

# Installation & Operation Manual



XX201-03-00

**MODEL V1500X-SCCS-1  
SYSTEM CONTROLLER**



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Dear Valued Customer:

Thank you for selecting Vicon systems and products for your video needs.

Since Vicon's beginning in 1967, our only business has been the design, engineering, and production of the highest quality video systems and equipment for use in a wide variety of security, safety, control, surveillance, and communication applications.

We stand behind the quality and dependability of every product with an industry leading Beneficial Use warranty.

If you are not satisfied with a Vicon product or service, I would like to know. Your complete satisfaction is the mission of every Vicon employee.

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth M. Darby". The signature is fluid and cursive, with a long horizontal stroke at the end.

Kenneth M. Darby  
President

# FCC Notice

*Note: Complies with Federal Communications Commission Rules & Regulations Part 15, Subpart B for a Class A digital device.*

## WARNING

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instruction, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class A computing device in accordance with the specification in subpart B of part 15 of the FCC rules, which are designed to provide reasonable protection against such interference in a commercial installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio and television reception, which can be determined by turning equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the equipment with respect to the receiver.
- Relocate the equipment away from the receiver.
- Plug the equipment into a different electrical outlet so that the equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions.

The user may find the following booklet prepared by the Federal Communications Commission helpful:

"Interference Handbook, Bulletin CIB-2"

This booklet is available from the U.S. Government Printing Office, Superintendent of Documents, Mailstop SSOP, Washington, D.C. 20402-9328, ISBN 0-16-045542-1.

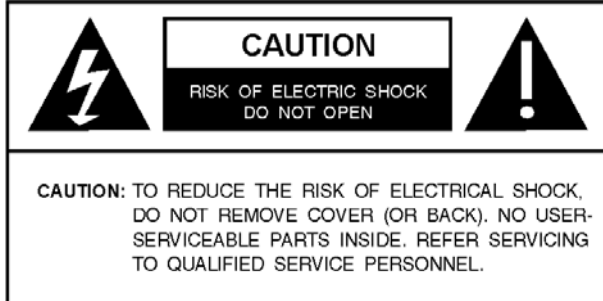
**⚠ Warning:** *Power must be removed from this unit before removing circuit modules or cables.*

**⚠ Caution:** *This unit contains circuit cards with integrated circuit devices that can be damaged by static discharge. Take all necessary precautions to prevent static discharge*

# Important Safeguards – Indoor Use

## GRAPHIC SYMBOL EXPLANATION

The lightning bolt symbol alerts the user to the presence of dangerous voltage that may present the risk of electric shock.



The exclamation point symbol alerts the user to the presence of important operating and maintenance instructions.

## WARNING

**To reduce a risk of fire or electric shock, do not expose this product to rain or moisture.**

1. **Read Instructions** - Read all safety and operating instructions before the product is operated.
2. **Retain Instructions** - Retain all safety and operating instructions for future reference.
3. **Heed Warnings** - Pay attention to all product warnings.
4. **Follow Instructions** - Follow all operating instructions.
5. **Installation and Wiring** - The equipment and all devices connected to it shall be installed and wired in accordance with the National Electrical Code, ANSI/NFPA 70.
6. **Cleaning - (Do not use caustic, abrasive or aerosol cleaners)**
  - a) For units that CAN BE DISCONNECTED from the power source, use a damp cloth for cleaning.
  - b) For units that CANNOT BE DISCONNECTED from the power source, use a damp cloth for cleaning and do not allow moisture or liquids to enter vents.
7. **Attachments** - Use only UL Listed Vicon recommended attachments to prevent unit damage and personal injury.
8. **Water and Moisture** - Use only products designed for outdoor environments where they will be exposed to water or moisture.
9. **Accessories** - Do not place the unit on an unstable surface to avoid falling. Use only UL Listed Vicon recommended mounting accessories.
10. **Ventilation** - Do not block ventilating slots and openings as they ensure reliable operation. Do not place the unit near a heat source or into an enclosure unless recommended by Vicon.
11. **Grounding** - Only products equipped with a 3-prong grounded plug should be inserted into a grounded power outlet. Contact an electrician to replace an obsolete outlet. Do not force a plug into a non-grounded outlet.
12. **Power Cord Protection** - Power supply cords should not be routed in trafficked areas or in tight spaces where they will be pinched or used to bear weight. Allow some slack in the cord where it enters the unit.
13. **Lightning** - Disconnect the product from its power source and cable system when possible to prevent damage due to lightning and power-line surges.
14. **Power Lines** - Do not locate outside cables over power or utility lines where they can fall and make direct contact. Contact with power lines can be fatal.
15. **Overloading** - Do not overload wall outlets and extension cords to prevent risk of fire and electric shock.
16. **Object and Liquid Entry** - Never probe through, or spill liquid into, enclosure openings to prevent risk of fire or electric shock.
17. **Servicing** - Refer all servicing to qualified service personnel.
18. **Damage Requiring Service** - Obtain service when:
  - a) The power-supply cord or plug is damaged.
  - b) Objects have fallen or liquid has been spilled into the product.
  - c) The product is not designed for outdoor use and has been exposed to water or moisture.
  - d) The product does not operate per the operating instructions. Perform Vicon recommended adjustments, modifications and troubleshooting only to avoid unit damage and personal injury.
  - e) The product has been dropped.
  - f) The product shows a significant change in performance.
19. **Replacement Parts** - Use only Vicon specified replacement parts or an approved equivalent to prevent unit damage and injury.
20. **Safety Check** - Request safety checks to be performed following repair or maintenance to verify proper operation.
21. **ESD Precaution** - Take all normal electrostatic discharge precautions to avoid component damage during installation and operation.
22. **For 230 VAC Devices Only** - When the disconnect device is not incorporated in the equipment or when the plug on the power supply is intended to serve as the disconnect device, follow the guidelines below:
  - a) For permanently connected 230 VAC units, a readily accessible disconnect device must be incorporated into the site wiring.
  - b) For 230 VAC units with a plug, the outlet must be installed near the unit and be easily accessible.
23. **For Devices Requiring a Separate Power Supply** - All devices requiring a separate power supply shall be powered by a UL Listed, Class 2 Power Supply.

