment used for the local KVM station(s). A KVM cable is needed for the local KVM station, a CPU cable for each computer connected to the UltraMatrix Remote, expansion cables if the system is expanded in a BUS or RING configuration, and a cable to connect the unit your network. Rose Electronics offers a wide variety of cable types to directly connect your PC's, Sun systems, MAC computers and others. See Appendix B for cable part numbers.

## **Package contents**

The shipping package content consists of the following:

- The UltraMatrix Remote unit
- Power cord (North American shipments only)
- RJ12 serial cable
- RJ to DB9 adapter
- Installation and operations manual




CPU, KVM, and expansion cables are usually shipped separately. If the package contents are not correct, contact Rose Electronics or your reseller, so the discrepancy can be quickly resolved.


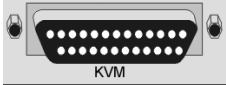
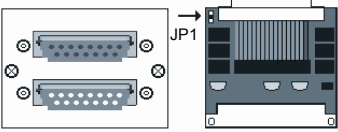

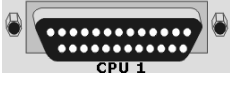

## **Rose Electronics web site**

Visit our web site at [www.rose.com](http://www.rose.com) for additional information on the UltraMatrix Remote switch and other products offered by Rose Electronics that are designed for data center applications, classroom environments, and many other switching and extending applications.

# Models

## UltraMatrix Remote Models

Rear Panel	Model Number
 <p>1 x 8 (Model number RP2-1R1X8U/E1)</p>	<p>RPx-nRmmXzzU/Ev</p> <p><b>P</b> – E = MultiPlatform P = PC model</p> <p><b>x</b> – 2 = 2x 4 = 4x</p>
 <p>2 x 8 (Model number RP2-2R2X8U/E1)</p>	<p><b>n</b> = # of remote users (0, 1, 2, 3)</p> <p><b>mm</b> = # of total users (1, 2, 4)</p>
 <p>4 x 16 (Model number RP4-4R8X16U/E2)</p>	<p><b>zz</b> = # of CPU ports (4, 8, 16)</p> <p><b>v</b> = # of expansion cards (0, 1, 2)</p>

Connector	Description	Connector	Description
	<p>Power Connector IEC320</p>		<p>KVM Connector DB25F</p>
	<p>Expansion card(s) Connectors DB15M (Output) DB15F (Input)</p>	 <p><b>RS232</b></p>	<p>RS232 Serial connector RJ12</p>
	<p>CPU Connector DB25F</p>		<p>Network connector RJ45</p>

## System overview

The UltraMatrix Remote is designed with the latest in KVM switching and remote access technology. It provides a comprehensive solution for local and remote server access. Local access is from a KVM station connected directly to the UltraMatrix Remote. Depending on your model, up to 4 local KVMs can be connected. Remote access is from any Windows based workstation on your network. An unlimited number of workstations can be set-up to access the UltraMatrix Remote, but depending on your model, a maximum of 4 remote users can be connected simultaneously without conflicts or sharing violations.

Basic installation of the UltraMatrix Remote is easy and straightforward. The installation consists of:

1. Install the hardware. (Unit, cables, CPUs/Servers, local KVM station)
2. Configuring the UltraMatrix Remote from the local KVM station for remote access (assign IP, sub-net, etc)
3. Install and configure the viewer software on a Windows based workstation on your network
4. Configure the CPU and KVM ports

The Versatility and flexibility of the UltraMatrix Remote gives you the capability of expanding the number of computers/servers that can be accessed to 1,000. The expansion can be done by adding additional UltraMatrix Remote units or other Rose Electronics KVM switches

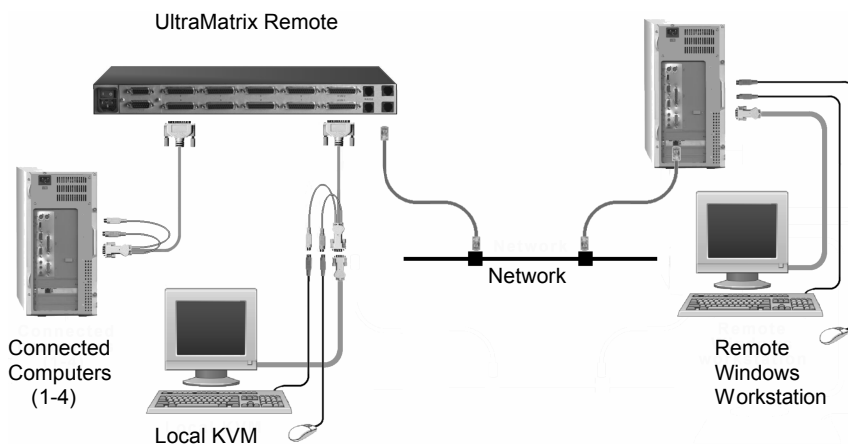


Figure 1. Typical Single Unit Application

The viewer program is designed to simplify access to the remote computers and servers. Once configured, you can connect to the UltraMatrix Remote over your network. From the Viewer program, select a pull-down menu to list the connected computers, select the computer to connect to and click on the connect icon. You will instantly see in the viewer's window, the connected computers video. Your workstation's keyboard and mouse now control the remote computer. The viewer can be switched into the quad mode and each quadrant can be connected to a computer or server. This allows you to monitor four computers/servers at the same time. Since the viewer program is a windows application, it can be started multiple times and each viewer session connected to a different UltraMatrix Remote unit. Figure 2 shows a single viewer session in the quad mode and the viewer started four times, scaled, and connected to sixteen different computers/servers.

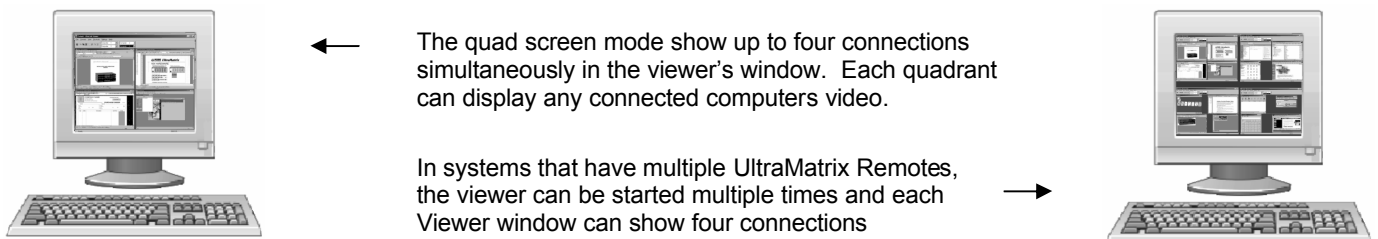


Figure 2. Quad screen mode

# Installation

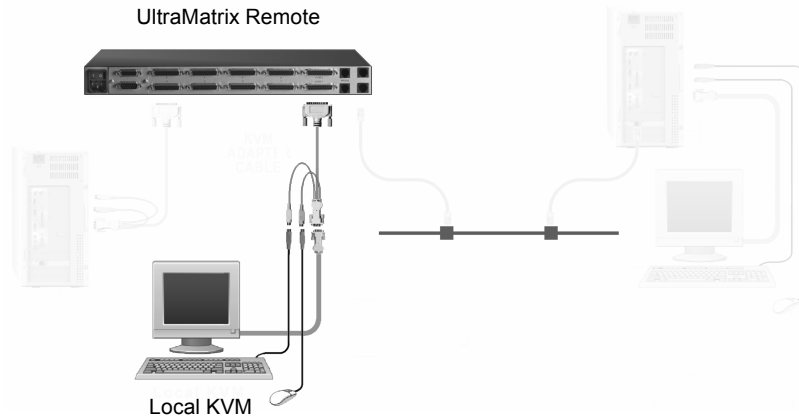
## UltraMatrix Remote Installation

The installation of the UltraMatrix Remote consists of three procedures; connecting the hardware, configuring the unit, installing and connecting the computers, and installing the viewer. The on-screen display (OSD) and the set-up wizard will guide you through the installation and configuration procedures for the unit and remote viewer.

### Connecting the hardware

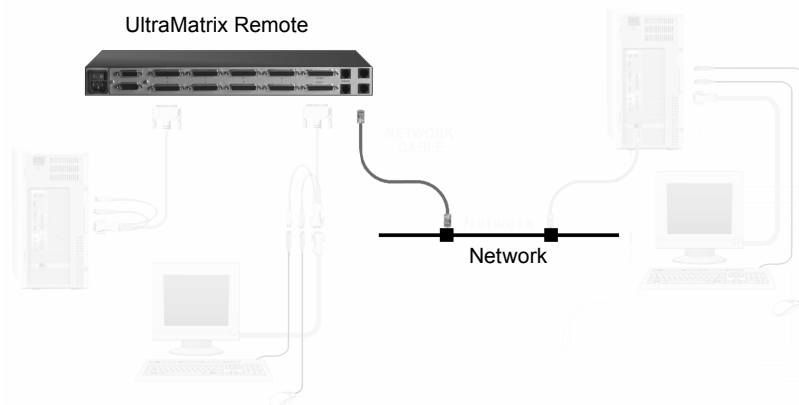
#### Connecting the KVM station

Connect a local KVM station to the UltraMatrix Remote's KVM1 connector using a KVM adapter cable that is compatible with the local KVM equipment and cable connectors. The local KVM mouse must be a PS/2 type mouse, the keyboard a PS/2 type keyboard and the monitor should be equal or better in resolution and capability than any of the connected computers.



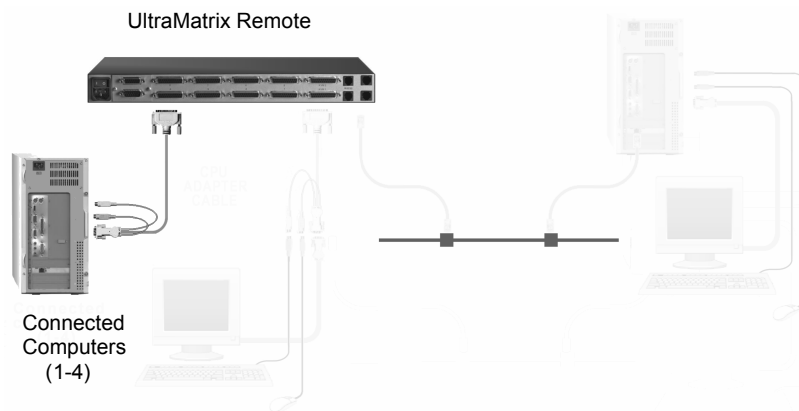
#### Connecting to the network

Connect the UltraMatrix Remote to the network using a standard RJ12 network cable. Connect the cable from the "LINK" connector to a network connector. Models with multiple network connectors, connect a cable from each "LINK" connector to a network connector.



#### Connecting the computers

Connect the computers/servers to their corresponding CPU port using a CPU adapter cable. If power must remain on a computer/server that will be connected, **DO NOT** connect that computer/server to the UltraMatrix Remote at this time. The unit should have the CPU port properly pre-configured for the correct keyboard and mouse type. (See page 25 for pre-configuration procedure)



The network workstation(s) and viewer installation is described in the viewer installation / configuration section

## Configuring the Unit

The UltraMatrix Remote must first be configured with the network information. The IP address assigned to the unit and other network information must be entered into the “Configure Login” screen and saved. To configure the Login information, make sure the unit is connected to a local KVM station and to the network. Turn on the local KVM monitor and the UltraMatrix Remote unit to configure. The “Connect Login” screen will display. The monitor may remain blank for approximately 25 seconds before the “Connect Login” screen displays. When the screen displays, **DO NOT** login, hit the F10 key to display the “Configure Login” screen and login in on this screen using the default User ID, “**admin**” and no password.

The “Connect Login” screen and “Configure Login” screens are very similar. The “Connect Login” screen has a green background and the “Configure Login” screen has a gray background. The “Connect Login” screen is used to login to the UltraMatrix Remote as a user locally. Administrator functions are not available to a user. A default administrator account exists for initial configuration of the unit. Enter the default User ID of “**admin**” (lower case) and no password.



Figure 3. Configure Login screen

When the default User ID of “**admin**” and no password are entered and validated, the network configure login screen will display (

Figure 4). From this screen, enter the needed network information, the speed / duplex data, and the equipment type connected to Com1 and Com2. Use the up/down arrow keys to select the item to change. When you select the speed/duplex field, press the page up key to display the supported values. For Com1 and Com2, also press the page up / down key to display the supported equipment.

Note: On models where the total number of remote ports are less than the total number of local port (i.e.RP2-1R2X8U - 1-remote, 2 local), the KVM ports that have no adjacent RJ45 connectors are considered local ports only. These local ports are connected directly to the KVM portion of the UltraMatrix Remote and are not routed through the remote access hardware. These ports will not require a login name and password unless security on the UltraMatrix Remote is configured to require a login.



KVM 2 (local access only) no login required unless configured  
KVM1 (Local & remote access) requires a connect login

**Configure Login**

IP address 192.168.255.255  
 Subnet mask 255.255.0.10  
 Gateway 192.168.0.10  
 TCP port 5678  
 Speed / duplex Auto  
 Com1 None  
 Com2 None

IP address, subnet mask and gateway  
 Are the standard TCP/IP settings.  
 They become effective immediately  
 Upon save and exit.

TCP port specifies a number used to  
 Listen for connection from the

Viewer program, which must be con-  
 figured with the same number. Use  
 5678 unless otherwise required.

Enter the new network settings  
 In the typical dotted notation  
 By keying in the value.

Set Speed / duplex to Auto unless  
 you  
 Are connecting to a device which  
 Requires a fixed speed or duplex  
 Setting.

Select a device for Serial 1 and/or  
 Serial 2 to receive Viewer calls



Select item

F9-Exit without saving

F10 - Save and exit

Figure 4. Network configure login screen

Enter the following configure login parameters for this product. Use the up/down arrow keys to select;

1. IP address
2. Subnet mask
3. Gateway (optional)
4. TCP port (use default of 5678 if no specific TCP port is required)
5. Speed/duplex (use page up/page down keys to display Speed/duplex options)
6. Com 1 (use page up/page down keys to display supported serial devices options)
7. Com 2 (use page up/page down keys to display supported serial devices options)

The Gateway value is optional. Use the default value of 5678 for the TCP port unless otherwise required. The TCP port value must also be entered into the Viewer program if changed from 5678. Also, use the default value of Auto for the Speed / duplex value unless otherwise required. If the serial device is unknown or unlisted, select auto-detect for Com 1 or Com 2 values.

When all values have been entered on the configure screen, press the F10 key to save the values and exit. The values entered will be saved and the **“Connect Login”** screen will display. To configure the Matrix switch portion of the UltraMatrix Remote (consisting of configuring the system, computer ports, KVM station, Users, Profiles, Group, and Language) from the **“Connect Login”** screen, enter the User ID of “admin” and no password and press enter. The screen will go blank waiting for a command. Press and release the left control key, then the F12 key. This will display the main switch configuration menu. The on-screen menu system will guide you through these configurations.

NOTE: The switch configuration can be performed locally or through the viewer on a network workstation.

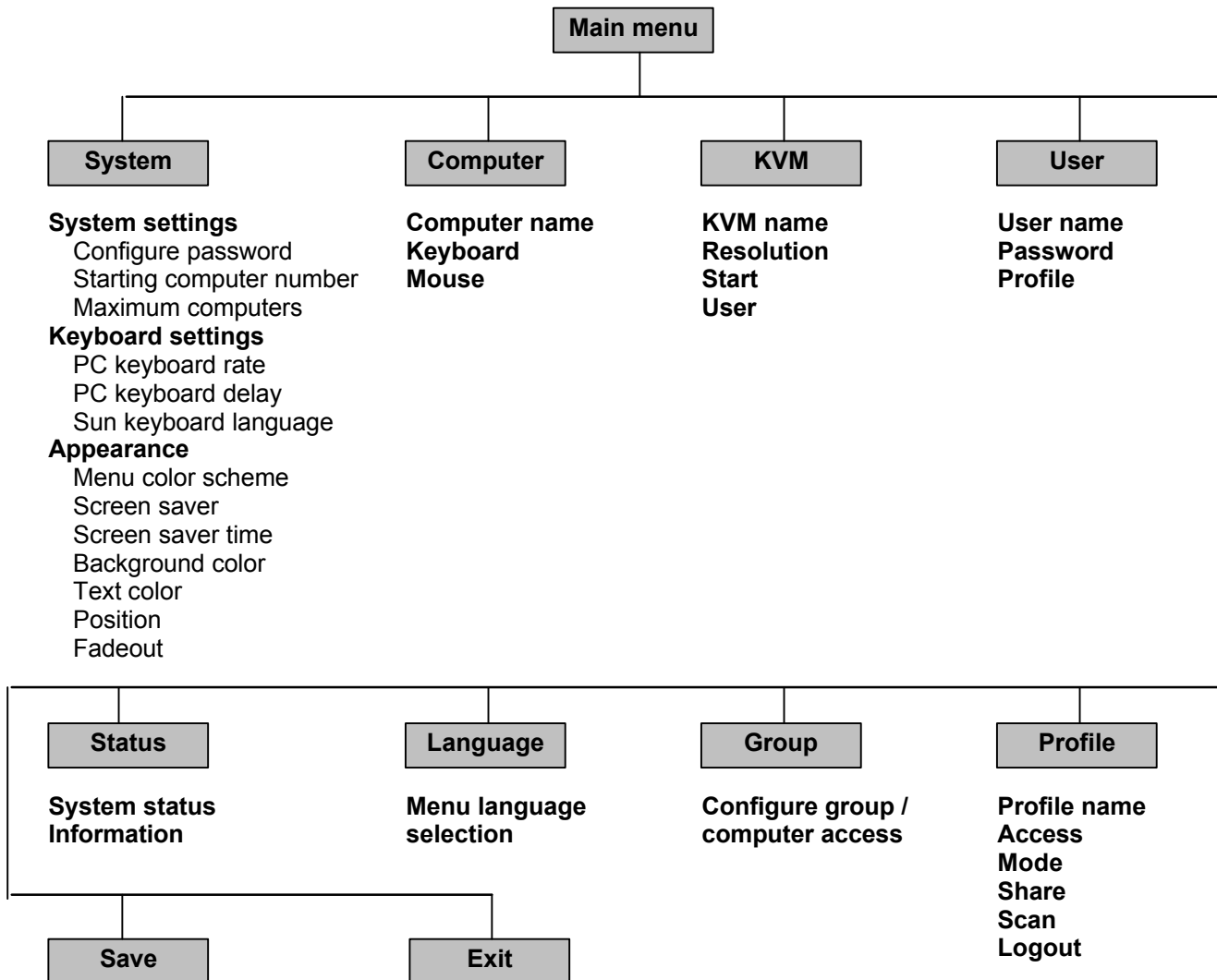
## Menu structure

To display the main KVM switch configuration menu, from the “Connect Login” screen, enter the User ID of “admin” and no password and press enter. The screen will go blank waiting for a command. Press and release the left control key, then press the F12 key to display the switch configuration menu. To navigate through the menu system, use the arrow keys to select the configuration menu needed and press [Enter]. When you press [Enter] that menu section will display, an input box will display for a new value, or a list of supported choices will display. Enter or select the information needed and press [Enter]. To return to the previous page or abort an input, press the [Esc] key.