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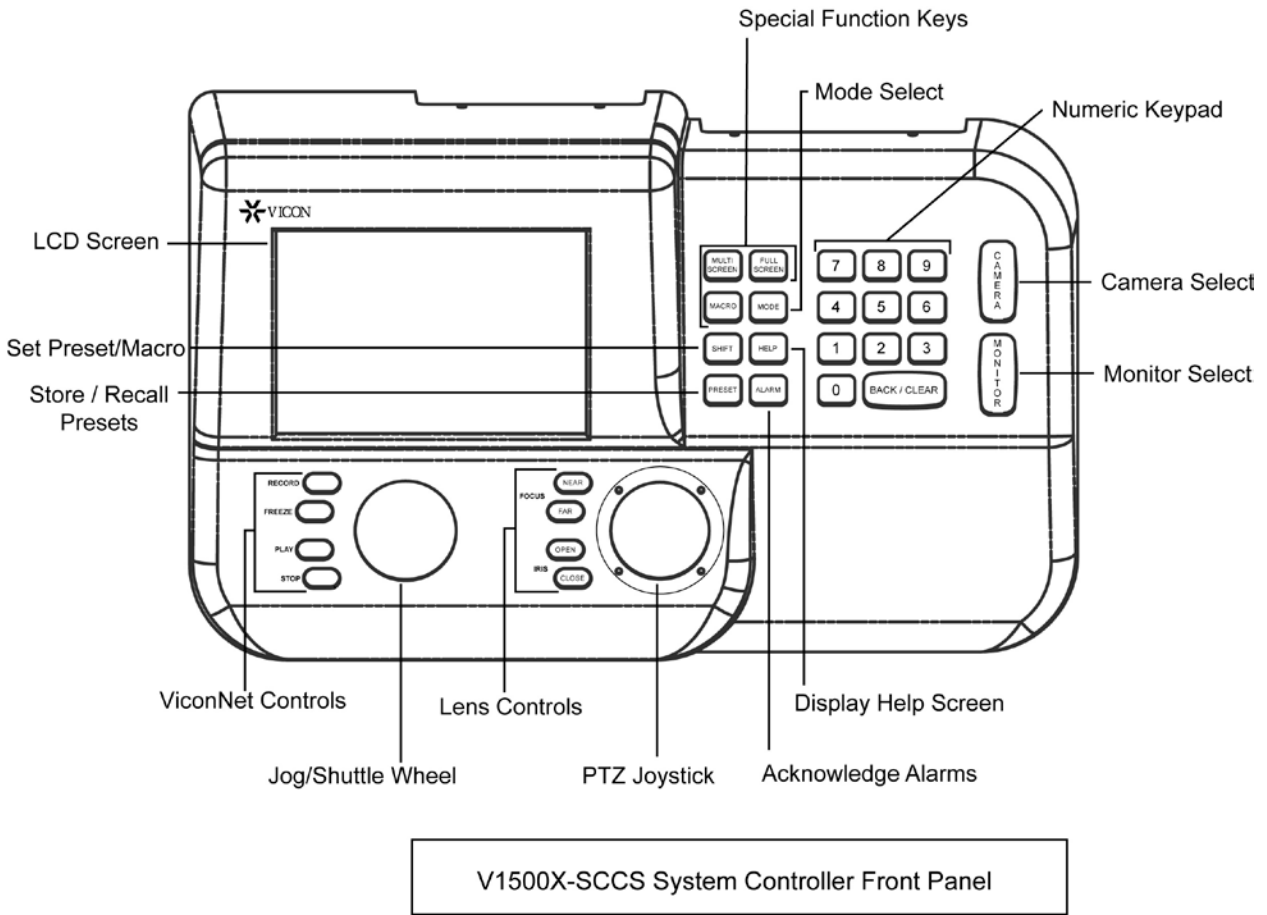
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# Introduction

The information in this manual covers installation, programming and operation for the V1500X-SCCS-1 System Controller. The installation procedures should only be performed by a qualified technician using approved materials in accordance with the national Electrical Code ANSI/NFPA 70, state and local wiring codes.

*Note: Read all of the instructions completely before installing or operating this equipment.*

The V1500X-SCCS-1 System Controller is capable of controlling camera stations connected to Vicon's ViconNet® Digital Video Management System (version 5.X or higher), including the Virtual Matrix Display Controller (VMDC), and Pilot/NOVA™ CPU-based matrix control systems\*. The menu-based LCD display changes to display the proper functionality for the selected control system. Mode selection functions are made using LCD touch keys on the controller. Multicolored, oversized keys and a wrist rest are just a few of the features that make the V1500X-SCCS-1 easy to use. Refer to Figure 1.



**Figure 1**  
**V1500X-SCCS-1 System Controller**

\*NOVA CPU products include: V1400X-CPU, V1422-CPU and V1500X-CPU.

The V1500X-SCCS-1 System Controller has three primary modes of operation: Pilot mode, Virtual Matrix mode and ViconNet mode. A fourth mode, Setup, provides for system configuration, sound control and diagnostics.

The controller employs a three function, proportional joystick for pan, tilt and zoom; focus and iris controls are available via pushbutton controls located next to the joystick. The primary display is a touch sensitive color LCD screen. This screen displays information based on mode and function selection. Touching icons on the LCD screen activates these functions. Status messages are displayed in boxes on the screen.

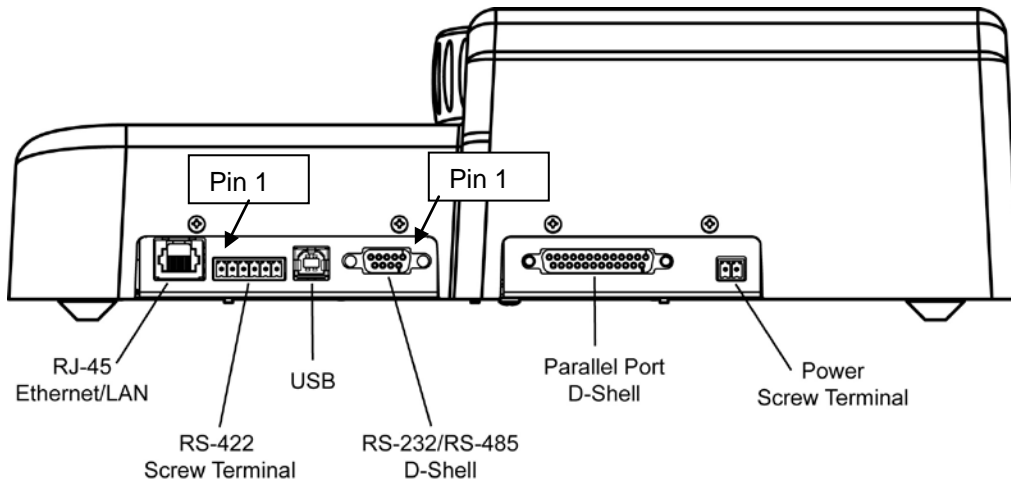
A standard numeric keypad with backspace/clear, as well as camera select and monitor select keys are provided. Near the numeric keypad is a set of special function keys. In the bottom left-hand corner of the V1500X-SCCS-1 are a Jog/Shuttle wheel and four ViconNet control buttons.