Note: The switch configuration menus can be accessed locally or from the viewer on a network workstation. Configuring the switch parameters can be performed at either location.

Use only the numeric keys above the keyboard to enter numbered values. The numeric keypad will not work for entering numbers.

### Menu Structure



Following explains each menu section and the options for each.

## Main Menu

---

(Pressing the left control key, then F12 displays the main menu)

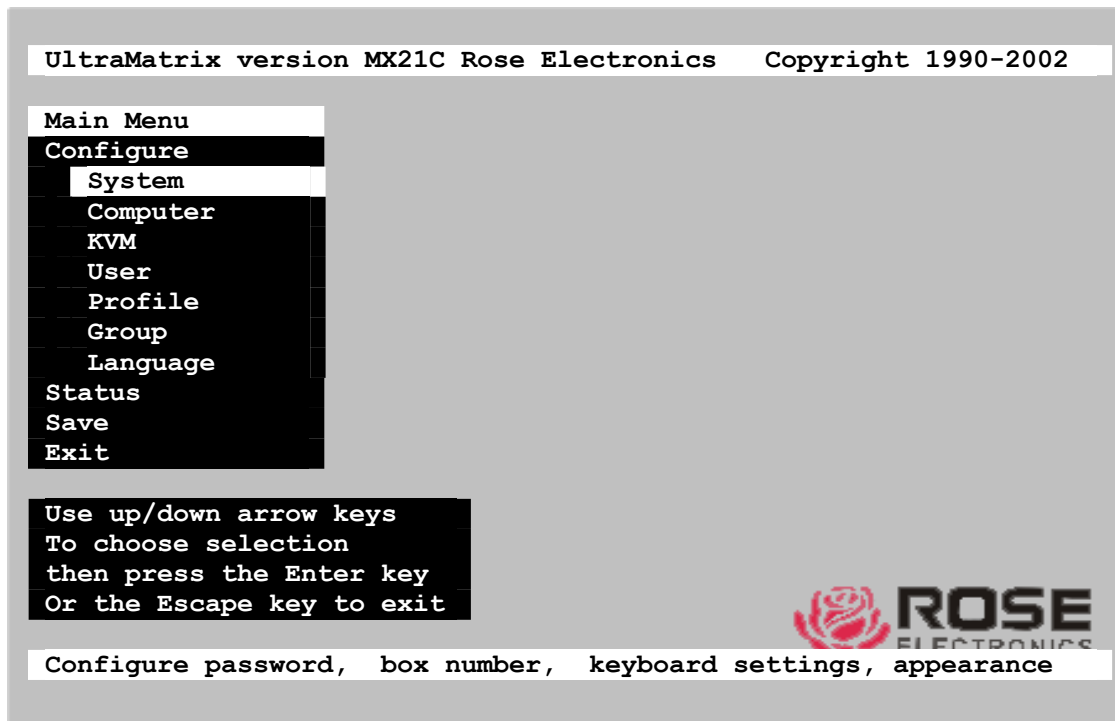


Figure 5. Main menu

The Main configuration menu is the starting point for the configuration menus. From this menu, you can configure the system, computers, KVMs, users, profiles, groups, and languages. To display the "Main menu" locally, press and release the left control [Ctrl] key, then the F12 key. The main menu will display on top of a currently connected computers video. If no computer is connected to supply the video, the display's background is black. To display the main menu from a workstation on the network using the remote viewer, the viewer must be in the pass-through mode to send the command to the UltraMatrix Remote. The pass-through mode is explained in the install / configure the remote viewer section.

The text box at the bottom of the menu screen provides a brief explanation of the menu option selected.

The following pages explain the UltraMatrix Remote menus and the options available.

**Save the changes made to any menu. If not saved, the changes will be lost when power is removed from a Unit. All menu commands must be entered within 2 seconds of each other or the command is aborted.**



## Configure System menu

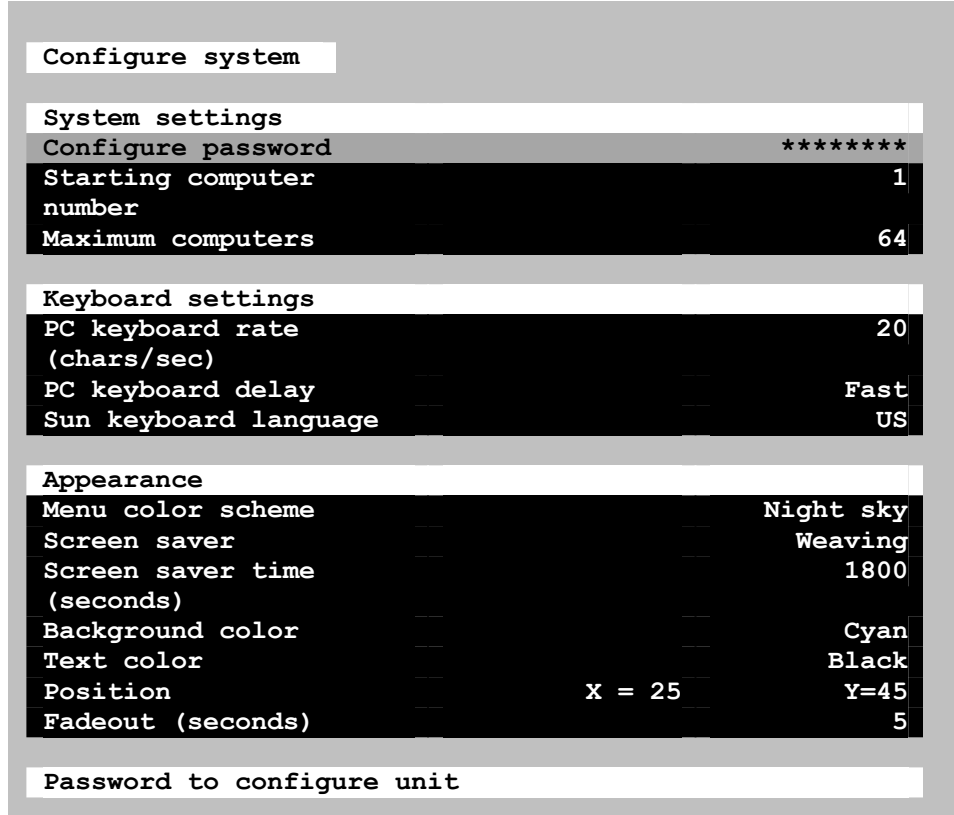


Figure 6. Configure system menu

“System settings” selections.

### Configure password (Default: no password)

The “Configure password” selection is used to add a new or change an existing administration password. This password prevents unauthorized access to the configuration menus. Passwords are case sensitive, 8 characters max.

To create or change a password, select “Configure password” and press [Enter]. An input box will display to enter the password. Type in the password and press [Enter]. Whenever the menu system is called up, this password must be entered to gain access to the configuration menus.

### Starting computer number (Default: 1)

The “Starting computer number” defines to the system, the first CPU port number for a particular UltraMatrix Remote that is configured in an expanded topology.

Switch #1’s starting computer number is always 1.

Switch #2’s number is the total RS232 ports on Unit #1 times 4 + 1.

Switch #3’s number is the total RS232 ports on Unit #1 and Unit #2 times 4 + 1 and so forth.

To enter the “Starting computer” number use the up/down arrow keys and select “Starting computer number” and press [Enter]. An input box will display for a new starting computer number. Enter the new “Starting computer” number and press [Enter].

### **Maximum computers** (Default: 64)

The “Maximum computers” value is calculated by multiplying the number of RS232 ports on all switches by 4. This value must be entered from KVM station #1 before all Units are connected in an expansion topology. When saved, this value is propagated to all connected Units. To enter the “Maximum computers” value, select it and press [Enter]. An input box will display to enter the maximum computers value. Type in the new value and press [Enter].

“**Keyboard settings**” selections.

### **PC keyboard rate (chars/sec)** (Default: 20)

This option adjusts the KVM keyboard action when you hold down a key to repeat a single character. Valid inputs are 1-31.

### **PC keyboard delay** (Default: Fast)

This option adjusts the delay between when a key is pressed and held and when it begins to send repeated characters to the selected computer.

The options are:

- Slow
- Medium
- Fast
- Fastest

### **Sun keyboard language** (Default: US)

Determines the response to a Sun computer’s query for the keyboard language type used. To change the Sun keyboard language type, select it and press [Enter]. A selection box will display showing the supported Sun keyboard language choices. Use the up/down arrow keys to select the desired language and press [Enter]. The Sun keyboard language choices are:

- |              |                  |
|--------------|------------------|
| ■ US         | ■ Espanol        |
| ■ US-Unix    | ■ Svenska/Suomea |
| ■ Francais   | ■ Franco-Suisse  |
| ■ Dansk      | ■ Schw-Deutsch   |
| ■ Deutsch    | ■ United Kingdom |
| ■ Italiano   | ■ Hankuko        |
| ■ Nederlands | ■ Tai-oan        |
| ■ Norsk      | ■ Nihongo        |
| ■ Portugues  | ■ Canadienne     |

“**Appearance settings**” selections.

### **Menu color scheme** (Default: Night sky)

Sets the colors for the configuration menus. To change the color scheme, select “Menu color scheme” and press [Enter]. A selection box will display showing the supported color schemes. Use the up/down arrow keys to select the desired scheme and press [Enter].

The menu color schemes choices are:

- Night Sky – cyan, magenta, white, and blue
- Tuxedo – black, red, and white
- Aquarium – yellow, magenta, blue, cyan, and white
- Forest – green, black, cyan, and blue

### **Screen saver** (Default: Weaving)

The screen saver automatically activates when there is no keyboard or mouse activity for an adjustable period. To change the screen saver type, select it from the menu and press [Enter]. A selection box will display showing the supported screen saver choices. Select the desired screen saver and press [Enter]. The screen saver choices are:

- Black screen
- Fireflies
- Weaving
- Bounce

**Screen saver time (seconds)** (Default: 1800 seconds)

Determines the period of keyboard or mouse inactivity before activating the screen saver. To change the screen saver time, select it from the menu and press [Enter]. An input box will display to enter a new screen saver time. Enter a new value from 0 to 9999 seconds and press [Enter]. Entering a value of 0 (zero) disables the screen saver.

**Background / Text color** (Default: Cyan / Black)

This option sets the background or text colors for the connection status and computer select screens. Colors can be one of eight solid or transparent colors. To change the background or text color, select it from the menu and press [Enter]. The color selections will display showing the solid and transparent color choices. Use the arrow keys to select the desired color and press [Enter].

The color choices are:

■ Black   ■ Red   ■ Green   ■ Yellow  
■ Blue   ■ Magenta   ■ Cyan   ■ White   (Solid or transparent)

NOTE: Do not set the background and text colors the same.

**Position** (Default: x = 25, y = 45)

This option adjusts the screen position of the connection status box. Once set, this position is maintained at all video resolutions. To change the connection status box position, select it from the menu and press [Enter]. Use the arrow keys to position the status box anywhere on the screen and press [Enter] when the desired position is reached. Do not set the screen position off the visible screen area. This could cause rainbows or bars of shaded video.

Valid position ranges are:

Horizontal: 0 – 64, Vertical: 0 – 99

**Fadeout (seconds)** (Default: 5 seconds)

Sets the amount of time the connection status box displays.

Valid fadeout times are 0 – 255 seconds. A value of zero disables displaying the connection status box; a value of 255 will cause the connection status box to always be displayed. If the connection status box does not display when switching to a computer, increase the fadeout time. Some monitors will not display the connection status box if the fadeout time is less than the time it takes the monitor to sync to a new video signal. To change the fadeout time, select it from the menu and press [Enter]. Enter a valid new time in seconds and press [Enter].

## Configure Computer menu

Configure computer			
	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

Use page up and page down keys to configure more computers  
Name of computer, up to 16 characters

Figure 7. Configure computer menu

The “Configure computer” menu allows you to change each selected computers name, keyboard, and mouse types. The left column is the logical location (port). This value is not user changeable.

### Computer name (Default: Computer x)

To change the computer name, select it from the menu and press [Enter]. An input box will display to enter a new computer name. Type in the new name and press [Enter]. Names can be 16 characters in length, case sensitive. The computer name appears on the configure group menu, the computer select list and the connection status window. A diamond character next to a computer name identifies the computer currently connected to this KVM station. Use the page up/down keys to show more computers. The page up/down functions displays in increments of 16 and will only scroll to the “Maximum computers” setting.

Computer names are also entered into the remote viewer configuration. Names entered locally are used when accessing the unit from a local KVM station. Names entered in the remote viewer on a network workstation are used when accessing the unit remotely through a network. The names can be different.

**Keyboard** (Default: PC mode 2)

To change the keyboard type for a selected computer or configure the CPU port for a serial device, use the up/down arrow keys to select the computer whose keyboard needs changing. Use the right arrow key to select the keyboard field and press [Enter]. A selection box will display listing the supported keyboard types and serial support options. Use the up/down arrow keys to select the keyboard type or serial support needed for the selected computer and press [Enter]. The choices are:

- PC1: Supports most IBM compatible PCs, PS/2 models, and PCs that do not use PC mode 2.
- PC2: Supports most PCs.
- PC3: Supports Unix workstations and servers, IBM RS/6000, SGI, HP700 or 9000 series, DEC Alpha®, or other computers.
- USB-PC: USB PC keyboard support.
- USB-Sun: USB Sun keyboard support.
- Sun: Supports Sun systems\*
- Serial 9600,N,8,1: Serial support @ 9600 Baud rate\*
- Serial 4800,N,8,1: Serial support @ 4800 Baud rate\*
- Serial 2400,N,8,1: Serial support @ 2400 Baud rate\*
- Serial 1200,N,8,1: Serial support @ 1200 Baud rate\*
- Serial 600,N,8,1: Serial support @ 600 Baud rate\*
- Serial 300,N,8,1: Serial support @ 300 Baud rate\*
- Serial 110,N,8,1: Serial support @ 110 Baud rate\*
- Serial 50,N,8,1: Serial support @ 50 Baud rate\*

\* Available on Multi-platform models only

**Mouse** (Default: PS/2)

To change the mouse type for a selected computer, use the up/down arrow keys to select the computer whose mouse needs changing. Use the right arrow keys to select the mouse field and press [Enter]. A selection box will display listing the supported mouse types. Use the up/down arrow keys to select the correct mouse type for the selected computer and press [Enter]. The supported mouse types are:

- PS/2 - 6-pin mini-Din connector with 2 or 3 buttons
- PS/2 wheel - incorporates a small wheel for special functions.
- Serial 2-button - connects to a computer's COM port.
- Serial 3-button - connects to a computer's COM port.

Note: If you set the mouse to PS/2 and the CPUs operating system is capable of supporting a wheel mouse, the mouse type will automatically be changed to PS/2 wheel.

## Configure KVM menu

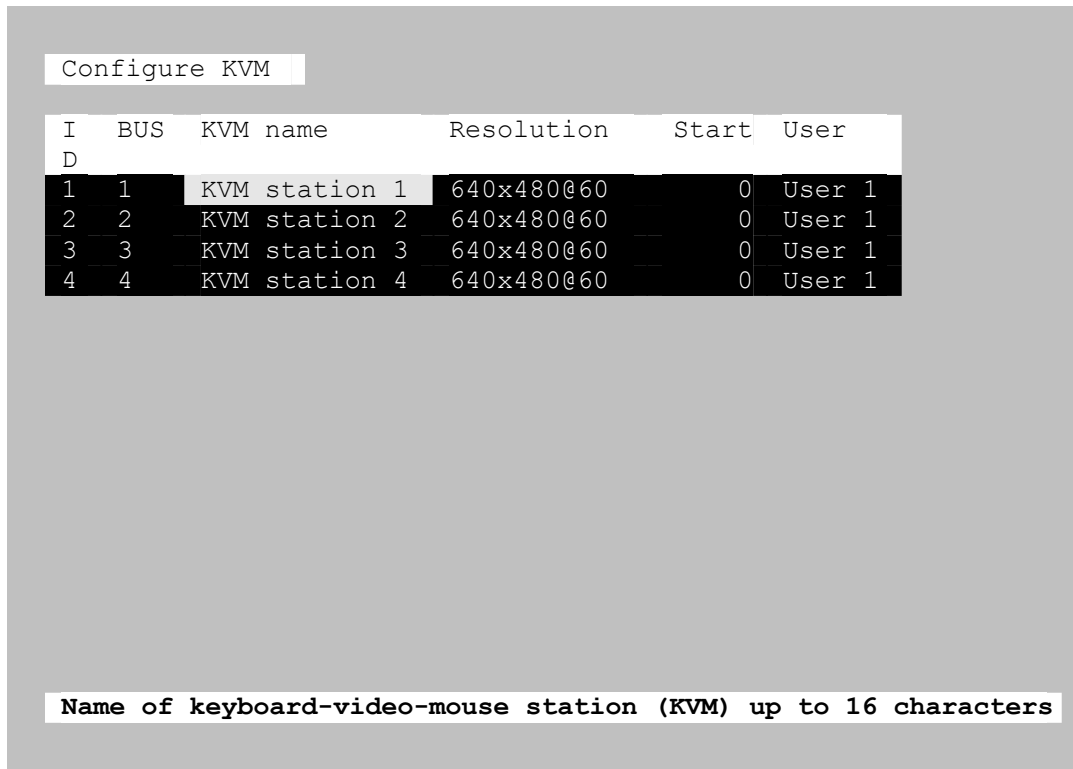


Figure 8. Configure KVM menu

Note: On the 2 user model, only KVMs 1 and 2 will display.  
On the 4 user model, KVMs 1, 2, 3 and 4 will display.