There are two authorization levels for users, manager and user; up to 10 users can be logged on to the controller.

A variety of Vicon keypads can be used together with the V1500X-SCCS-1 using a Distribution Line Control, such as the V1400X-IDL. The functionality of the keypad is dependant on the control system it is working with. Refer to the documentation for the control system for detailed information on each system.

# Installation

Connections are made using the rear panel connectors. Refer to the Reference chapter for cable recommendations. A 15 W power adapter is provided; mating connectors, as required, are also supplied in the accessory kit. Additionally, if the System Controller is to be used with a non-IP ViconNet/Virtual Matrix Controller system, a V422-CONV RS-422 to RS-232 converter is included.



V1500X-SCCS System Controller Rear Panel

## Rear Panel Connections

- Ethernet/LAN connection - RJ-45; for IP network connectivity
- RS-422 – 6-position screw terminal (Phoenix contact) for Pilot/non-IP ViconNet system
- USB – for future use
- RS-232/RS-485 – 9-pin D-shell connector; for Flash programming or direct connection to a ViconNet/VMDC in RS-232 Port mode (also allows non-IP ViconNet/VMDC and Pilot/NOVA systems to be connected to the system controller simultaneously)
- Parallel Port – 25-pin D-shell connector; for future use
- Power – 2-position screw terminal (Phoenix contact) for 15 W power adapter (provided); the connector is not polarity sensitive

*Note: Vicon strongly recommends the use of line conditioners, voltage regulators and uninterruptible power supply systems (UPS) to prevent voltage fluctuations that can affect operation and cause damage to the equipment.*

**Warning:** Do not apply power to any unit until all connections are properly made.

The V1500X-SCCS-1 can be connected to the control system using the Ethernet RJ-45 port, RS-422 port or the RS-232 port. Refer to the list of options below and the Connection Diagram that follows.

- A Pilot/NOVA system uses the RS-422 port.
- When a TCP/IP ViconNet or VMDC system is connected, use the RJ-45 Ethernet port. See *Connection for an IP ViconNet System* section.
- When only a non-IP ViconNet or Virtual Matrix system is connected, and the distance between the System Controller and the ViconNet device is less than 300 ft, use the RS-232 port.
- When only a non-IP ViconNet or Virtual Matrix system is connected, and the distance between the System Controller and the ViconNet device is greater than 300 ft, use the RS-422 port (a V422-CONV is required). See *Connection for a ViconNet System Using the V422-CONV* section.
- When both a Pilot/NOVA and non-IP ViconNet/VMDC control system are connected simultaneously to the System Controller, the Pilot/NOVA system uses the RS-422 port and the ViconNet/VMC port uses the RS-232 port; if the distance between the System Controller and the ViconNet device is greater than 300 ft, a V422-CONV is required on both the controller side and the ViconNet (PC) side; a gender converter is also required for the controller RS-232 connector. Additionally, the controller's RS-232 Port Mode must be setup to properly for this functionality. Refer to the Setup section of this manual for COMM settings. Refer to the section on using the V422-CONV that follows.

Fabricate a cable according to the pin out table for either a Pilot/NOVA or ViconNet system. Refer to the control system documentation for its pin numbers. As an added precaution, an optional screw terminal shield is provided in the accessory kit to protect against shorts. Screw this shield onto the connector after making connections. The power supply wiring does not require polarity distinctions, so the wires can be connected to either terminal. The 15 W power adapter is for 120/230 VAC input.

#### Connections Using the RS-422 Port

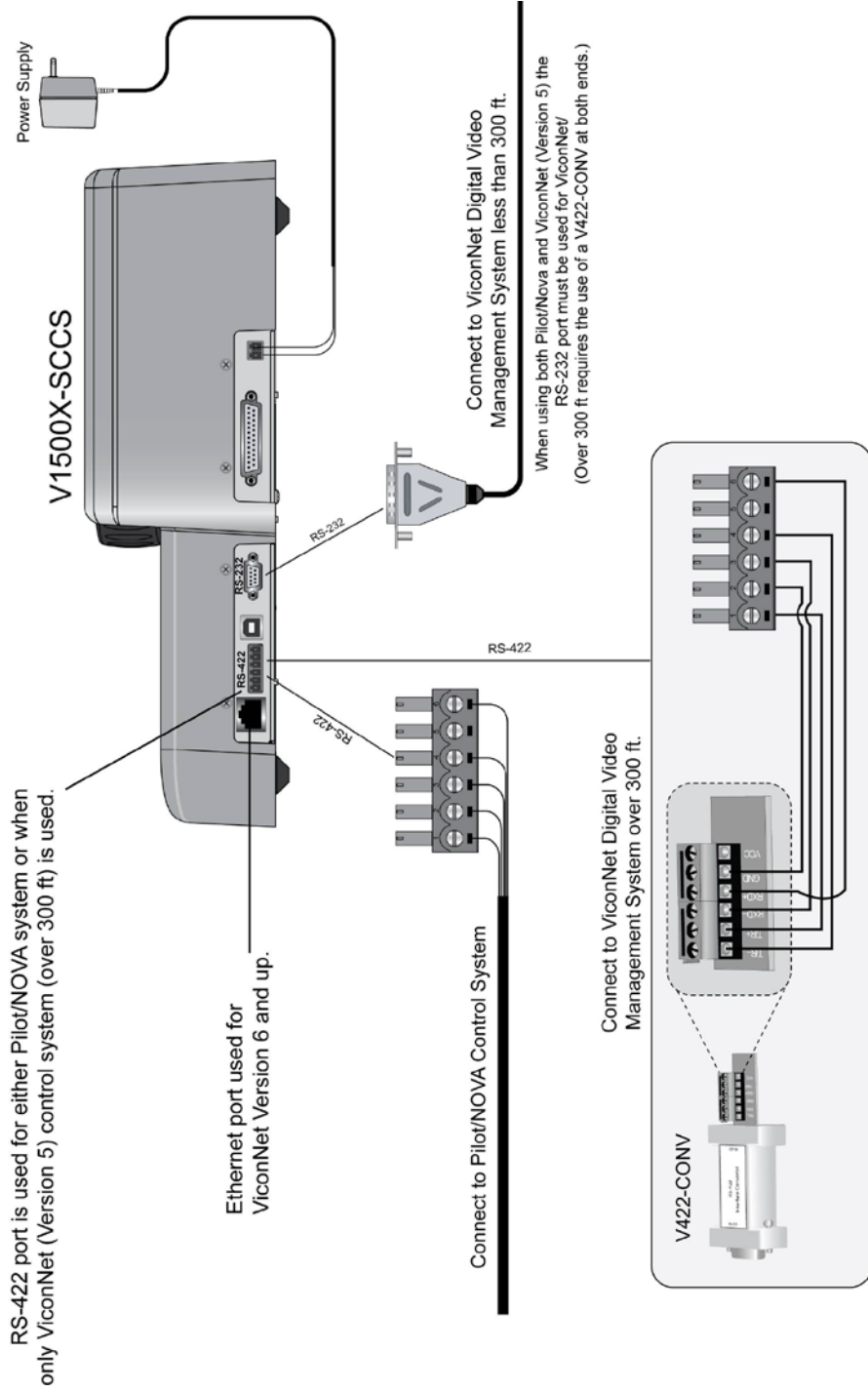
| Keypad Pin Number | Keypad Signal Name | Connecting Device Signal Name |
|-------------------|--------------------|-------------------------------|
| 1                 | Command In +       | Command Out +                 |
| 2                 | Ground             | Ground                        |
| 3                 | Response Out -     | Response In -                 |
| 4                 | Command In -       | Command Out -                 |
| 5                 | Ground             | Ground                        |
| 6                 | Response Out +     | Response In +                 |