The “Configure KVM” menu allows you to change each selected KVMs name, resolution, start, and user parameters. The ID column indicates the physical location (port) the KVM is connected to. The BUS column is the KVM video bus number. These values are not user changeable.

### **KVM name** (Default: KVM Station x)

To change the KVM name, select it from the menu and press [Enter]. An input box will display to enter a new KVM name. Type in a new name and press [Enter]. KVM names can be 16 characters in length, case sensitive.

### **Resolution** (Default: 640x480@60Hz)

Selects the resolution and scan rate of the on-screen display when no attached computer video is present. If a computer video is shown, the detected video resolution from the connected computer is used.

To change the resolution for a selected KVM station, select the KVM station to change the resolution and using the left arrow key, select the resolution field and press [Enter]. A list of supported resolutions will display. Select the new resolution from the list and press [Enter]. The supported resolutions are:

- 640x480@60Hz
- 640x480@72Hz
- 640x480@75Hz
- 640x480@67Hz
- 832x624@75Hz
- 1152x900@66Hz
- 1152x900@76Hz

**Start** (Default: 0)

Assigns the CPU port number the KVM station will connect to on start up and login. 0 = no connection. To change the value, select it from the menu and press [Enter]. Type in the CPU port number the selected KVM station will connect to upon start up or login and press [Enter].

**User** (Default: User 1, 2, 3, and 4 (3 and 4 are on the 4 user model only))

This field is used to assign a specific user to a KVM station. To change the user, first select the KVM station, then select the user field and press [Enter]. A selection box will display a list of user names followed by "Login". Select the user to assign to the selected KVM station and press [Enter]. Use the page up/down keys to display more users. If "Login" is selected, the KVM user must login with their user ID and assigned password to gain access to the KVM station.

The configure user, profile, and group menus all tie together to provide access control to the computers. A group defines which computers in the system can and cannot be accessed. This group is assigned to a profile name. The profile defines how the computers (defined by the group) can be accessed. The profile is assigned to a user or users.

When a user logs on to a KVM station, their assigned profile is validated. This profile defines which group has been assigned (which computers can be accessed), what mode the user can connect to the computers with (view, share, control, private), the share time, scan time, and logout time.

The configure user, profile, and group features provide a flexible and reliable security set-up for your system.

## Configure User menu

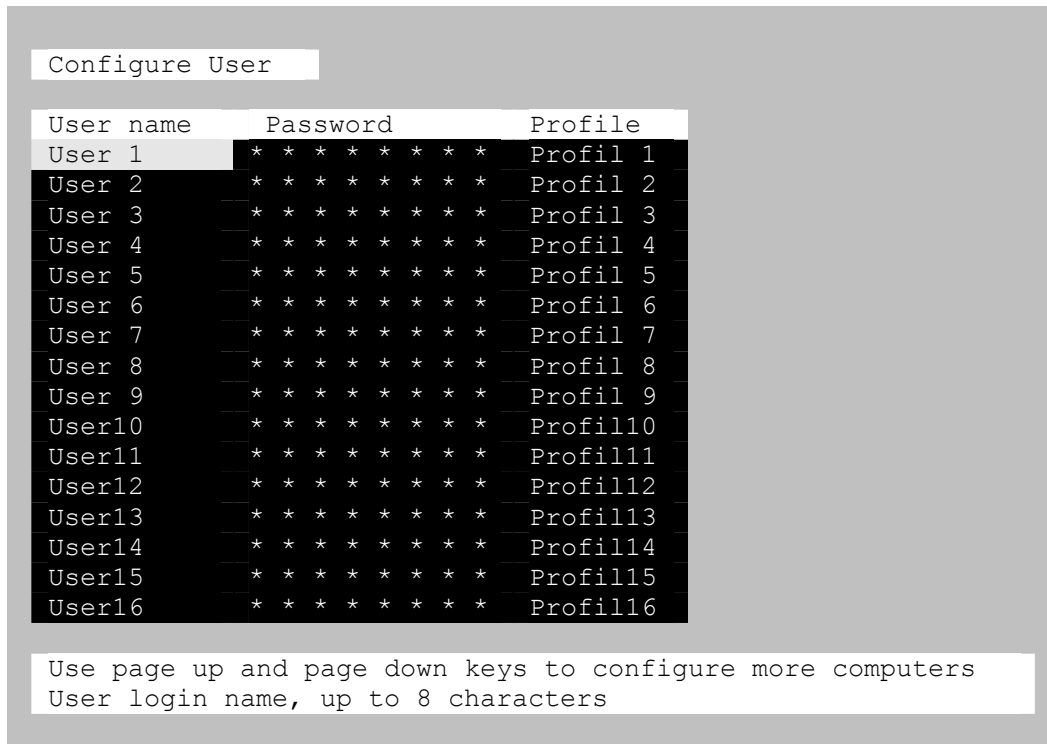


Figure 9. Configure User menu

The configure user menu is used to define a name, assign an access password, and assign a specific profile to the user. Duplicate names are acceptable, however, all persons using the same user name will have the same access rights.

### **User name** (Default: User x, where x = 1 to 80)

To change a user name, select it and press [Enter]. An input box will display. Type in a new user name (8 characters max. case sensitive) and press [Enter].

### **Password** (Default: no password)

This field assigns a unique password to a selected user. Any KVM station that has "Login" enabled, the user must enter their username and password to gain access to the KVM station. To assign or change a user password, select the user, then the password field and press [Enter]. An input box will display. Type in a password for the selected user and press [Enter]. Passwords can be up to 8 characters in length and are case sensitive.

### **Profile** (Default: Profile x, where x = 1 to 80)

This field is used to assign an access profile to a selected user.

Profiles can be defined to limit the type of access to the computers. To change an assigned profile for a selected user, first select the user, and then select the profile to change and press [Enter]. A selection box will display listing the profiles available. Select the profile to assign to the selected user and press [Enter]. Use the page up/down keys for more profiles. Profiles are defined on the "Configure profile" menu.



## Configure profile menu

Configure Profile					
Name	Access	Mode	Share	Scan	Logout
Profil 1	Group 1	Share	2	5	240
Profil 2	Group 2	Share	2	5	240
Profil 3	Group 3	Share	2	5	240
Profil 4	Group 4	Share	2	5	240
Profil 5	Group 5	Share	2	5	240
Profil 6	Group 6	Share	2	5	240
Profil 7	Group 7	Share	2	5	240
Profil 8	Group 8	Share	2	5	240
Profil 9	Group 9	Share	2	5	240
Profil10	Group10	Share	2	5	240
Profil11	Group11	Share	2	5	240
Profil12	Group12	Share	2	5	240
Profil13	Group13	Share	2	5	240
Profil14	Group14	Share	2	5	240
Profil15	Group15	Share	2	5	240
Profil16	Group16	Share	2	5	240

Use page up and page down keys to configure more profiles  
Profile name, up to 8 characters

Figure 10. Configure Profile menu

### **Name** (Default: Profil x, where x = 1 to 80)

The profile name can be changed to any name up to 8 characters in length. The name can be a specific user, a group of users within a department, a business department, or any name that defines the profile. To change the profile name, select the one to change and press [Enter]. An input box will display. Type in a new profile name and press [Enter].

### **Access** (Default: Group x, where x = 1 to 80)

This field is used to assign each profile to a group. To change the access for a selected profile, select the profile to change then select the group to change and press [Enter]. A list of groups will display. Select the group that has been set-up for the selected profile and press [Enter]. A group is set up on the configure group menu.

### **Mode** (Default: Share)

Assigns 1 of 4 modes to a profile. To change the mode, select the profile to change the mode, then select the mode to change and press [Enter]. A selection box will display. Select the mode needed and press [Enter]. The modes are:

- View – Profiles set to the view mode allow users to switch to any computer, but have no keyboard or mouse control, only view privileges.
- Share – Profiles set to the share mode allow users to take keyboard and mouse control of a computer on a first come, first serve basis. Control of the computer is based on the time-out value entered in the share column.
- Control – Profiles set to the control mode allow users to take exclusive control of a computer. No time-out value is invoked. Other users that try to connect to the same computer can only view the video. They have no keyboard or mouse control until the user with the control disconnects from the computer.
- Private – This mode is the same as the control mode except other users cannot view the video or access the computer.

**Share** (Default: 2 seconds)

This feature allows other users to take keyboard and mouse control of a computer after a specific time of no keyboard or mouse activity by a user. To change the Share time for a given profile, select the profile, then the Share to change and press [Enter]. An input box will display. Type in a new share value in seconds and press [Enter]. Valid share values are 0 to 9999 seconds. The share value is only valid if the profile mode is share.

**Scan** (Default: 5 seconds)

When a user invokes the scan function, this feature sets the time the video is displayed before switching to the next sequential computers video. To change the scan rate, select the profile, then the scan rate to change and press [Enter]. An input box will display. Type in a new scan time and press [Enter]. Valid scan times are 0 to 9999. If the video is not present during the scan mode, the scan value may be set to low and the monitor cannot synchronize to the video fast enough to display it. This usually happens with a scan value of 4 or lower. If this problem occurs, increase the scan value. 0 (zero) is a valid entry but not recommended.

**Logout** (Default: 240 minutes)

This setting disconnects and logs out a user after the set period of no keyboard or mouse activity. To change the logout value, select the profile, then the logout time to change and press [Enter]. An input box will display. Type in a new logout time and press [Enter]. Valid times are 0 to 9999 minutes. A value of 0 (zero) disables the automatic logout function. If login is enabled for a KVM station, but the Logout time is set to zero, the user remains logged in until they manually log out using the [Ctrl] L command.



## Configure Language

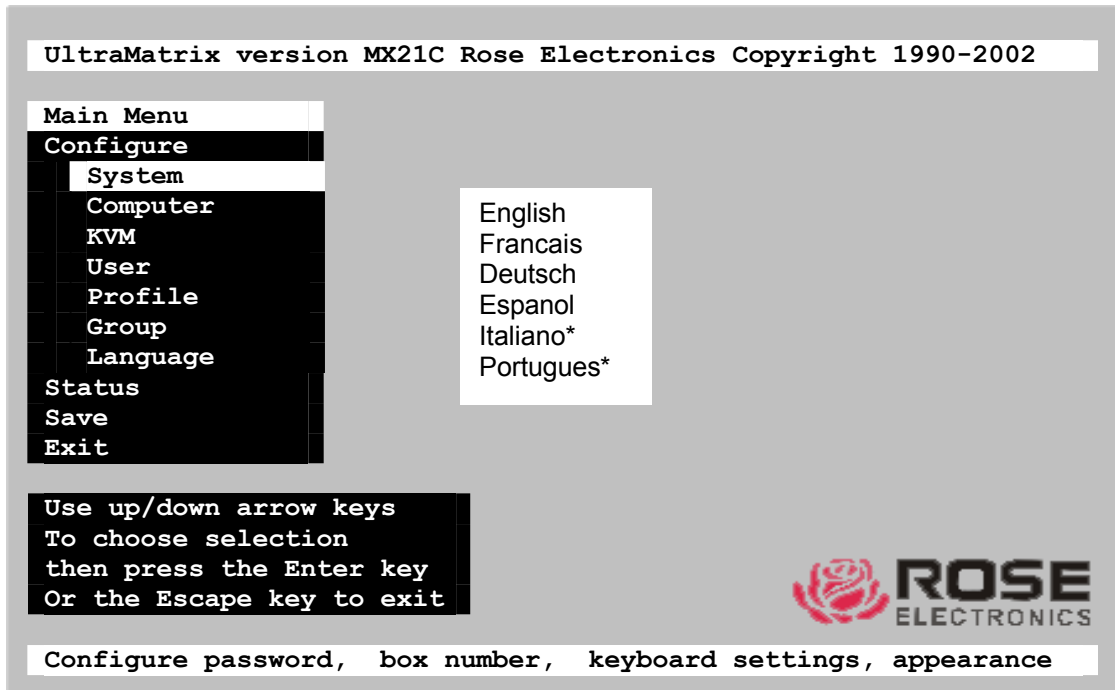


Figure 12. Configure language menu

Selecting “Language” from the “Main” menu displays a choice box of different language options. Select the language needed and press [Enter]. This changes all the menu and display information to that selected language.

The language options are:

- English
- Francais
- Deutsch
- Espanol
- Italiano\*
- Portugues\*

\* Italiano and Portugues languages are available on request.

## System Status display

System Status						
Computer	Power	Pos	Ver	KVM	CPU User	Status
1-4	■ ■ ■ ■	1	21C	PC	1 User 1	Share mode
5-8	■ ■ ■ ■	2	21C	PC	2 User 2	Share mode
9-12	■ ■ ■ ■	3	21C	PC	3 User 3	Share mode
13-16	■ ■ ■ ■	4	21C	PC	4 User 4	Share mode
17-20		1	21C	PC		No response
21-24		2	21C	PC		No response
25-28		3	21C	PC		No response
29-32		4	21C	PC		No response
33-36		1	21C	PC		No response
37-40		2	21C	PC		No response
41-44		3	21C	PC		No response
45-48		4	21C	PC		No response
49-52		1	21C	PC		No response
53-56		2	21C	PC		No response
57-60		3	21C	PC		No response
61-64		4	21C	PC		No response

Pos=Card position | Ver=Program version | KVM=PC/Sun/None  
CPU power ■ =on ■ =off | Line color Good Disconnected Error

Figure 13. System Status display

The system status display is a very powerful and useful tool when installing, monitoring, expanding, troubleshooting, or reconfiguring a system. The status screen displays reported information from all CPU cards in the system.

### Computers

Indicates the CPU port numbers for a given CPU card.

Highlighted computer numbers are the total computer ports in the system.

### Power

Each CPU card represents 4 CPU ports. These ports are represented by the four squares. The CPU ports are (Left square to right square), CPU port 1, port 2, port 3, and port 4. (Green = CPU is on, Red = CPU is off)

### Pos (Position)

Displays the slot where a CPU card in the system is installed for a given switch. Slot 1 is the bottom CPU card; slot 2 is the top CPU card for the 2 user model, slot 4 is the top CPU card for the 4 user model.

### Ver (Version)

Displays the last three digits of the firmware main program version for the CPU card.

### KVM

Indicates the type of keyboard and mouse detected if a KVM station is attached to this CPU card.

### CPU

Displays the computer number currently selected by the KVM station.

### User

Displays the users name that is currently accessing the system.

### Status

Displays the most recent connect or disconnect status for the KVM station on this CPU card.

## Save menu

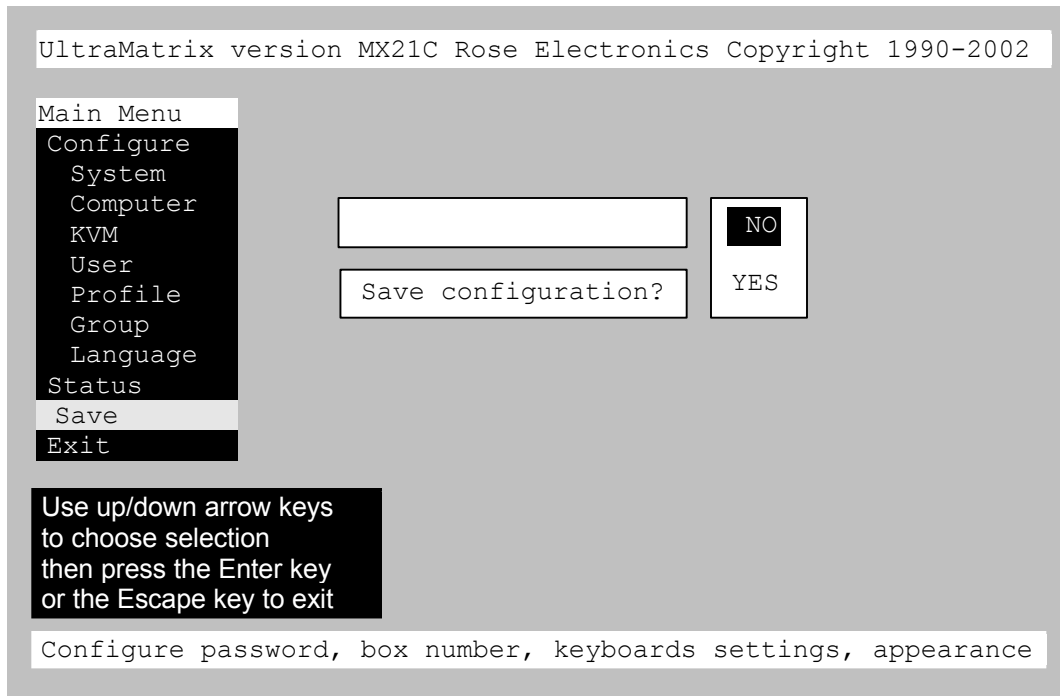


Figure 14. Save menu

When changes are made to any configuration, they must be saved in flash memory to insure that the changes will be active after a power cycle. It is recommended that all users be logged off from all systems prior to saving any configuration changes. To save the settings, select save and press [Enter]. The UltraMatrix will check and display how many CPU cards in the system to update. This is the total number of CPU cards (RS232 ports) in the system not counting the one the KVM station is connected to. (Total boards – 1)

A YES/NO selection box will display. Choose “YES” to save the changes to flash memory on all powered-on UltraMatrix switches.