#### Connections Using the RS-232 Ports

| Keypad Pin Number | Keypad Signal Name | ViconNet/VMDC Pin Number | ViconNet/VMDC Signal Name |
|-------------------|--------------------|--------------------------|---------------------------|
| 1                 |                    |                          |                           |
| 2                 | TxD                | 2                        | RxD                       |
| 3                 | RxD                | 3                        | TxD                       |
| 4                 |                    |                          |                           |
| 5                 | Ground             | 5                        | Ground                    |
| 6                 |                    |                          |                           |
| 7                 | CTS                | 7                        | RTS                       |
| 8                 | RTS                | 8*                       | CTS                       |
| 9                 |                    | 9                        |                           |

\*DIP Switch SW1, pole 7, must be set to the ON position (default).

**Note:** When using CAT5 or similar cable, the TxD and RxD signals should not be part of the same twisted pair.



Connection Diagram

# ViconNet/VMDC IP Systems

## Connection for an IP ViconNet System

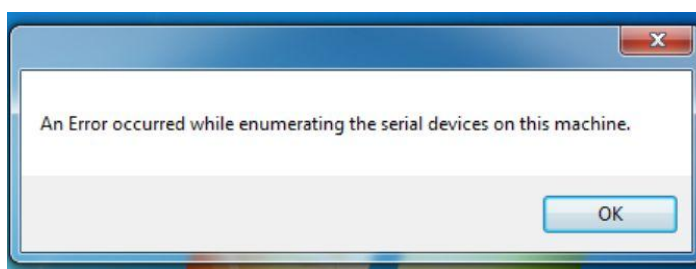
When using the V1500X-SCCS-1 to control a VMDC or ViconNet Workstation remotely through a network, a Lantronix® XPort Device Installer application needs to be installed on the Windows® PC used to initially configure the system controller. To download the latest version of this software, go to the Lantronix website, Worldwide: <http://www.lantronix.com/downloads.html> (China: <http://www.lantronix.cn/downloads.html>); open and run the Device Installer.

## Configuring the TCP/IP Connection Using the XPort Device

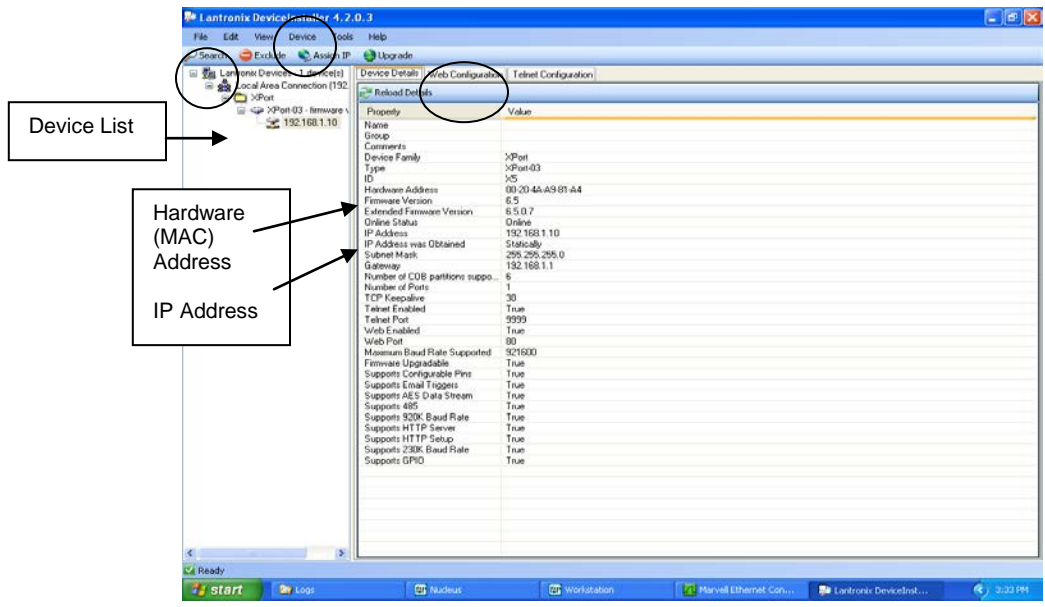
The XPort is the Ethernet network connection to the controller. The settings on the controller RS-422 port and the serial settings of the XPort must match. Refer to the screens that follow in the Setup Mode, Comm Settings section of this manual as needed.

1. At the controller enter the Setup mode and go to Comm Settings.
2. Enter the RS-422 settings menu and enter the BPS menu. Select 57.6 kbps baud rate and press Back to exit the menu.
3. Exit to the Mode Select screen and select either ViconNet or Virtual Matrix mode.
4. Slide switch SW2, on the bottom of the chassis, to the Ethernet/XPort position. Refer to Setting the DIP Switch in this manual for location and details.
5. Cycle power to the controller. Make sure the controller is connected to the network via an Ethernet cable. The XPort can now be programmed.
6. At the host PC, double click the device installer icon on the desktop to start Lantronix Device Installer. This can take a few minutes to search the network for any XPort devices attached to it. When a device is found, it will appear in the list on the left of the screen. If the system does not find a device, open the Devices menu from the toolbar and select Search to find the new device.

**Note:** The following error message may occur when running Lantronix's Device Installer on a Windows® 7 VMDC system. This is a windows warning message and is no cause for concern.



7. Click the device icon to open the tree to get information on the device, like the MAC (Hardware) and IP address for the XPort.

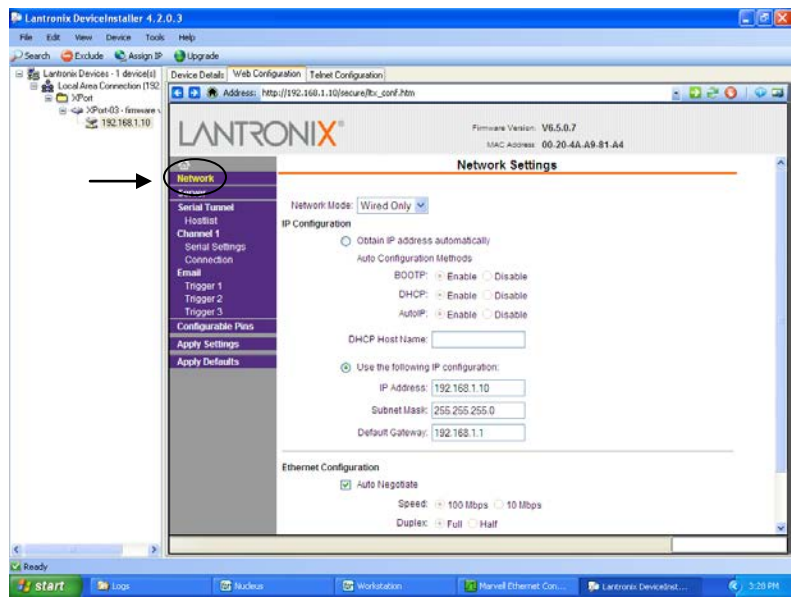


8. Select the Web Configuration tab above the information area on the screen. The screen will change and the current IP address will appear in the address bar of the web window. Click on the green arrow to proceed.

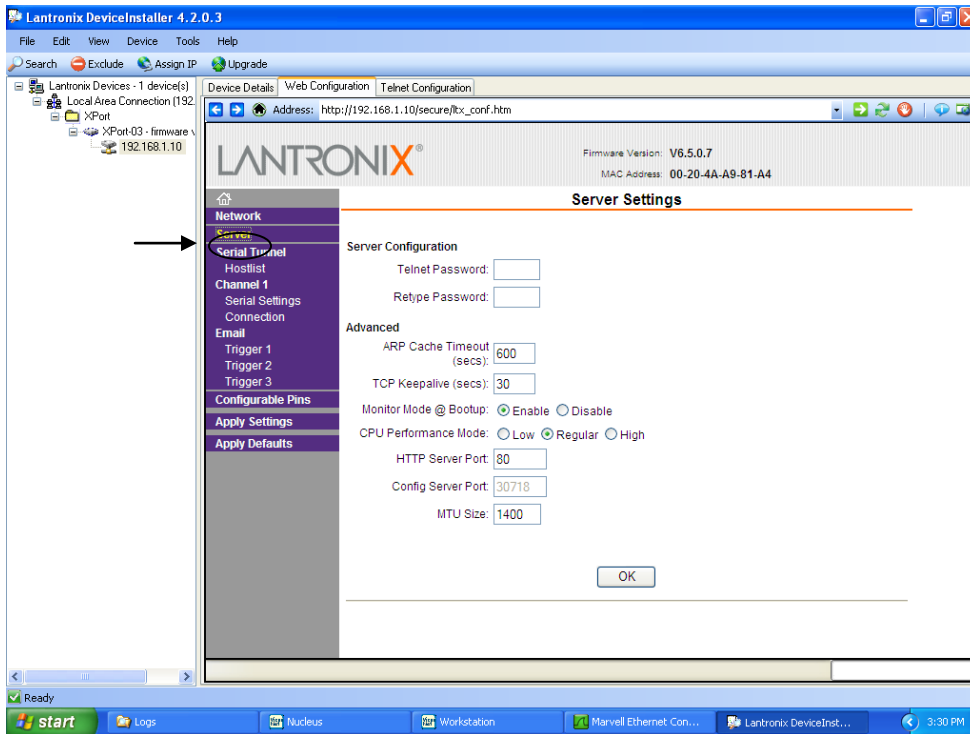


For first time users, enter OK for login information (no user or password required). If a user has entered a user name and password previously, enter it. The main web screen will display.

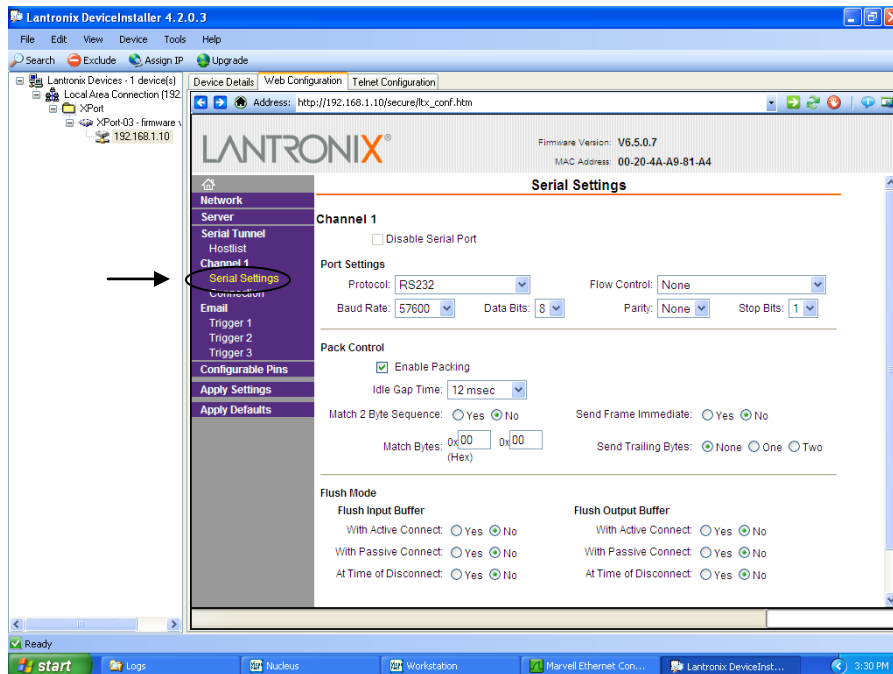
9. Select the Network option. In the Network Mode field, select Wired Only from the dropdown list. Under IP Configuration, enter an IP address for the controller and set the Subnet Mask and Default Gateway. Check Auto Negotiate for the Ethernet Configuration. When complete, click OK at the bottom of the screen.