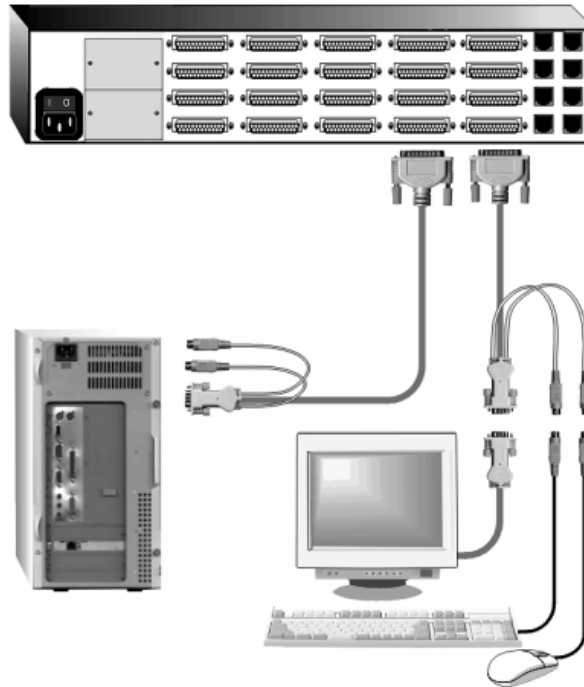
Choose “NO” for temporary or incorrect changes. The temporary settings will only be in effect as long as power is applied to the Unit. Once power is cycled, unsaved changes, other than the starting computer number, are lost and the previously saved configuration settings will be effective.

## Switch Installation – Single Unit

Please refer to the safety section before installation

The basic installation of a single UltraMatrix Remote is an easy and straightforward procedure. Perform the below steps for all computers that will be connected. It is recommended that all computers be powered off. When a computer is connected and then booted, the UltraMatrix Remote will automatically determine the keyboard and mouse types used for that computer and no pre-configuration is needed.

The connection to the network can be done at this time but it is not necessary to install a single unit.



The Unit above can be any UltraMatrix Remote model

If removing power from a computer is not practical, pre-configure the UltraMatrix Remote to define that CPU port's keyboard and mouse types. This procedure should only be done if the CPU's keyboard and mouse can be disconnected and re-connected without affecting the interface.

The default keyboard type is PC mode 2, and the default mouse type is PS/2. If the computer being connected, with power applied, uses a PC2 keyboard and PS/2 mouse, no pre-configuration is needed. If not, pre-configure the keyboard and mouse types for that CPU port before connecting the computer (steps 4a-4e).

Perform the following installation steps for each computer that will be connected to the UltraMatrix Remote. Sequentially connect the computers starting with computer #1.

#### STEPS:

(Refer to the troubleshooting section for help if needed)

1. Connect a KVM station to the UltraMatrix Remotes DB25F, KVM #1 connector using the appropriate KVM cables.
2. Turn on the KVM stations video monitors and the UltraMatrix Remote.  
(Wait for the internal diagnostic check to complete and fade out)
3. Switch KVM station #1 to the CPU port being configured (starting with CPU port #1). This is done by pressing and releasing the left control [Ctrl] key and within 2 seconds, type in the CPU port # being configured (starting with port 1) and press [Enter]. A connection dialog box will display showing the connection status.
4. Pre-configure the CPU port, if needed, as outlined in steps 4a-e if the computer being connected does not use a PC2 type keyboard or a PS/2 mouse (defaults). Pre-configure the CPU port before connecting the computer. If the computer uses a PC2 type keyboard and PS/2 mouse, connect it to the corresponding CPU port. No pre-configuration is needed.

#### Pre-Configuration procedure

- a. Call up the Configuration menu system by pressing and releasing the left [Ctrl] key, then the [F12] key. Select "Computer" and press [Enter]
- b. Select the computer to change the default keyboard and/or mouse type, and then select the keyboard or mouse field for the selected computer and press [Enter]. A selection box will display, listing the supported keyboard or mouse types.
- c. Select the correct keyboard or mouse type for the selected computer and press [Enter].
- d. Press [ESC] to return to the "Main menu" and save the changes.
- e. Connect the computer to the pre-configured CPU port.
5. Boot the computer the KVM station is connected to if the computer power was off. You should see the boot up sequence on the KVM monitor. If the computer was connected to a pre-configured CPU port with power applied, you should see that computers video.
6. Verify that the keyboard, video, and mouse on the connected computer function properly before proceeding. Verify that other KVM stations operate properly.

Switch KVM station #1 to the next sequential CPU port as explained in step 3 and perform steps 4-6 for that computer and for the remaining computers.

7. When all computers are connected and operating properly, change the "Maximum computers" value from the default value of 64 to the correct number of computers connected to the single Unit. This will limit the scanning function to the actual number of computers that are connected. Change the "Maximum computers" value as follows:
  - a. Call up the main menu ([Ctrl], F12).
  - b. Select "System" and press [Enter].
  - c. Select "Maximum computers" and press [Enter].
  - d. Enter the correct "Maximum computers" value and press [Enter].
  - e. Press [ESC] to return to the main menu.
  - f. Save the changes and EXIT.

This completes the basic installation for a single Unit. You can switch to any of the attached computers from the local keyboard by pressing and releasing the left control [Ctrl] key, typing in the computer port number to switch to and press [Enter]. You can also switch to a computer by displaying the "Computer select" menu (left control [Ctrl] key, then press the [ESC] key). Select the computer to switch to from the list and press [Enter]. You will be immediately switched to that computer.

To customize the configuration settings for the system, computers, KVM stations, users, profiles, groups, and language see the Configuration Menu section for details.

Refer to the Operation section for information on the operation of the UltraMatrix Remote.



## Switch Installation – Multiple units – “BUS” topology

A “BUS” configuration is usually used when all the users are connected to the KVM ports on Unit #1. In a “BUS” configuration, (Figure 15) the video path is from the last Unit in the configuration to the first Unit (“OUT” to “IN”). KVM users on the first Unit can access all computers on all Units. Users connected to Unit #2 can only access computers on Unit #2, 3, etc.

The connection to the network can be done at this time but it is not necessary to install multiple units.

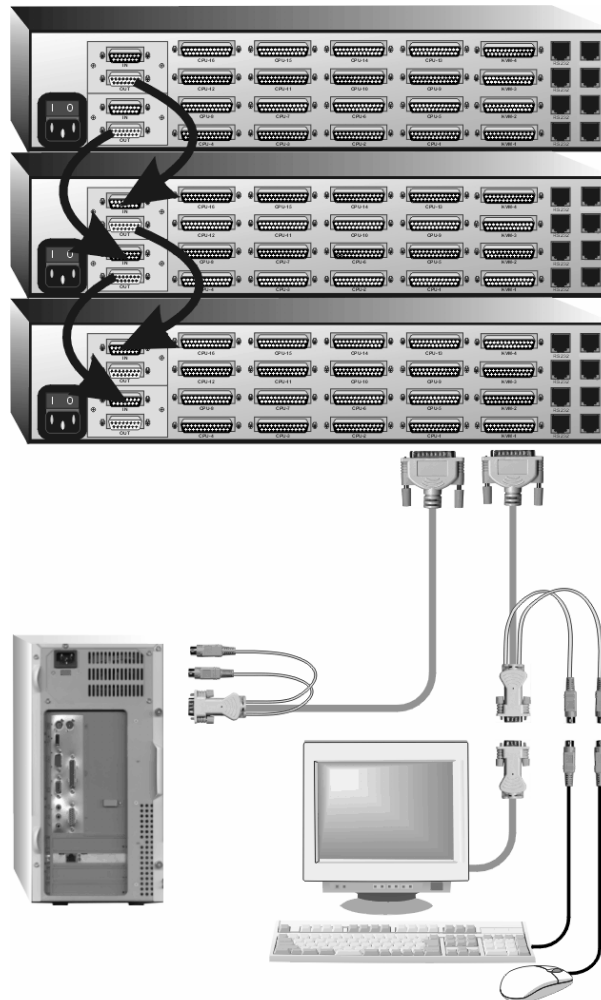


Figure 15. Bus installation

The Units can be any UltraMatrix Remote model or other Rose Electronics KVM switches  
Upper expansion card and cabling are on the 4 user model only.

The “BUS” installation procedure is very similar to the single Unit installation with the addition of connecting the expansion cables and changing two configuration parameters, the “Starting computer” number and the “Maximum computers” number. All Units in the system must have an expansion card(s) with a jumper installed on JP1.  
(NOTE: Jumper JP1 is factory installed on all expansion cards)

To start, identify the following prior to installation:

1. Which UltraMatrix Remote will be #1, #2, and so on.
2. Which computer will be #1, #2, and so on.
3. Which computers do not use a PC2 keyboard or a PS/2 mouse.
4. Which Unit and CPU port each computer will be connected to.
5. Which KVM station will be #1, #2, and so on.
6. The “Starting computer” number for each Unit.
7. The number of computers, or “Maximum computers”, that the UltraMatrix Remote will be managing.

The “Starting computer” and “Maximum computers” values are determined as follows:

### Starting computer

The “Starting computer” number will depend on which Unit is being configured. The “Starting computer” number for the first Unit is always one (default). Using Units that have 16 CPU ports, the “Starting computer” number for the second Unit is the total number of RS232 ports on the first Unit times 4 plus (+) one or 17, the third Unit would have a “Starting computer” number of 33 (Total RS232 ports on unit #1 and unit #2 times 4 plus (+) 1, and so on).

### Maximum computers

The “Maximum computers” value is calculated by multiplying the total number of RS232 ports on all units by 4. If your system consists of 10 UltraMatrix Remote units, each with four (4) RS232 ports, the “Maximum computers” number would be 160 (40 - RS232 ports x 4). The “Maximum computers” value must be entered from a KVM station and when saved, this value is propagated to all connected Units.

## Connecting the expansion units

---

The installation steps below are for all UltraMatrix Remote models.

Steps:

(NOTE: Expansion cables should not be connected at this point)

1. Verify that power is “OFF” on all UltraMatrix Remote switches.
2. Configure the “Starting computer” number for all the UltraMatrix Remote switches, starting with Unit #2 by: (Unit #1 default = 1)
  - a. Connect a KVM station to Unit #2’s KVM #1 connector using the appropriate KVM adapter cable.
  - b. Apply power to the KVM monitor and to UltraMatrix #2.
  - c. When the internal diagnostic completes, press and release the left control [Ctrl] key, then the F12 key to display the “Main menu”.
  - d. Select “System” and press [Enter].
  - e. Next, select “Starting computer number” and press [Enter]. An input box will display for a new starting computer number. Enter the correct “Starting computer” number for this Unit and press [Enter].
  - f. Press the “Esc” key to return to the “Main menu”.
  - g. Select “Save” and press [Enter]. A “YES/NO” choice box will display. Select “YES” and press [Enter] to save the changes.
  - h. Turn the power off on the UltraMatrix Remote.
  - i. Connect the KVM station to the KVM #1 connector on Unit #3.
  - j. Configure this Units “Starting computer” number and then all other Units in the system. When the “Starting computer” number has been entered for all Units, proceed to step 3.
3. Connect the KVM station to Unit #1’s KVM #1 connector and apply power to the monitor and Unit #1.
4. Enter the “Maximum computers” number
  - a. Display the main menu (left control [Ctrl] key, then the F12 key.)
  - b. Select “System” and press [Enter].
  - c. Select “Maximum computers” and press [Enter]. An input box will display for a new “Maximum computers” number. Enter the correct “Maximum computers” and press [Enter].
  - d. Press the “Esc” key to return to the “Main menu”, select “Save” and press [Enter]. A “YES/NO” choice box will display. Select “YES” and press [Enter] to save the change.
5. The next item is to connect the Units in a “BUS” configuration and verify that communication between the Units is established. To do this, call up the System status display by pressing and releasing the left control [Ctrl] key, then the F12 key.

Select "Status" from the Main menu and press [Enter]. The system status screen will display showing the following (

6. Figure 13)
  - a. Computers
  - b. Power (Power on status)
  - c. POS (Card position)
  - d. VER (Program version)
  - e. KVM
  - f. CPU
  - g. User
  - h. Status
7. The number of system CPU ports that Unit #1 has will be highlighted. If the Unit is a 16-port switch, computers 1–4, 5–8, 9–12, and 13–16 will be highlighted on the status screen.  
(Note: "System CPU ports" = total RS232 ports times 4)  
Apply power to the next unit to bus in, then connect an expansion cable (IN THIS ORDER);  
(Lower and upper expansion cards on the 4xE model)  
**From:** Unit #2's "OUT" expansion card connector  
**To:** Unit #1's "IN" expansion card connector.
8. Verify that the block of system CPU ports from Unit #2 is recognized on the status screen. If Unit #2 is a 16-port switch, computers 17–20, 21–24, 25–28, and 29–32 will be highlighted.
9. Sequentially apply power, then connect the expansion cables to the remaining switches as explained in steps 7 and 8. Always with power on the unit and from the "OUT" connector of the Unit being added to the "IN" connector of the previously installed Unit.
10. When all Bus cabling is in place and reporting properly to the status screen, save the configuration to update all boards in the system.

### Verifying the Video path

Steps 11, 12, and 13 verify that the video path is properly routed to a KVM station and all cabling is connected properly. Make sure all Units are on, all Bus cabling is in place and a KVM station is connected to UltraMatrix #1, KVM #1 port.

11. Connect a computer to any CPU port on the last UltraMatrix Remote. Switch the KVM station to this CPU port by pressing and releasing the left control [Ctrl] key, type in the CPU port number, then press [Enter]. This connects the KVM station to that CPU port.
12. Boot the computer; you should see the boot-up sequence on the KVM monitor. If no video is seen, see the troubleshooting section.
13. Connect other KVM stations, if needed, to the UltraMatrix Remote switches and verify they operate properly.

### Connecting the computers

If power must be maintained on a computer, perform steps 4a-e on page 25 to pre-configure the keyboard and mouse types, if needed, before connecting the computers. Though not required, the following steps assume that all CPU ports will be utilized and the computers installed sequentially.

(All UltraMatrix Remote switches in the system should have power "ON" and no configuration menu displaying on any KVM monitor.)

Make sure all KVM stations video monitors and units have the power applied and a KVM station on Unit #1.

14. Switch the KVM station to CPU port # "x" (starting with x=1) by pressing and releasing the left control [Ctrl] key and within 2 seconds, type in 1 (or the CPU port # being configured) and press [Enter]. A connection dialog box will display.
15. If the computer being connected does not use a PC2 type keyboard or a PS/2 mouse (defaults), pre-configure the CPU port as outlined in steps 4a-e on page 25 before connecting the computer. If the computer uses a PC2 type keyboard and a PS/2 mouse, connect it to the corresponding CPU port with the appropriate CPU cable. No pre-configuration is needed.
16. Boot the computer if power is not applied. You should see the boot up sequence on the KVM monitor. If the computer was connected to a pre-configured CPU port with power applied, you should see that computers video.

17. Verify that the keyboard, video, and mouse on the connected computer function properly before proceeding.
18. Switch the KVM station to the next sequential CPU port as explained in step 14 and perform steps 15 - 17 for this computer and for the remaining computers.

When all computers are connected to the UltraMatrix Remote switches and functioning properly, the basic installation of a “BUS” configuration is complete. KVM stations connected to UltraMatrix Remote #1 can switch to any computer in the system.

Other configuration parameters can be set-up for the system, computers, KVM stations, users, profiles, groups, and languages.

See the “Configuration menu” section for instructions on setting up these items and the Operations section for using the UltraMatrix remote.

These installation steps are a guideline for installing multiple Units in a “BUS” topology. Following these steps verify, that through the installation process, everything functions properly.

## Switch Installation – Multiple units – “RING” topology

A “RING” configuration is usually used when the users are connected to different UltraMatrix Remotes and need access to all computers. In a “RING” configuration, users on any KVM station in the ring can access all the computers in the system on a first-come-first-serve basis.

The connection to the network can be done at this time but it is not necessary to install multiple units.

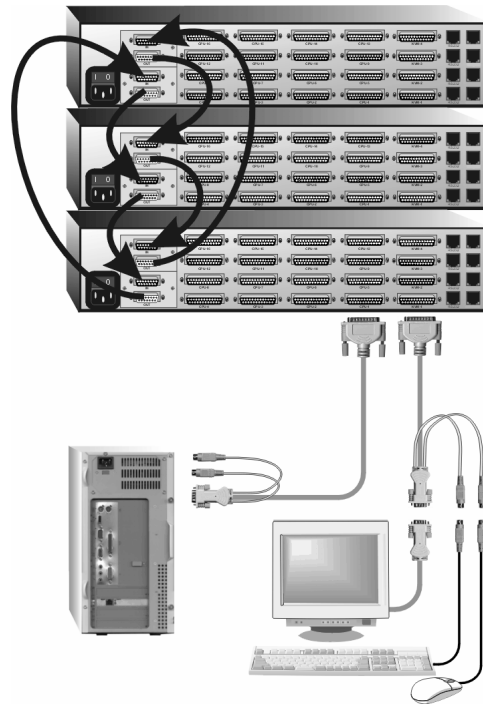


Figure 16. Ring configuration

The Units in Figure 15 can be any model

The “RING” installation procedure is very similar to installing a “BUS” configuration with the exception of removing jumper JP1 on the expansion cards on two Units and adding an expansion cable(s) from the first Unit to the last Unit. This additional expansion cable(s) from the first Unit to the last Unit creates the “RING”.

In the example used in Figure 15, removing jumper JP1 on Unit #1 and #3 divides the total ring cable length approximately in half.  
Unit #3 (IN) to Unit #1 (OUT) = 20'  
Unit #3(OUT) to Unit #2 (IN), Unit #2 (OUT) to Unit #1 (IN) = 20'.

All Units must be equipped with an expansion card(s).

To begin setting up your system in a “RING” configuration, perform steps 1 – 13 as outlined in setting up a “BUS” configuration. When doing this, keep in mind that the “OUT” expansion card connector on the first Unit will be connected with an expansion cable to the “IN” expansion card connector on the last Unit to complete the “Ring”.