10. Select the Server option. The following screen displays. Make sure the settings match those in the screen below: Advanced: ARP Cache Timeout – 600; TCP Keepalive – 30; Monitor Mode @ Bootup – Enable; CPU Performance Mode – Regular; HTTP Server Port – 80; MTU Size - 1400. When complete, click OK at the bottom of the screen.



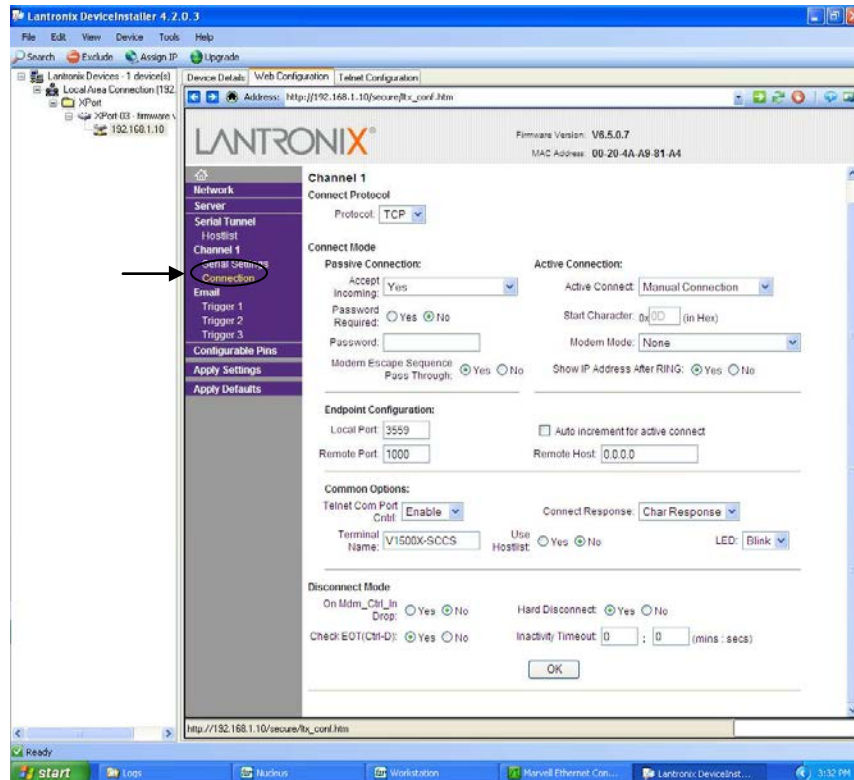
11. Select the Serial Settings option. The screen below displays. Change the settings to be: Port Settings, Protocol – RS232; Baud Rate 57600; Data Bits – 8; Flow Control – None; Parity – None; Stop Bits – 1; Pack Control, check Enable Packing; Idle Gap Time – 12 msec; Match 2 Byte Sequence – No; Send Frame Immediate – No; Match Bytes – 00; Send Trailing Bytes – None; Flush Mode – No in all fields. When complete, click OK at the bottom of the screen.



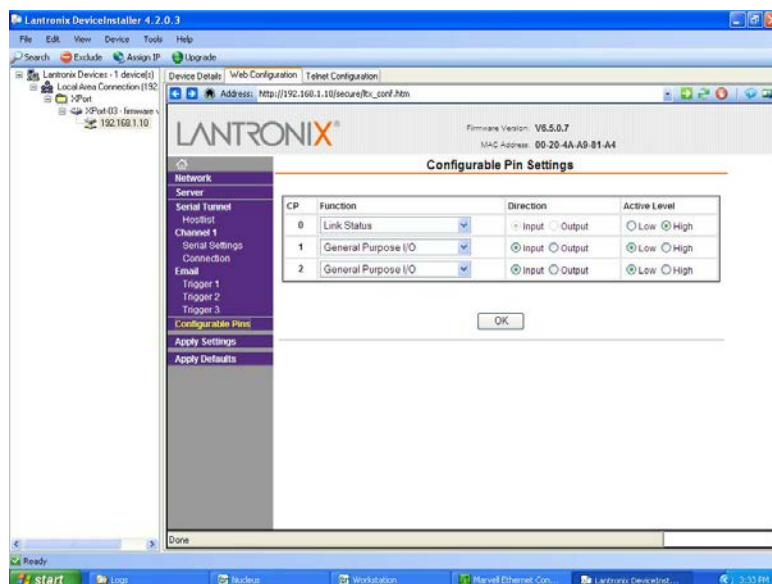
12. Select the Connection option. The following screen displays. Change the settings as follows:

|   |  |   |
|---|--|---|
| <b>Connect Protocol</b>                   | TCP                                    |   |
| <b>Connect Mode - Passive Connection:</b> | <b>Accept Incoming:</b> Yes            | <b>Connect Mode - Active Connection:</b>            |
|   | <b>Password Required:</b> No           | <b>Active Connect:</b> Manual Connection            |
|   | <b>Modem Escape Sequence</b>           | <b>Start Character:</b> 0D                          |
|   | <b>Pass Through:</b> Yes               | <b>Modem Mode:</b> None                             |
|   |  | <b>Show IP Address After RING:</b> Yes              |
| <b>Endpoint Configuration:</b>            | <b>Local Port:</b> 3559                | <b>Auto increment for active connect:</b> Unchecked |
|   | <b>Remote Port:</b> 1000               | <b>Remote Host:</b> 0.0.0.0                         |
| <b>Common Options:</b>                    | <b>Telnet Com Port Cntrl:</b> Disabled | <b>Connect Response:</b> Char Response              |
|   | <b>Terminal Name:</b> V1500X-SCCS-1    | <b>LED:</b> Blink                                   |
|   | <b>Use Hotlist:</b> No                 |   |
| <b>Disconnect Mode:</b>                   | <b>On Mdm_Ctrl_In Drop:</b> No         | <b>Hard Disconnect:</b> Yes                         |
|   | <b>Check EOT (CTRL-D):</b> Yes         | <b>Inactivity Timeout:</b> 0 mins; 0 secs           |

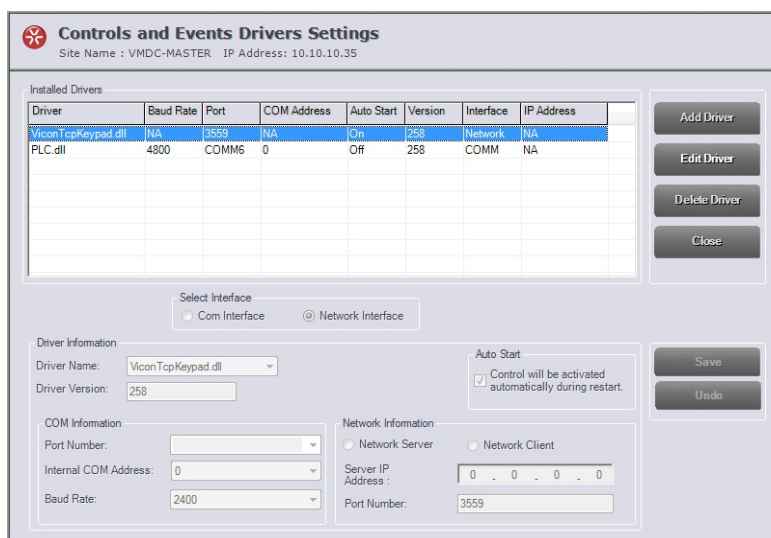
13. When complete, click OK at the bottom of the screen.