Jumper JP1 must be removed from the lower expansion cards on two Units in the system to properly maintain cable termination. To identify which Units must have jumper JP1 removed, calculate the total cable length around the “RING”. This is from Unit #1’s “IN” connector, around the “RING” and back to Unit #1’s “OUT” connector.

Jumper JP1 should be removed on Unit #1 and another switch that will divide the “RING” into approximately equal cable length distances. (See Figure 16 for a typical example)

#### Steps:

(Perform steps 1-13 described in the “BUS” installation first, page 27)

(NOTE: Disconnect all cables before removing any expansion card)

1. Remove power from all UltraMatrix Remotes.
2. Connect an expansion cable from Unit #1’s “OUT” connector (top and bottom expansion cards on the 4 user model) to the last Units “IN” connector (top and bottom expansion cards on the 4 user model) to complete the “Ring”.
3. Remove the bottom expansion card on Unit #1 and the other switch that divide the “RING” into equal distances and remove jumper JP1, then replace the expansion cards, cables, and apply power to the two UltraMatrix Remotes that jumper JP1 was removed. All other Units should have power off at this time.
4. Make sure a KVM station is connected to UltraMatrix #1, KVM #1.
5. Turn on all KVM stations video monitors and apply power to all UltraMatrix Remotes. (Wait for the internal diagnostic check to complete and fade out).
6. Switch the KVM station to CPU port #1 on Unit #1 by pressing and releasing the left control [Ctrl] key, type in “1” and press [Enter].
7. Pre-configure the CPU port, if needed, as outlined in steps 4a-e on page 25 if the computer being connected does not use a PC2 type keyboard or PS/2 mouse (defaults). Pre-configure the CPU port before connecting the computer. If the computer uses a PC2 type keyboard and PS/2 mouse, connect it to the corresponding CPU port. No pre-configuration is needed.
8. Boot the computer if power is not applied. You should see the boot up sequence on the KVM monitor. If the computer was connected to a pre-configured CPU port with power applied, you should see that computers video.
9. Verify that the keyboard, video, and mouse on the connected computer function properly before proceeding.
10. Switch the KVM station to the next sequential CPU port as explained in step 6 and perform steps 7 – 9 for this computer and for the remaining computers.
11. Connect other KVM stations as needed to the UltraMatrix Remotes and verify they operate properly. (See Appendix H. for proper KVM station placement)

This completes the basic installation of a “RING” configuration.

A KVM station connected to any UltraMatrix Remotes can connect to any computer in the “RING”. Other configuration parameters can be set-up for the system, computers, KVM stations, users, profiles, groups, and languages. See the “Configuration menu” section for instructions on setting up these items.

These installation steps are a guideline for installing multiple switches in a “RING” topology. Following these steps verify, that through the installation process, everything functions properly.

Please refer to the Operations section for using the UltraMatrix Remote.

# Serial Port

## Serial port usage (RS232)

The following procedure for establishing a connection from your standalone computer or Notebook computer to the UltraMatrix Remote's serial port uses Windows HyperTerminal™. Refer to your users manual if a different communication program is being used.

To access a serial port, the following items are required:

- A serial cable (RJ12, 6-wire connector and an appropriate adapter for the computer's serial port). The serial cable and adapter are provided with each switch (Rose part number KIT-ATRX)
- A dedicated computer, Notebook computer with a serial port, or a display terminal. Using a display terminal will allow you to configure the UltraMatrix switch, however, you will not be able to upgrade new versions of firmware. The computer or Notebook must not be attached to any UltraMatrix Remote in the system being upgraded.
- A communications program such as Windows HyperTerminal.

### Connecting the Serial Cable

Attach the serial cable from the RS232 port #1 on the UltraMatrix Remote (bottom right RJ12 connector) to the COM port on your computer. This COM port must be the same communication port HyperTerminal or your communication software is configured for.

### Setting up Windows HyperTerminal

(The following instructions are using Windows 95/98; the instructions may be different for other operating systems)

Start the Windows HyperTerminal program. The "New Connection" dialog box will display requesting a name for this session. Enter a session name like "UMR serial option" and click 'OK'. Next, the "Connect To" dialog box will display. Click on the "Connect Using" down arrow to display the connect options. Select the Direct Connect option for the COM port you are using and click "OK". The COMx properties dialog box will display. Using the drop-down selection boxes, select the following values for each setting.

- Bits per second; 9600.
- Data bits; 8
- Parity; None
- Stop bits; 1
- Flow Control; Hardware

Click "OK" when all values have been entered. The HyperTerminal dialog box will display and information can be exchanged with the UltraMatrix Remote properly. You can save this setup so the next time its needed, you can select the ICON with the name you gave it and these settings will already be established.

### Starting a serial communication session

Verify that "Connected" appears in the bottom left corner of the HyperTerminal window. If "Connected" is not present, click on the "Call" icon. "Connected" should display in the bottom left corner.

Power on or cycle power on the UltraMatrix Remote and press the spacebar when the message, "Hit the spacebar within 5 seconds to get serial options menu" appears on your screen. The serial menu will appear after the diagnostic check completes. If unrecognizable characters appear, the baud rate set on the UltraMatrix Remote's serial port and the baud rate set on your computers COM port are not set to the same value. Disconnect from the Unit by clicking on the "Disconnect" ICON. Change the baud rate on your terminal or computers communication program from 9600 (set previously) to 57,600. Re-connect by clicking on the "Call" ICON. Cycle power on the UltraMatrix Remote, press the space bar, and the serial option menu will display and should be legible. The serial menu (Figure 17) enables you to perform certain configuration settings and perform flash upgrades. Following explains the serial menu options:

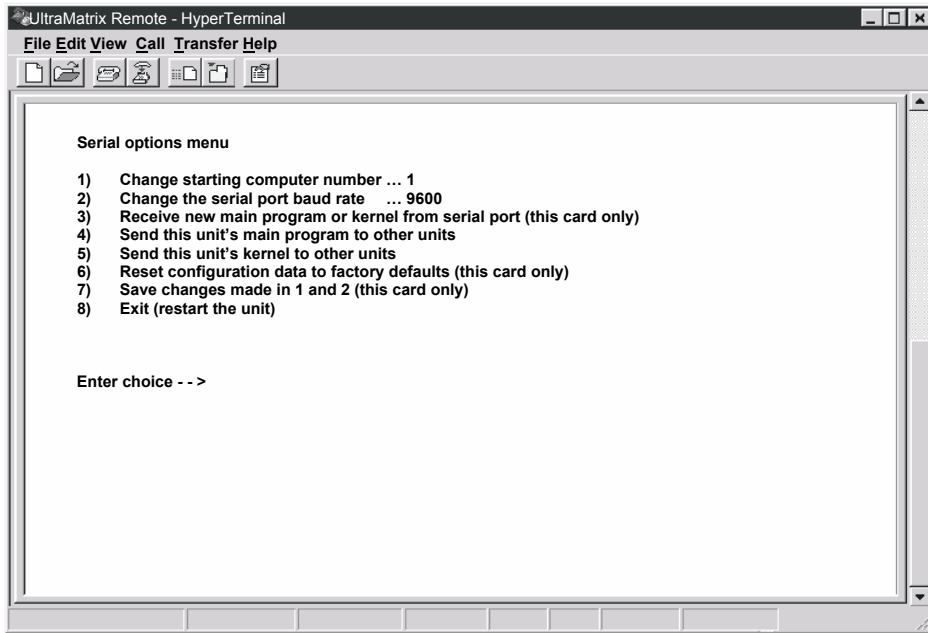


Figure 17. Serial menu

### Serial menu options

Option 3, 4 and 5 are not available when using a display terminal.

#### Option 1. Change Starting Computer (From card #1 only)

Select this option to change the starting computer number. To change the current value press 1; a prompt will display, as shown below. Type in the new starting computer number and press [Enter].

Enter the starting CPU number →

The serial option menu will display again. Select Option 7 to save the new starting computer number to flash memory. Cycle power on the UltraMatrix Remote to distribute the new value to all the other CPU cards in this switch.

#### Option 2. Change the serial port baud rate

Select this option to change the baud rate on the serial ports of the UltraMatrix Remote. The serial ports can be set to either 9600 or 57,600 (bps). The option menu shows the current serial port setting. To change this from current setting press 2. The message below will appear.

Baud rate changed to 9600 (or 57,600)  
Set baud rate of your terminal to 9600 (or 57.600) and press return.

Make sure the terminal or computers communication program's baud rate matches the new setting.

You must change or verify that the computer's baud rate matches the Units baud rate. If you are using Windows HyperTerminal on your computer, first disconnect from the UltraMatrix switch by clicking on the HyperTerminal disconnect ICON. Change the baud rate to match the UltraMatrix Remote's baud rate, then connect to the UltraMatrix Remote by clicking on the call ICON. Press [Enter] and the serial menu should display in the HyperTerminal window.

#### Option 3. Receive new main program or kernel from serial port (This card only)

When new main or kernel programs are available, they can be obtained from Rose Electronics or downloaded from our web site at [www.rose.com](http://www.rose.com). The diagnostic screen that is displayed when the UltraMatrix Remote is first turned on shows the Kernel and main program version that is presently installed.

You cannot update the flash memory using only a display terminal; you must use a standalone computer or Notebook and the new main or kernel program saved on that computer.



It is recommended that this procedure be done on Unit #1, RS232 port #1. (Lower right RJ12 connector)

To load a flash upgrade file, type 3 in the Enter choice field of the serial options menu. The following message will appear:

```
Waiting for file.....
```

Send the program or kernel file from your computer to the UltraMatrix Remote using ASCII text file protocol. From HyperTerminal, click on "Transfer" and select "Send Text File". The "Send Text File" dialog box will display. Enter the file name of the updated firmware file into the File Name box and click "Open". The file transfer function will start. While the file is being sent, periods are sent to indicate the copying progress. Once the file has been sent, you will see the message:

```
Receive successful  
Flash programming.....  
Flash programming successful
```

After the flash memory is programmed, the serial menu will display.

Updating the firmware or kernel programs does not change any of the custom settings that have been made.

You may receive one of the following errors during the file transfer function: checksum error, record error, or data error. These messages are followed by:

```
Receive failed  
Try again Y/N
```

These error messages may be caused by any of the following items:

- Corrupted firmware upgrade file.
- Loose or defective RS232 cable.
- RS232 protocol not configured correctly.
- Bad transmit or receive levels.
- Hardware problem on transmit or receive side.

Identify and correct the transmit problem and press "Y" and then [Enter] to try again and you can resend the file.

Press "N" and then [Enter] and the prompt "Hit enter to boot " appears. Press the [Enter] key to re-start the UltraMatrix remotes diagnostics with the firmware unchanged.

**Option 4. Send this Unit's Main Program to other Units.**

**Option 5. Send this Unit's Kernel to other Units.**

The main program or kernel program updates (Option 3) only have to be done on one port. Make sure power to all UltraMatrix Remotes are "ON" and they are all connected using the appropriate expansion cables.

Press 4 to send the main program to all other units, all other cards.

Press 5 to send the kernel program to all other cards.

The following messages will appear using either option 4 or option 5.

Before responding Y, make sure that the "Boards to update" number in the message above agrees with the total number of boards in the entire system minus 1. If the number does not agree, reply N, turn on the inactive UltraMatrix Units, and press 4 or 5 again. When you reply Y, the following message appears:

```
Sending flash program code to system.....
```

When complete, the system returns you to the serial options menu. Wait at least 15 seconds before restarting the UltraMatrix Remote after choosing option 4 or 5 for the program to propagate to the other cards in the system.

### Option 6. Reset to Factory Defaults (This CPU card only)

NOTE: Before resetting any CPU card to factory defaults, note the starting computer number listed on the Serial menu, Option 1. When resetting a CPU card to factory defaults, this number will be set to one (1) and must be changed back to the original value by using option 1 to change the starting computer number and then saved using option 7. In an expanded system, there cannot be two different UltraMatrix Remotes in the system with the same starting computer number.

Selecting option 6 restores the CPU card to its original factory configuration. The following message appears:

```
Flash programming . . . . .
```

When the factory defaults have been restored, the following message is displayed:

```
Reset to default successful
```

The serial options menu is then displayed, indicating that this CPU board has been reset to the factory defaults.

### Option 7. Save Changes

This option saves the configuration changes made in option 1 and 2 only to the CPU card where the serial cable is attached. It is recommended that all users be logged off from all systems prior to saving any configuration changes.

To save the configuration changes, press 7, and the following message appears:

```
Flash programming . . . . .
```

When the flash memory is updated, the following message is displayed:

```
Configuration saved successfully
```

### Option 8. Exit (Restart the Unit)

Selecting option 8 exits the serial option menu. The UltraMatrix Remote will reinitialize and the diagnostic check will run. After the diagnostic check finished, the Unit is ready to use with its new configurations. If there are more configurations needed, hit the space bar within 5 seconds and the serial menu will be brought back up to use.

### Switching using the serial port

From any RS232 port on any switch, you can switch any KVM station in the system to any computer. Connect a serial cable to the RS232 port on any Unit and to the COM port on the standalone computer. Start a communication program like HyperTerminal and connect to the UltraMatrix Remote by clicking on the "Call" ICON.

The input format to switch a KVM station to a computer is KnnnCxxxS [Enter] where nnn is the KVM number of the card desired (1 – 255) and xxx is the computer number to switch to (1 – 1000). For example, you want to switch the KVM station on CPU card #4 to computer #50; the command would be K4C50S [Enter]. The KVM station connected on CPU card #4 would be switched to computer #50. The response on the screen would be K4C50Rx, where x is one of the following status values

- .  
1 = View
- 2 = Share
- 3 = Control
- 4 = Private

# Serial Device Support

## Serial device support

The serial feature is available on the multi-platform models. The serial feature allows you to connect a KVM station to a serial device such as the serial port on a Unix or Sun computer, a router or hub, or any compatible serial device. The serial device is connected to the DB25F CPU port on the UltraMatrix Remote with a serial cable (See Appendix B for serial cable part numbers). Any CPU port can be configured to be a serial port. When you switch to that port, you are connected to the serial device and can access it as you normally would.

To configure a CPU port for a serial application, call up the main menu ([Ctrl] – F12), and then select computer and press [Enter]. From the configure computer menu, use the up/down arrow keys to select the desired computer to configure for serial, then use the left arrow key and select the keyboard field for the selected computer and press [Enter]. A selection box will display listing the supported choices. Use the up/down arrow keys and select the serial baud rate to configure the CPU port for and press [Enter]. Save the changes to flash memory. Once saved, that CPU port is configured for serial support.

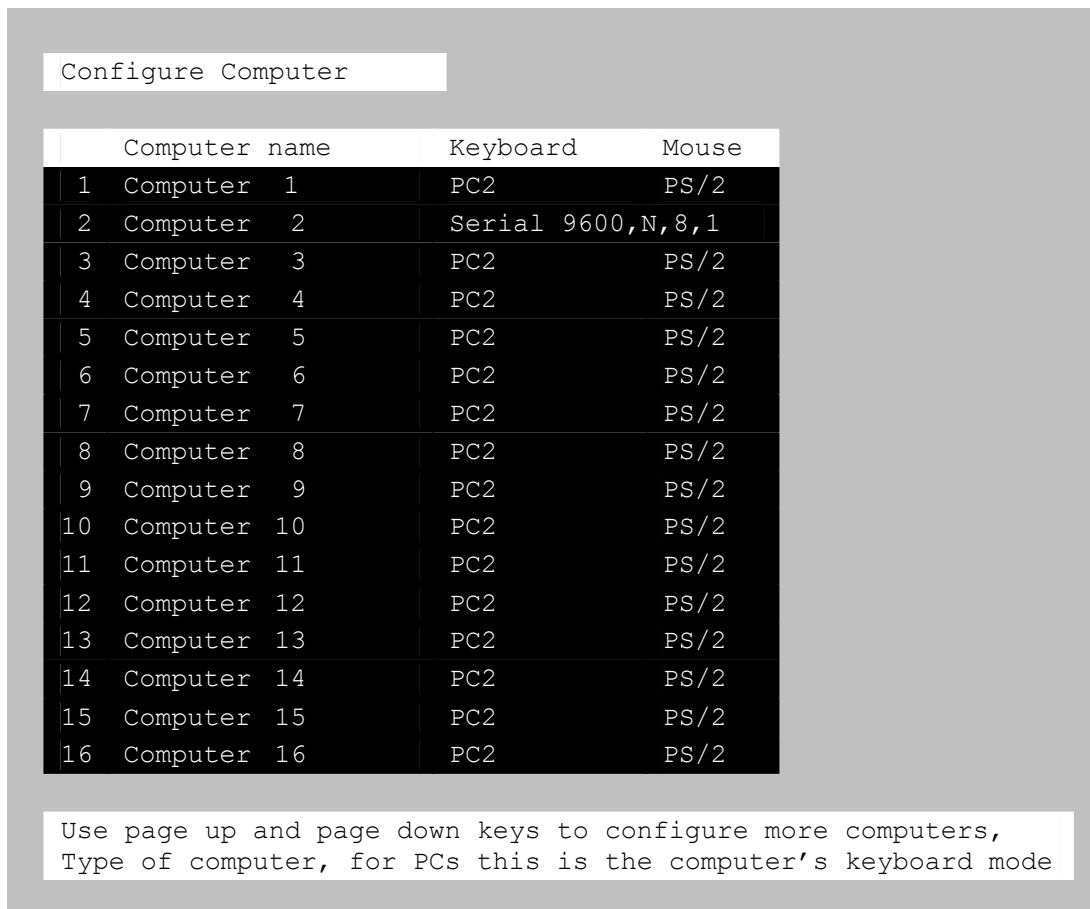


Figure 18. Serial support

Computer 2 is configured for serial support at 9600 baud.

With the CPU port configured for serial support and the appropriate serial cable connected, the KVM station can access the connected serial device the same way you would access it using a computer terminal.