14. Select the Configurable Pins option. The following screen displays. Change the settings to be: CP 0, Function - Link Status; Direction grayed out; Active Level – High. CP 1 and 2, Function – General Purpose I/O; Direction - Input; Active Level – Low. When complete, click OK at the bottom of the screen.



15. Click Apply Settings from the Option list on the left side; it may take a few moments as the new settings are transmitted and stored in the XPort device. The device will reset and the main Web Configuration screen displays.
16. Close/Exit the Device Installer.
17. Reboot ViconNet. The System Controller and XPort device are now programmed. Configuration data is stored in non-volatile memory in the devices.
18. Verify the IP setting in ViconNet Control and Events Drivers Settings screen.
19. Be sure the ViconNet device has the latest Vicon drivers, Version 523 at a minimum. Be sure to set the TCP port to **3559** (CCTV port). Also make sure that Auto Start is checked.



20. Refer to the Setup section to configure the System Controller for IP connection.

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# Setup

## Login and Log Out

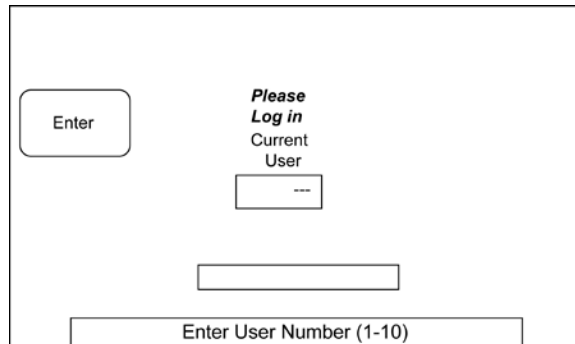
Upon power up, a Splash screen is displayed. Press Login button.



**Note:** For first time users, or if no users have been defined with a password, pressing Login takes the user directly to the screen of the last mode in use (Pilot mode is the default screen).

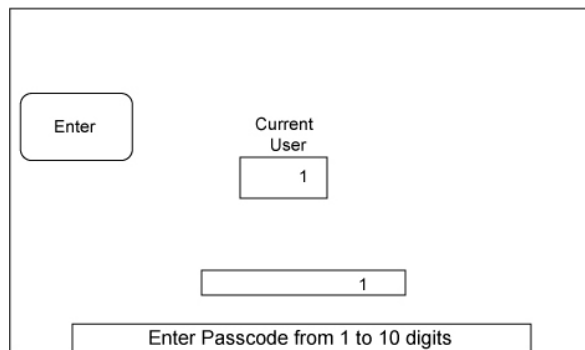
The System Controller provides for a User ID with a password be required upon login for added security, if desired. User ID and password are programmed from the Setup screen. If a user with a password has been programmed, the Log in screen displays.

1. Enter a User ID using the numeric keypad. The number displays in the box at the bottom of the screen. Press the Enter softkey; the number entered displays in the Current User box.



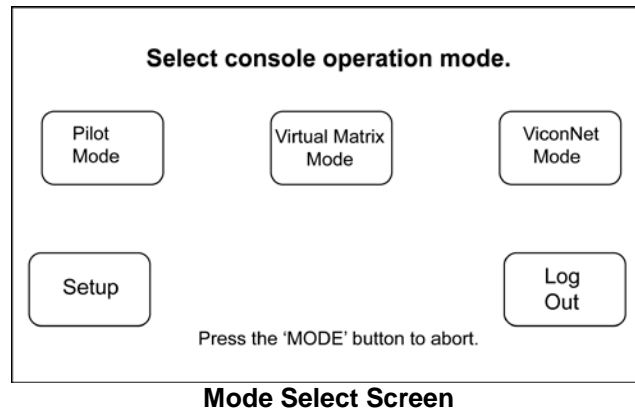
**Login Screen**

2. After a User ID is entered, the Password screen displays.
3. Enter the Password using the numeric keypad. Press the Enter softkey.



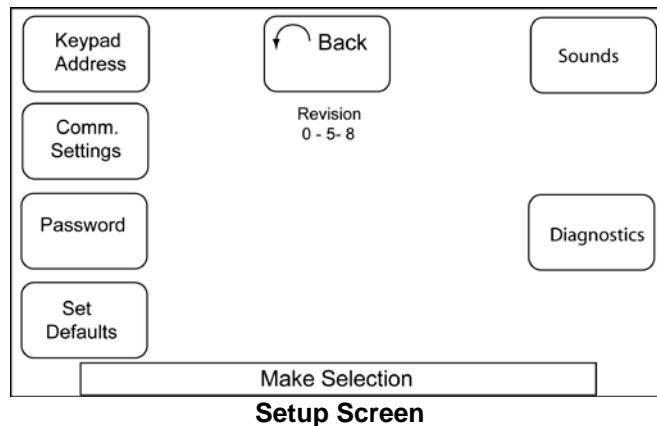
**Password Screen**

- To Log out of the system, press the Mode button; from the Mode Select screen touch the Log Out softkey.



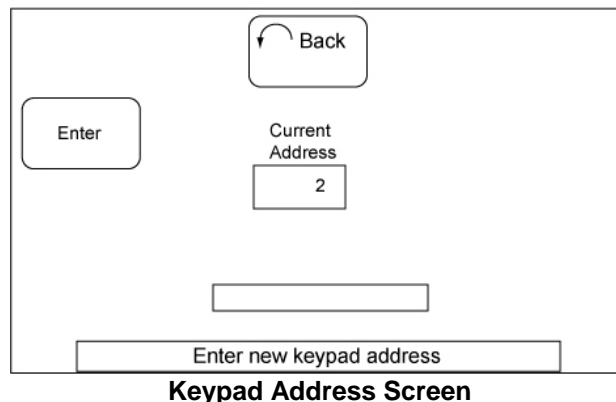
## Setup Mode

To configure the controller, the unit must be in Setup Mode. Press the Mode key to display the Mode Select screen. From the touch screen, select Setup softkey. The Setup screen displays. A Back softkey is provided on each screen to return to the previous screen.