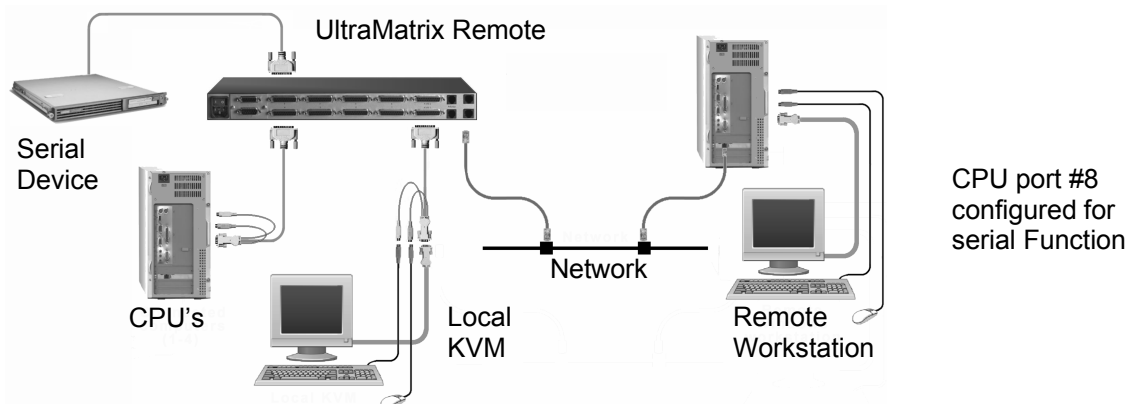
When you switch to a CPU port that is configured for serial support, the powerful OSD will emulate a VT220 terminal. You can also use the KVM station in a standard TTY mode which will automatically scroll incoming data. The example below shows a typical screen from a UNIX computer. The data is shown in a standard 24 x 80 area with two status lines. The first line shows the current KVM station name, user name, connect mode, and computer name. The second line shows the command functions available.

```

-r-sr-xr-x  2 uucp    uucp      31258 Aug 14 2000 uusnap
-r-sr-xr-x  2 uucp    uucp      31258 Aug 14 2000 uustat
-r-xr-xr-x  1 uucp    uucp      1759  Feb 09 2000 uuto
-r-sr-xr-x  1 uucp    uucp      50678 Aug 14 2000 uux
-r-xr-xr-x  1 bin     bin       8868  Apr 09 2000 vacation
-r-xr-xr-x  5 bin     bin      224806 Jun 07 2001 vedit
-r-xr-xr-x  5 bin     bin      224806 Jun 07 2001 vi
-r-xr-xr-x  5 bin     bin      224806 Jun 07 2001 view
-r-xr-sr-x  2 root    system    14830 Jun 07 2001 w
-r-xr-xr-x 15 bin     bin       1042  Jun 07 2001 wait
-r-xr-xr-x  1 bin     bin       5050  Jun 07 2001 wc
-r-xr-xr-x  1 bin     bin       3372  Jun 07 2001 what
-r-xr-xr-x  3 bin     bin      96640 Jun 07 2001 whatis
-r-xr-xr-x  1 bin     bin       6840  Jun 07 2001 whereis
-r-xr-xr-x  1 bin     bin        963 Jun 07 2001 which
-r-xr-xr-x  1 bin     bin      10912 Jun 07 2001 who
-r-xr-xr-x  1 bin     bin       1598  Jun 07 2001 whoami
-r-xr-xr-x  1 bin     bin      18624 Jun 07 2001 write
-r-xr-xr-x  1 bin     bin      10694 Jun 07 2001 xargs
-r-xr-xr-x  1 bin     bin      12732 Apr 09 2000 xget
-r-xr-xr-x  1 bin     bin      12272 Apr 09 2000 xsend
-r-xr-xr-x  1 bin     bin       1334 Jun 07 2001 yes
-r-xr-xr-x  3 bin     bin      14552 Jun 07 2001 zcat
# _
UltraMatrix terminal • NOC station 12 • Martin • Share mode • Unix NCC-1701-D
Page ↑↓ = Scroll • F12 = Clear screen • Page 0

```

The page up and page down keys allow you to scroll the incoming pages in the four page scroll buffer. The F12 key clears the screen.



# Viewer Installation

## Remote Viewer Installation

### Software Installation

The Viewer software must be installed on a Windows based workstation connected to the network. The workstation should have the following minimum requirements:

- 133 MHz PC with Microsoft Windows 95 or above
- 32 Mb of system memory
- 4Mb of free disk space
- VGA display adapter and monitor, capable of 640 x 480 resolution
- Keyboard and mouse
- Network connection with TCP/IP protocol

To install the Viewer software, perform the following steps. It is recommended that you close all workstation applications before installation. If you are upgrading existing Viewer software or the UltraMatrix Remote firmware, please refer to Appendix F & G for upgrade instructions.

1. Insert the Setup diskette (Diskette #1) and click Start, run, type in A:\Setup.exe in the "Open" input field, click OK. the setup wizard (Figure 19) will display.
2. Click "Next" to begin the installation process. Read the "License agreement" and click "Yes" to continue.
3. Enter the "Destination directory" if different than the default (C:\Program Files\UltraLink Viewer) and click "Next"
4. Enter the "Start menu" folder name if different from the default name (UltraLink Viewer) and click "Next".
5. Two additional tasks can be performed during installation, create a quick launch icon and create a desktop icon
6. Check or un-check the choice boxes for the icon's wanted and click "Next"
7. A final screen will display. Verify that the "Destination directory", the "Start menu" folder, and the "Create Icon" choices are correct and click "Install". Click "Back" to correct any information that has been entered incorrectly
8. The installation process will begin. Insert Disk 2 when prompted. When the final installation process is completed, the finish screen will display. Check the "Launch UltraLink Viewer" box
9. Click on "Finish" to complete the installation process and launch the Viewer

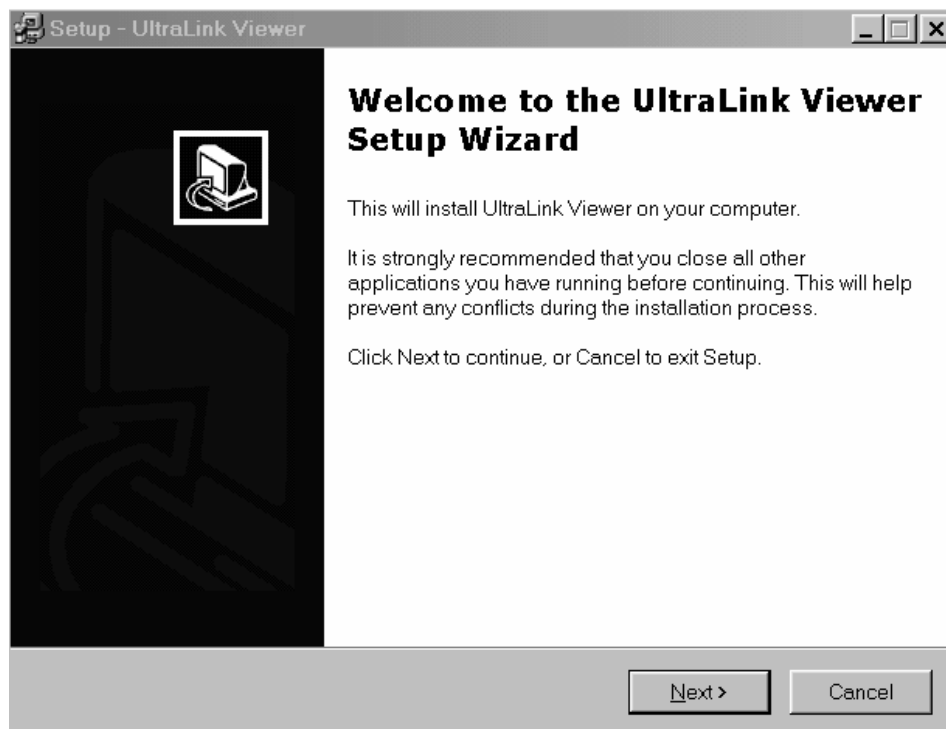


Figure 19. Viewer Set-up Wizard

Please note the following important items concerning using the Viewer for the first time.

### Pass-through mode

When logging in to the UltraMatrix Remote from the Viewer for the first time, use the default administrator account User ID “**admin**” and no password. Once logged in, the Viewer is in the “Pass-through” mode. In this mode, all keyboard and mouse activity is passed to the UltraMatrix Remote. There are no keyboard or mouse functions available for the workstation the Viewer is installed on. To exit the “Pass-through” mode and restore the keyboard and mouse functions to the workstation, press and hold down the Ctrl, Alt, and P key simultaneously.

### Full-screen mode

Full screen mode takes control of your monitor and uses the complete screen to display a remote computer’s screen. To regain control of your monitor, press and hold down the Ctrl, Alt, and F keys simultaneously. Exiting the pass-through mode also returns control from the full-screen mode.

### Question mark help

On some configuration menus, there will be a small question mark in the upper right hand corner. Click on the question mark, and then click on any field on the menu to get help on that specific item.

### Viewer configuration

The Viewer icon will be present on your desktop if selected during the viewer installation. Click on the icon to launch the Viewer or click on the UltraMatrix Remote Viewer icon in the startup menu. The UltraMatrix Remote Viewer window will display (Figure 20).

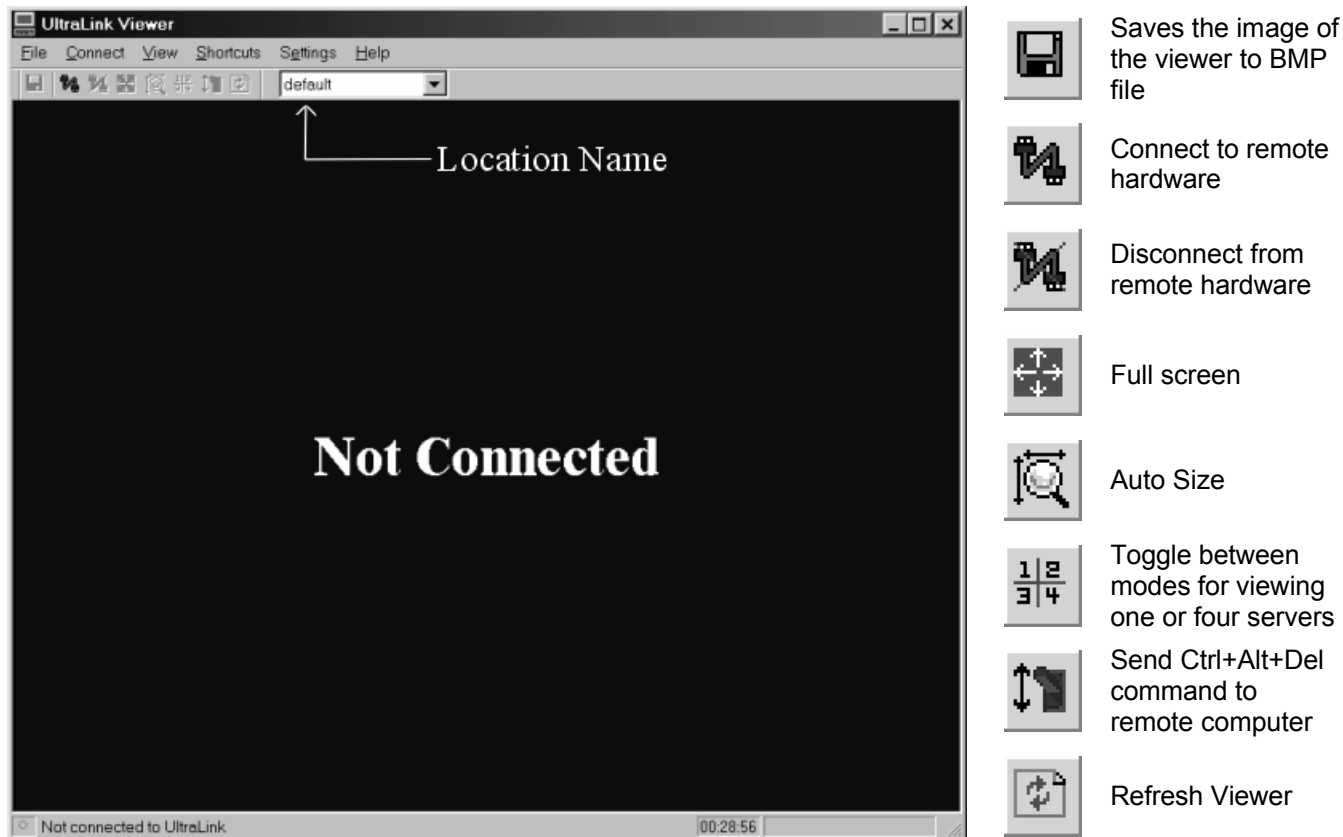


Figure 20. UltraMatrix Remote Viewer / Icon description

The first item to change is the default account information. To perform this, Launch to viewer and click on “Settings”, “Connections...”. The Settings window will appear showing the default account information. Click on “Edit Location” and change the “Default” Location name for this Unit to a location name appropriate for your system. Click “OK” to change the location name. It is recommended that the location name be a maximum of 20 characters. This function only adds the location name. Once added, enter the assigned IP address for this Unit in the “IP Address or Domain Name” field. If the UltraMatrix Remote at this location was assigned an IP port number other than the default 9876, this number must be included in the “IP Address or Domain Name” field.

Example: 123.123.123.123:6421 (The IP port number, 6421, is included with the IP address separated by a colon)

Click “OK” to save the location information. From this screen, additional locations can be added, changed or deleted.

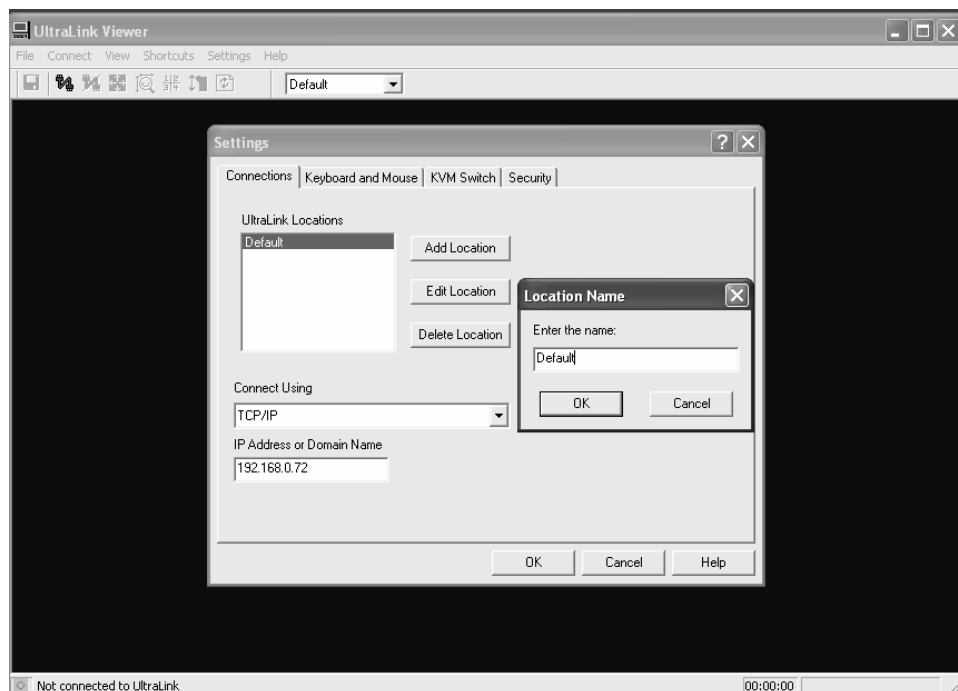


Figure 21. Connections menu

To delete a location:

- Click (highlight) the location name to delete
- Click “Delete Location”

Upon clicking “OK”, that location will be immediately deleted.

To change a location name:

- Click (highlight) the location name to change
- Click on “Edit Location”
- Change the location name
- Click “OK” to apply the change

Upon clicking “OK”, the location name is changed immediately.

To change a locations IP address or Domain Name:

- Click (highlight) the location name to change the IP or Domain name (The “IP Address or Domain Name” field for this location will display)
- Change the IP address or Domain Name for this location
- Click “OK” to apply the changes

Upon clicking “OK”, the IP address or Domain name is changed immediately.

The location name shown in Figure 20 will list all Unit locations that have been added. If more than one location has been added, click on the down arrow to list the locations, select one to connect to, and then click on the “Connect to remote hardware” ICON. A login box will appear requesting a User ID. Enter the default account User ID of “admin” (Lower case) and click “OK”. A login password box will appear. Do not enter a password, click “OK” and you will connect to the UltraMatrix Remote using the default administration account. Once connected, the below dialog box will display informing you that you are in the pass-through mode. All keyboard/mouse events are sent to the remote computer. Click “OK”. To exit the pass-through mode, hold down the left control, alt, and P keys. This exits the pass-through mode and returns keyboard and mouse control to your workstation.



The administrator should change the default login ID “admin” and assign a unique password. To change the default account information, Click on “Settings”, “Security”, highlight “admin” User ID and click on “Edit user”. (Figure 22)

NOTE: You must be connected to the UltraMatrix Remote to change the default account information.

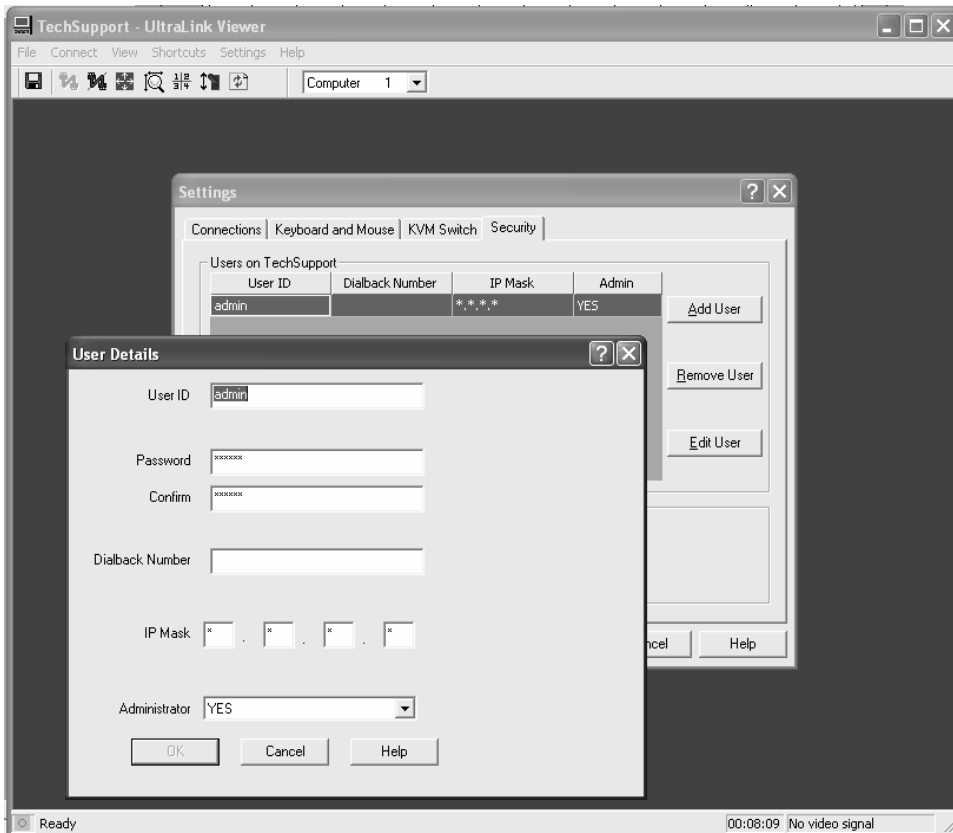


Figure 22. Security

From the “User details” screen:



- Change the User ID of “admin” to a new administrator User ID or a new user (16 characters max, case sensitive, duplicate names are not allowed)
- Type in a new password in the “Password” field (16 characters max, case sensitive, duplicate passwords are allowed but not recommended)
- Re-type the password in the “Confirm password” field (If the password and confirmed password fields match, the “Passwords don’t match” label will be removed.)
- The “Dialback Number” field is reserved for future use
- The “IP Mask” fields add an additional level of security to your system. You can specify an IP address range that this user must connect from. A complete IP address can be specified for users that can only connect from a fixed IP address. Wildcards (\*) can be used to include all IP number  
Example: 123.123.123.123 (Requires an exact match, user must login from the workstation with this IP address)  
123.123.123.\* (Typical setting for users using DHCP)
- Click “OK” to change the administrator account to the new values or add a new user

Additional users can be added at this time using the same procedure. Click “Add User” to add a new user and enter this users specific account information. If a new user will also be responsible for administration function, change the “Administrator” field to “YES”.

The “Miscellaneous Configuration Items”, Inactivity timeout and Encryption type, are global settings that apply to all administrator and user accounts.

### Configuring the Viewer for the UltraMatrix Remote model

The remote Viewer is universal for all UltraMatrix Remote models and should be configured to match the model it will be connecting to. This involves setting the switch type and the total number of CPU ports the viewer will be accessing. Start the Viewer and connect to the UltraMatrix Remote, login, and click on “Settings”, then “KVM switch”. (See Figure 23) Change the Ports value to the correct number of CPU ports on the UltraMatrix Remote. Also from this screen, you can give each computer a specific name. Select the computer to re-name and type in a new name. Computer names were also entered locally.



Figure 23. Configure KVM switch

# OPERATIONS

## System Operation

The system operation section describes how to start the Viewer program, remotely connect to an UltraMatrix Remote, login to the UltraMatrix Remote, and disconnect.

### Starting the Viewer program

To start the Viewer program, double click on the Viewer icon on the desktop if it was installed during the Viewer installation or click on the UltraMatrix Remote Viewer icon in the startup menu. (Figure 20)

### Connecting

There are two methods of connecting to the UltraMatrix Remote, the toolbar or the connect menu. Figure 24 shows an example of both methods. The “Connect using the Toolbar” (Left example) connects to the chosen location when it is selected. The “Connect using the dropdown connect menu” (Right example), first click on the down arrow, select the location, then click on the connect ICON to connect to the selected UltraMatrix Remote location.



Connect using the Toolbar



Connect using the dropdown connect menu

Figure 24. Connecting

If the Viewer does not connect an error message similar to the one shown below will display.

Connection failure reasons are:

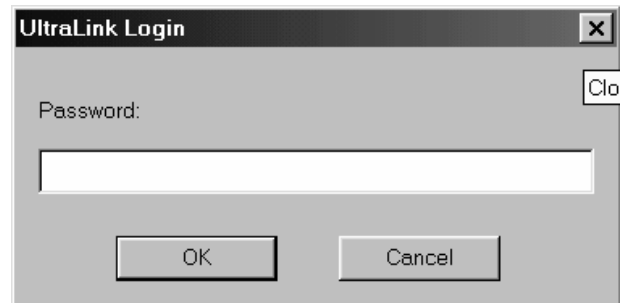
- Local user or another Viewer is connected
- UltraMatrix Remote IP address is incorrect
- UltraMatrix Remote is powered off



When the Viewer successfully connects to the selected locations UltraMatrix Remote, the User must login with a valid user ID and Password. Enter the User ID assigned and click on "OK". The Password request box will display. Enter the assigned password and click on "OK". There is a 45 second time limit for entering the User ID and Password. To continue configuring the Viewer, login with the administrator's User ID (**admin**) and no password.



User ID login



User Password

If the User ID and password are validated on the connected UltraMatrix Remote location, the Viewer will display the connected computer's video (if connected and powered on) and a warning dialog box (shown below). Click the "OK" button to continue. To suppress the warning dialog box from displaying every time a connection is made or the Viewer is placed in or out of the "Pass-through" mode, click on the check box to suppress the message. To reinstate the warning dialog box, check "Pass-through warning" on the Help menu.

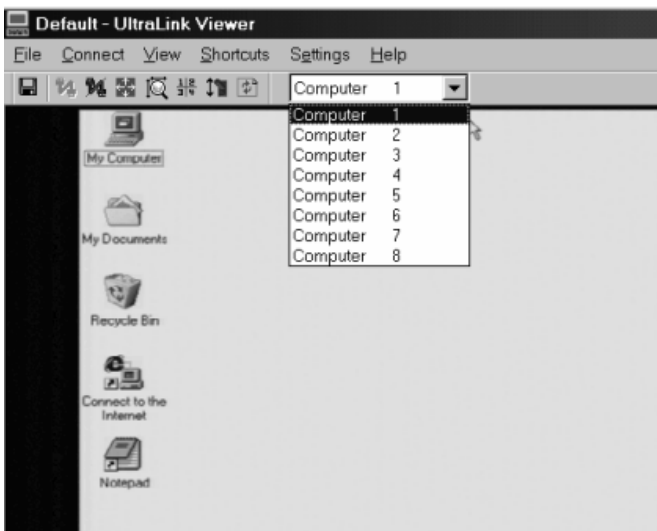


When the connected computer's video displays, the Viewer is in the Pass-through mode. The Green indicator in the lower left toolbar will be "ON" when the Viewer is in the Pass-through mode. All keyboard and mouse activity applies to the UltraMatrix Remote. The Viewer's menus and toolbar are not available in the Pass-through mode. To regain control of your computer and gain access to the Viewer's menu and toolbar, use one of the below escape methods:

- HotKey shortcut
  - LCtrl+Alt+P - The "P" Hotkey can be changed from the "Settings, Keyboard and Mouse" menu
  - Press and release the left control (Ctrl) key, then the P key or user defined key
- Fast or Slow mouse escape movement (Configured from the "Settings, Keyboard and Mouse" menu)

Figure 25 shows a typical Viewer connected to a UltraMatrix Remote.

The remote computer select list allows you to select and connect to a specific computer that is connected to the UltraMatrix Remote (See Figure 25) Choosing "Computer 6" from the select list will immediately connect to that KVM switch's CPU port and display the connected computer's video.



UltraMatrix Remote connected to a Switch

Figure 25. Switch connection

When the UltraMatrix Remote is configured and connected to, the Remote-computer select and the Quad screen functions (Figure 26) become available. Clicking on the Quad screen ICON or selecting Quad from the Toolbar's view menu changes the view into the Quad screen mode. The "Remote computer select list" changes into four list boxes; one for each quadrant and the Viewer divides the display area into four equal quadrants.

If only one quadrant has a computer selected and the other three have "no selection", the display does not change to four quadrants. Select which computer's video to view for each quadrant. Once selected, that quadrant immediately displays that computers video. All quadrants are equal in size and each of the four computer's video is scaled to fit its assigned quadrant. The Quad-screen mode is a view only mode. (Pass-through mode is disabled) The keyboard and mouse cannot control any of the four remote computers. You may select full-screen view while in the Quad-screen mode however; the remote computer select boxes will not be visible. To exit the Quad-screen view, click on the Quad-screen ICON or select "View, Single" from the toolbar. The Viewer saves the Quad-screen mode settings and displays them the next time Quad-screen view is selected.

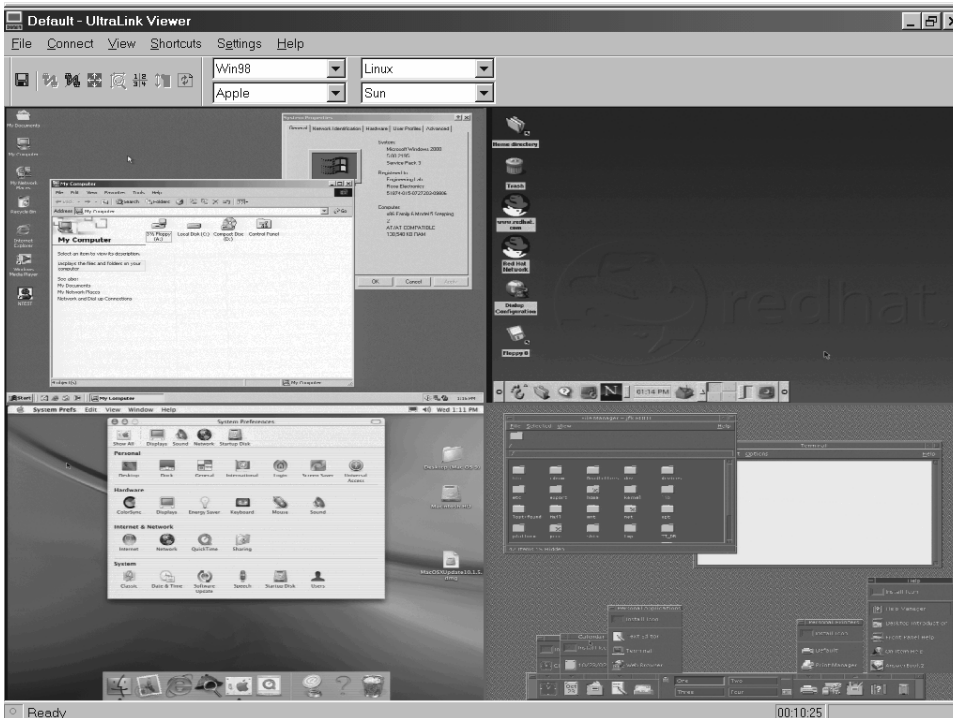
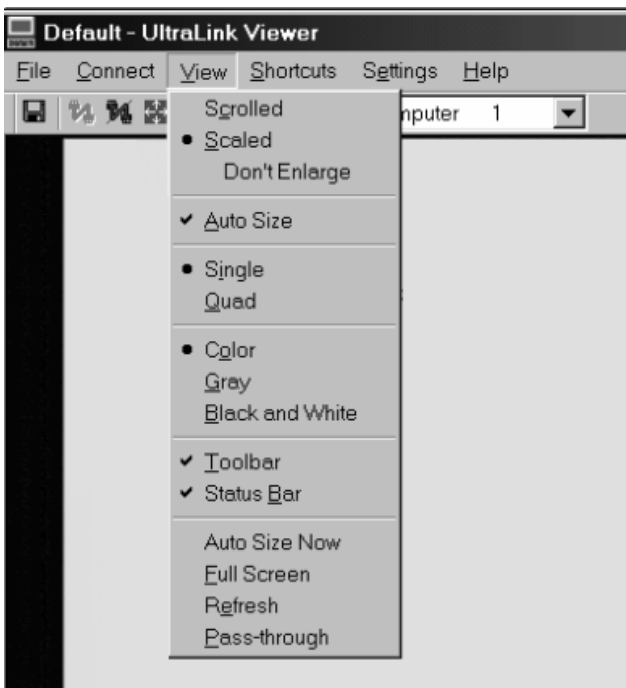


Figure 26. Quad screen mode

## View modes

The Viewer can be configured to show the computer's video at its clearest size. To change the view mode, select "View" from the menu.



## Scrolled view

The scrolled view displays the image from the remote computer with its original size. If the Viewer's display area is smaller than the computer's video, vertical and horizontal scroll bars are added. If the Viewer's display area is larger than the computer's video, the Viewer centers the computer's video.

## Scaled view

In the scaled view mode, the Viewer sizes the computers video to fit the Viewer's display area. To scale an image, adjust the size of the Viewer window by dragging the window edges to the size needed. The "Don't Enlarge" sub-option, when checked, displays scaled-down images when the image is larger than the display area but centers the image, with no scaling, when the image is smaller than the display area.

## Auto Size

Checking "Auto Size" causes the Viewer to resize when there is a change in the image size. The image size may change when switching between CPU ports on a KVM switch or when a remote computer boots. When possible, the Viewer will adjust the window to match the original image size.

## Single

Selecting "Single" will toggle the display area from the Quad screen view to a single view. When switching from a Quad view to a Single view, the image in quadrant 1 is displayed.

## Quad

Selecting "Quad" will change a Single view to a Quad screen view.

Note: Single and Quad views are only available if the UltraMatrix Remote is configured to a KVM switch. These options are not available when configured for a Standalone PC.

## Color

When selected, the image in the Viewer matches the original image on the remote computer.

## Gray

When selected, the image in the Viewer is converted to grayscale.

## Black and White

When selected, the image in the Viewer is converted to Black and White.

Below shows the relationship between the different modes, the image quality, and transmission speed.

If the computer's image is mostly solid colors, reducing the color quality will have little effect on the transmission speed. If the images contain gradients or complex graphics, the speed increase may be dramatic.

Mode	Image Quality	Speed
Color	High	Low
Gray	Medium	Medium
Black and White	Low	High

**Toolbar**

When checked, the toolbar is visible, un-checked, the top toolbar is removed.

**Status Bar**

When checked, the status bar is visible, un-checked, the bottom status bar is removed.

**Auto Size Now**

Resize the display area to fit the image size.

**Full Screen**

Selecting "Full Screen" changes the Viewer's display area to full screen. The toolbar and status bars are removed and the Viewer is automatically placed in the pass-through mode. To exit the Full screen mode, press the left control, the Alt, and the F key simultaneously.

**Refresh**

Selecting "Refresh" clears the Viewer and re-displays the computer's video.

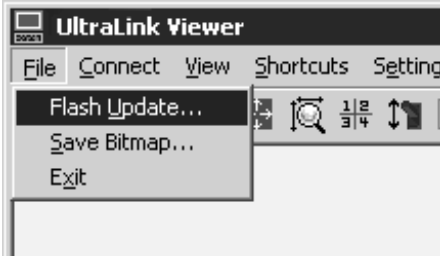
**Pass-through**

Selecting "Pass-through" will enter into the pass-through mode. When you are not in the pass-through mode, clicking on the Viewer's image will also enter the pass-through mode.

## Other menu items

### File menu

The File menu provides three options:

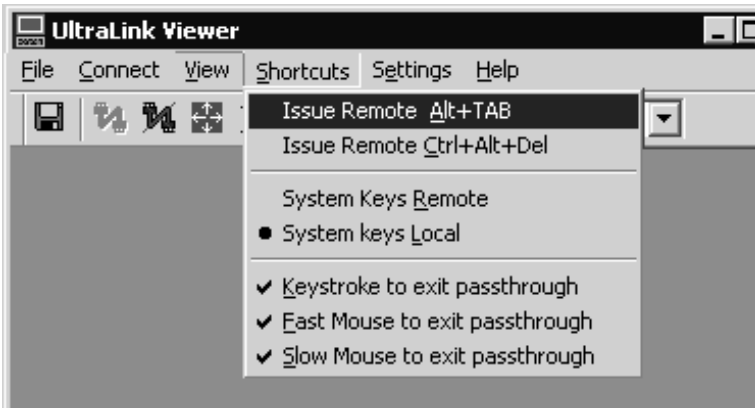


**Flash Update** – See Appendix F

**Save Bitmap** – Saves the Viewer's image to a .BMP file

**Exit** – Exits the Viewer

### Shortcuts menu



#### **Issue Remote Alt+Tab** –

Sends an Alt+Tab keystroke to the remote computer when the Viewer is not in the pass-through mode.

#### **Issue Remote Ctrl+Alt+Del** –

Sends a Ctrl+Alt+Del keystroke to the remote computer when the Viewer is not in the pass-through mode.

#### **System Keys Remote\*** –

Directs certain system keys to the remote computer when the Viewer is in the pass-through mode.

#### **System keys Local\*** –

Directs certain system keys to your computer when the Viewer is in the pass-through mode.

#### **Keystroke to exit pass-through** –

Turns hotkey to exit pass-through on or off

#### **Fast Mouse to exit pass-through** –

Turns fast mouse escape movements on or off

#### **Slow Mouse to exit pass-through** –

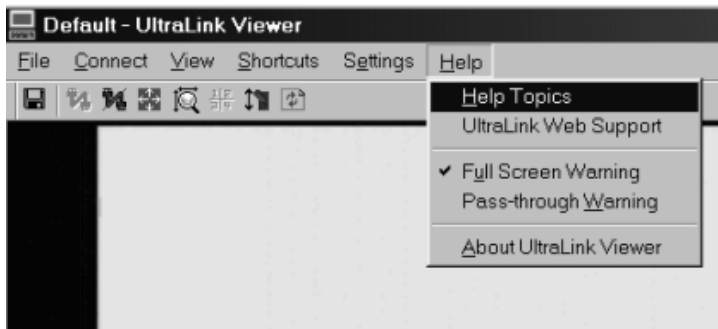
Turns slow mouse escape movements on or off

\* System keys

- Alt + Tab
- Alt + Esc
- Ctrl + Esc
- Windows keys



## Help



**Help Topics –**  
Invokes full online help.

**UltraLink Web Support –**  
Opens a browser and links to the UltraLink support web site.

**Full Screen Warning –**  
Enables or disables the full-screen warning dialog.

**Pass Through Warning –**  
Enables or disables the Pass-through warning dialog.

**About UltraLink Viewer –**  
Provides current information about the Viewer program version and the firmware version of the last UltraLink connected.

## Service information

### Maintenance and Repair

This Unit does not contain any internal user-serviceable parts. In the event a Unit needs repair or maintenance, you must first obtain a Return Authorization (RA) number from Rose Electronics or an authorized repair center. This Return Authorization number must appear on the outside of the shipping container. See Limited Warranty for more information.

When returning a Unit, it should be double-packed in the original container or equivalent, insured and shipped to:

Rose Electronics  
Attn: RA \_\_\_\_\_  
10707 Stancliff Road  
Houston, Texas 77099 USA

### Technical Support

If you are experiencing problems, or need assistance in setting up, configuring or operating your switch, consult the appropriate sections of this manual. If, however, you require additional information or assistance, please contact the Rose Electronics Technical Support Department at:

Phone: (281) 933-7673  
E-Mail: [TechSupport@rose.com](mailto:TechSupport@rose.com)  
Web: [www.rose.com](http://www.rose.com)

Technical Support hours are from: 8:00 am to 6:00 pm CST (USA), Monday through Friday.

Please report any malfunctions in the operation of this Unit or any discrepancies in this manual to the Rose Electronics Technical Support Department.

# SAFETY

## Safety

This Unit has been tested for conformance to safety regulations and requirements, and has been certified for international use. Like all electronic equipment, the Unit should be used with care. To protect yourself from possible injury and to minimize the risk of damage to this Unit, read and follow these safety instructions.



### Caution!

Risk of explosion can occur if the battery is replaced with an incorrect type.  
Dispose of used batteries according to the manufacturer's instructions.

- Follow all instructions and warnings marked on this Unit.
- Except where explained in this manual, do not attempt to service this Unit yourself.
- Do not use this Unit near water.
- Assure that the placement of this Unit is on a stable surface or rack mounted.
- Provide proper ventilation and air circulation.
- Keep power cord and connection cables clear of obstructions that might cause damage to them.
- Use only power cords, power transformer and connection cables designed for this Unit.
- Use only a grounded (three-wire) electrical outlet.
- Keep objects that might damage this Unit and liquids that may spill, clear from this Unit. Liquids and foreign objects might come in contact with voltage points that could create a risk of fire or electrical shock.
- Operate this Unit only when the cover is in place.
- Do not use liquid or aerosol cleaners to clean this Unit. Always unplug this Unit from its electrical outlet before cleaning.
- Unplug this Unit from the electrical outlet and refer servicing to a qualified service center if any of the following conditions occur:
  - The power cord or connection cables is damaged or frayed.
  - The Unit has been exposed to any liquids.
  - The Unit does not operate normally when all operating instructions have been followed.
  - The Unit has been dropped or the case has been damaged.
  - The Unit exhibits a distinct change in performance, indicating a need for service.

## Safety and EMC Regulatory Statements

### Safety Information



Documentation reference symbol. If the product is marked with this symbol, refer to the product documentation to get more information about the product.

**WARNING**  
**CAUTION**

A WARNING in the manual denotes a hazard that can cause injury or death.  
A CAUTION in the manual denotes a hazard that can damage equipment.

Do not proceed beyond a WARNING or CAUTION notice until you have understood the hazardous conditions and have taken appropriate steps.

### Grounding

These are Safety Class I products and have protective earthing terminals. There must be an un-interruptible safety earth ground from the main power source to the product's input wiring terminals, power cord, or supplied power cord set. Whenever it is likely that the protection has been impaired, disconnect the power cord until the ground has been restored.

### Servicing

There are no user-serviceable parts inside these products. Only service-trained personnel must perform any servicing, maintenance, or repair.

The user may adjust only items mentioned in this manual.

## Safety and EMC Regulatory Statements

---

Informations concernant la sécurité



Symbole de référence à la documentation. Si le produit est marqué de ce symbole, reportez-vous à la documentation du produit afin d'obtenir des informations plus détaillées.

### **WARNING**

Dans la documentation, un WARNING indique un danger susceptible d'entraîner des dommages corporels ou la mort.

### **CAUTION**

Un texte de mise en garde intitulé indique un danger susceptible de causer des dommages à l'équipement.

Ne continuez pas au-delà d'une rubrique WARNING ou CAUTION avant d'avoir bien compris les conditions présentant un danger et pris les mesures appropriées.

Cet appareil est un produit de classe I et possède une borne de mise à la terre. La source d'alimentation principale doit être munie d'une prise de terre de sécurité installée aux bornes du câblage d'entrée, sur le cordon d'alimentation ou le cordon de raccordement fourni avec le produit. Lorsque cette protection semble avoir été endommagée, débrancher le cordon d'alimentation jusqu'à ce que la mise à la terre ait été réparée.

Aucune pièce contenue à l'intérieur de ce produit ne peut être réparée par l'utilisateur.

Tout dépannage, réglage, entretien ou réparation devra être confié exclusivement à un personnel qualifié.

# TROUBLESHOOTING

## Troubleshooting

---

### Local KVM monitor blank or displaying “Invalid mode” message

- Monitor cable connected Unit not powered on
- Check power cable and source

### No visible mouse

- Exit the pass-through mode (Ctrl+Alt+P key)
- Keyboard and mouse connections reversed on local ports

### Green screen on the Viewer and no mouse

- Exit the Pass-through mode (Ctrl+Alt+P key)

### Viewer will not install on a Windows NT workstation

- Workstation must be logged in as administrator

### Viewer does not function properly on a Win95 workstation

- A common Win95 dll file is not current, update Internet Explorer to version 5.0 or later and this update will update the dll file

### In the Quad view, the connection status window is always present in all quadrants

- Configure the Rose KVM switch and change the system configuration, fadeout time to zero (disabled)

### Mouse does not move

- The UltraMatrix turned off after or not attached when computer booted or application began using mouse. Exit and re-enter application using mouse or issue reset command.
- PS/2 mouse was not attached when the UltraMatrix powered up or has been detached and reattached. Issue the reset command.

### PS/2 mouse gets out of sync

- Reset the mouse by pressing and releasing the left Control Key, and then the R key.
- Cabling was disturbed during mouse movement. Issue the null command once or twice to re-sync the mouse. Get a later mouse driver that does not exhibit this problem.

### Video fuzzy

- Cable too long or wrong type. Verify that resolution and distance match Appendix I – Video Quality Chart Upgrade cable if necessary.

### Video not synchronized or wrong color

- Cable is loose. Re-seat cable.
- Wrong computer (CPU) cable used. If you have a 9515, 9517, 9518, XGA mono or similar monitor you must use special cables or adapters.
- Cable is defective. Try using cable from another computer (CPU). If problem goes away, cable is defective.
- Port on the UltraMatrix is defective. Try using another port on the UltraMatrix. If problem goes away, port is defective

# APPENDICES

## Appendix A – Specifications

Dimensions	Width	Height 2 user/4 user	Depth	Units
	16.7	1.75 / 3.50	12.0	Inches
	42.4	4.45 / 8.89	30.5	Centimeters
Weight	1 x 4 = 8 lbs. (3.6 kg) 2 x 8 = 4 x 16 =			
Power	Auto Switching, 115-230 VAC, 50/60 Hz, 750 ma, 100 watts			
Connectors	Power: IEC 320 standard receptacle Local KVM: Video - HD15F, Keyboard - MD6F, Mouse - MD6F Switch or computer: DB25 female Ethernet port: RJ45 Serial port: DB9 male			
Video bandwidth	150Mhz			
Chassis	Electro galvanized steel, black powder coated			
Controls	Power On / Off Switch			
Indicators	LEDs: Power, Net, Serial, Local, Ethernet link, 10/100MB Ethernet speed			
Environmental	0°-45° C, 32°-113° F, 5%-80% non-condensing rel. humidity			
Approvals	CE			

## Appendix B – Parts and cables

Part number	Description
SW-ULV3	Viewer Software on 3.5" Floppy (2 Disks)
CAB-CX0606C5	DB25 to VGA/PS2 (UL to CPU keyboard, monitor, mouse ports)
CAB-ZX0606Cnnn	Standard – VGA/PS2 Kbd/Mouse
CAB-CXV800Cnnn	Coax – Sun Video/kbd-mouse / HD15/MD8
CAB-SCX0800Cnnn	Coax – Sun Video/kbd-mouse / 13W3/MD8
CAB-CXUMXnnn	Bus expansion cable (Molded version)
CAB-UMXnnn	Bus expansion cable
CAB-USDTD25FCnnn	Serial to DTE equipment w/DB25F
CAB-USDTD9FCnnn	Serial to DTE equipment w/DB9F
CAB-USDCD9MCnnn	Serial to DTE equipment w/DB9M
CAB-USDCD25MCnnn	Serial to DTE equipment w/DB25M
CAB-USSNMD8MCnnn	Serial to Sun serial port w/MD8M
CR2032	3V Battery
<b>Rack Mount Kits</b>	
RM-UB19	19 in. – (1U, B Chassis)

nnn = cable length

## Appendix C – RackMount

The rack mount kit includes the following items:

- Two black anodized mounting brackets
- Four 6 - 32 x 3/8" flat head mounting screws

To rack mount your UltraMatrix Remote, attach the two rack mounting brackets to yo/ur Unit with the short flange against the Unit using the four screws provided. Secure the mounting brackets to the rack using the appropriate size bolts, nuts and lock washers. Using hardware other than that provided could cause damage to the electronics and/or result in loss of mounting integrity. Do not over tighten the screws used to mount the Unit to the mounting brackets.

The following general guidelines should be observed when installing your Unit into a rack.

- a). The UltraMatrix Remote is designed to work in an ambient temperature of 0° C to 45° C (32° F – 113° F).
- b). Do not block power supply vents or otherwise restrict airflow when rack-mounting this Unit.
- c). Mechanical loading of the rack should be considered to prevent instability and possible tipping over.
- d). Tighten all connectors securely and provide adequate strain relief for all cables.
- e). Provide a grounded power source to all Units. Pay special attention to overall branch circuit load ratings before connecting equipment to this source. Overloaded circuits are potential fire hazards and can cause equipment failures or poor performance.

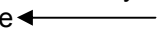
### Rack mount illustration



## Appendix D – KeyCodes

The Key Codes are pre-defined for all Rose Electronics KVM switches. The keyboard commands to switch to a CPU port must be specified in the Key Code column if the UltraMatrix Remote is connected to a Custom KVM switch.

To enter the Key Codes, select the Key Code field and enter the command. The following exceptions apply:

- The arrow keys are : ← Larrow, → Rarrow, ↑ Uarrow, and ↓ Darrow
- The  Backspace key is entered as BackSpace
- Blank spaces must be removed for all Key Codes using two words (Print Screen would be entered as PrintScreen)
- The Tab key is Tab (Tab Z Enter)
- Ctrl, Alt, and Shift are designated left or right by a preceding L or R (LCtrl 1 Enter)
- Down and Up are designated as -dn and -up (LCtrl-dn LCtrl-up)
- Numeric keypad entries are preceded with KP (KP8)

The Viewer validates all Key Code entries. If a Key Code entry is invalid, an error message dialog box will display.

## Appendix E – Import file format

The Import button can be used to retrieve the switch settings from a text file.  
The Export button can be used to save the switch settings to a text file.

The text file can be generated and edited using any text editor.  
The file format is:

Line	Content	Description
1		Blank, reserved for future use
2	Custom	Switch type
3		Blank, reserved for future use
4		Blank, reserved for future use
5		Blank, reserved for future use
6	` `Exit Sequence` LCtrl L	Specifies an exit sequence (Optional)
7	`1`Sales` LCtrl 1 Enter	Port#, name, keystrokes (Key Code)
8	`2`Computer 2` LCtrl 2 Enter	Port#, name, keystrokes (Key Code)
9	`3`Computer 3` LCtrl 3 Enter	Port#, name, keystrokes (Key Code)

Table 1. Import file format

The text import file must follow the format in Table 4. The switch type may be on any of the first five lines. The switch type should be “Custom”. Line 6 starts the data values to import into the Port, Name, and Key Code fields of the configure KVM switch table

The data value input format must be:

- Delimiter (Grave accent key, on the tilde key)
- Port number (Numeric value from 1-1000, blank for non-port switching Key Codes)
- Delimiter (Grave accent key, on the tilde key)
- Computer name (Up to 16 characters)
- Delimiter (Grave accent key, on the tilde key)
- Key Code (Keystrokes to switch to the CPU port)



## Appendix F – UltraMatrix Remote firmware upgrade

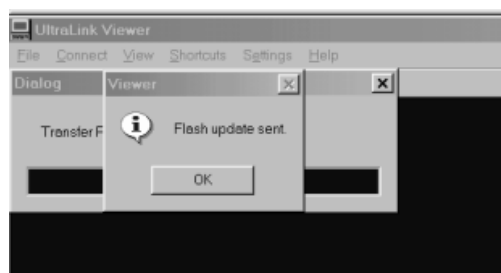
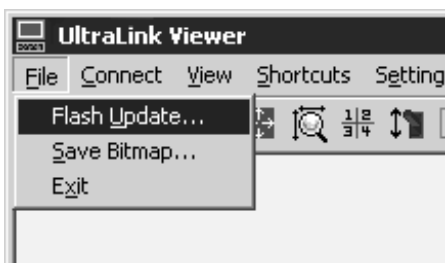
When updates and enhancements are made to the UltraMatrix Remote features, new firmware updates is made available from Rose Electronics' web site at [www.rose.com](http://www.rose.com) or from the Viewer, click on Help, then UltraLink web support.

To check the firmware revision of the UltraMatrix Remote that is connected to the Viewer, click on Help, then About UltraLink Viewer. ULVxxx shows the version of the Viewer software, ULPxxx shows the UltraMatrix Remote Unit firmware version. Check these versions against the latest versions on our web site. If your Unit or Viewer needs updating, download the need update file from our web site and save it on the workstation.

To update the UltraMatrix Remote Unit:

(Note: The UltraMatrix Remote firmware can only be updated by login in with administrator privileges.)

- Connect and log into the UltraMatrix Remote from the Viewer with admin privileges
- Click on File, then Flash Update (see below)
- Enter the downloaded file name ULPxxx.bin or browse for the file you previously downloaded and select it
- The update procedure will start. You will see a transfer dialog box (see below) with a progress bar as the Viewer sends the file to the UltraMatrix Remote unit
- Click "OK" when the update completes
- The UltraMatrix Remote will disconnect the Viewer automatically and re-boot
- Wait approximately 60 seconds before connecting and logging in for the new firmware to become active



## Appendix G – Viewer software upgrade

When updates and enhancements are made to the Viewer, an update to the Viewer program is made available from Rose Electronics' web site at [www.rose.com](http://www.rose.com) or from the Viewer, click on Help, then UltraLink web support.

To check the Viewer program revision, click on Help, then About UltraLink Viewer. ULVxxx shows the version of the Viewer software, ULPxxx shows the UltraMatrix Remote Unit firmware version. If the Viewer version needs updating, download the Viewer update program file (ULVxxx.exe, where xxx is the version number) from our web site and save it on the workstation.

To update the Viewer software:

- Disconnect from the UltraMatrix Remote and close the Viewer
- Run the downloaded program ULVxxx.exe (Refer to the installation section starting on page 6)
- The update will replace the old Viewer program
- All previous settings and configurations are not changed

If a complete re-installation of the Viewer is needed and all previous Viewer settings and configurations need to be deleted, locate and delete or rename the folder where the Viewer software was initially installed and then run the program ULVxxx.exe. The default installation folder name is C:\Program Files\UltraLink Viewer.

## Appendix H – KVM placement / conflicts

In an expanded system with multiple UltraMatrix Remotes, no user conflicts will occur provided the KVM stations are on different KVM ports. That is one KVM station on KVM port #1, and one on KVM port #2 for the 2 user model; one on KVM port #3 and one on KVM port #4 for the 4 user model.

It is possible, in an expanded system with multiple UltraMatrix Remote units, to connect additional KVM stations to the system. This allows more than 2 or 4 users access to the computers.

When doing this, all users on the same KVM port must share the same video path from switch to switch. (KVM port #1 on UltraMatrix #1 and KVM port #1 on UltraMatrix #3) As long as all KVM # 1 users only connect to the computers that are attached to their local Unit, they can operate with no conflicts. If a user on KVM #1 connects to a computer on a different UltraMatrix remote, the KVM #1 user on that Unit will be disconnected and the error message "Video path canceled" will appear.

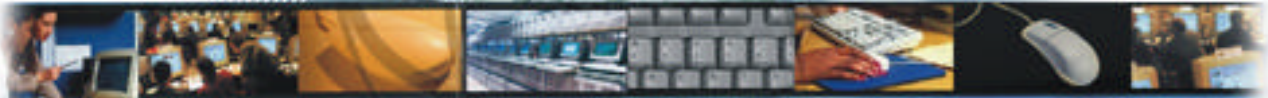
KVM's 2, 3, and 4 do not have the option of more than one concurrent user as does KVM 1. If a second KVM 2, 3, or 4 tries to access the system all other KVM's of the same number will be disconnected. If they try to re-connect, they will simply cause the other KVM user to be disconnected.

Each CPU card contains a local KVM port and a remote KVM port. Remote users and local users have the same requirements, only one user per KVM port (local or remote).





## Server Management



## Solutions



10707 Stancliff Road  
Houston, Texas 77099

Phone (281) 933-7673  
[www.rose.com](http://www.rose.com)