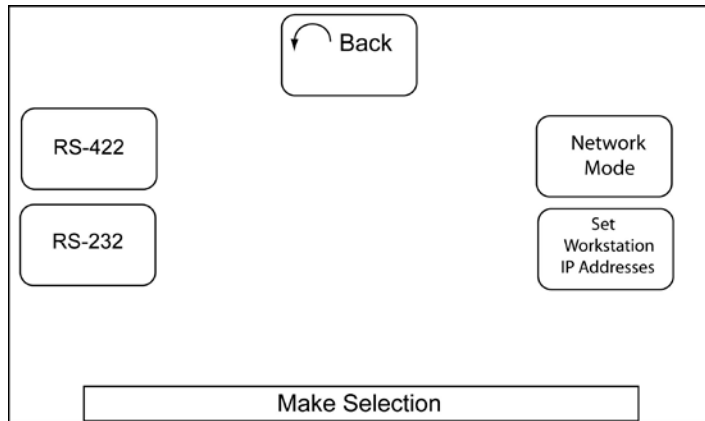


The Setup Mode provides softkeys to configure the Keypad Address, Communication Settings, Password, Default Settings, Sounds and Diagnostics.

- Press the Keypad Address softkey to display the Address screen. The System Controller address can be any number between 0 and 99. Use the numeric keypad to enter an address; the number displays in the box at the bottom of the screen. Each controller must have a unique address. Press the Enter softkey; the address entered displays in the Current Address box.

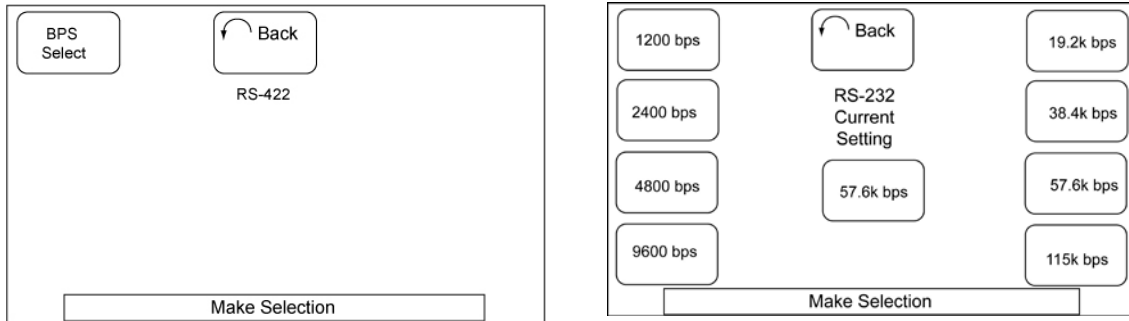


- Press the Comm. Settings softkey to access the Communication Settings. From there select RS-422, Network Mode or Set Workstation IP Addresses.

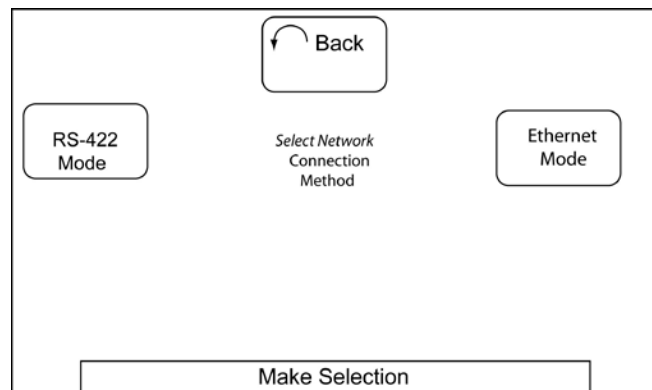


**Comm Setting Screen**

- From RS-422, select the BPS Select softkey and select a baud rate of 57.6k bps (for Ethernet mode).

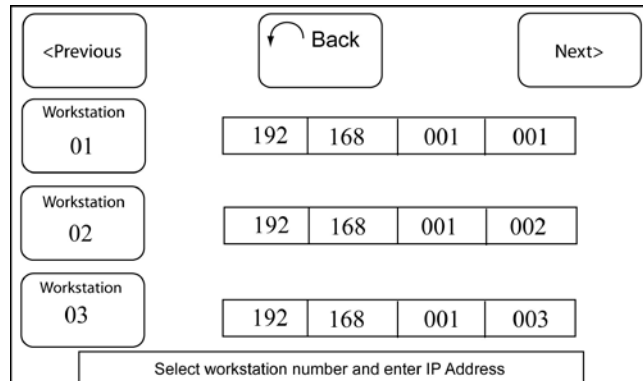


- From Network Mode, select Ethernet Mode (TCP/IP communication).

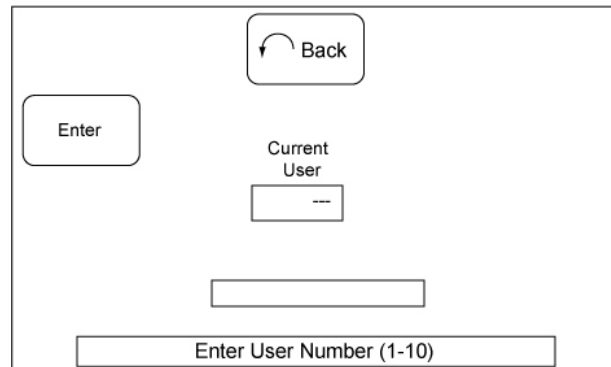


- Select the Set Workstation IP Addresses softkey from the Comm Settings screen. The workstation IP assignment menu shows IP address information for three workstations per page; the workstation number is displayed in the button to the left of its corresponding IP address. Use the Previous and Next buttons to scroll through the list of workstations. Select a workstation to program by pressing the Workstation button; the IP address information box turns yellow to indicate that the input mode is active. Use the numeric keypad to enter an IP for the selected workstation. When all digits are input, the Workstation button turns green and changes to display Press to Store. Press the button to complete the entry and store the IP address for that workstation. Press the Back softkey to return to the previous menu. Press the Back/Clear

button on the numeric keypad to erase the entry; pressing Back/Clear all the way back to the first digit entered clears the entry, restores the original IP address and aborts the input mode.

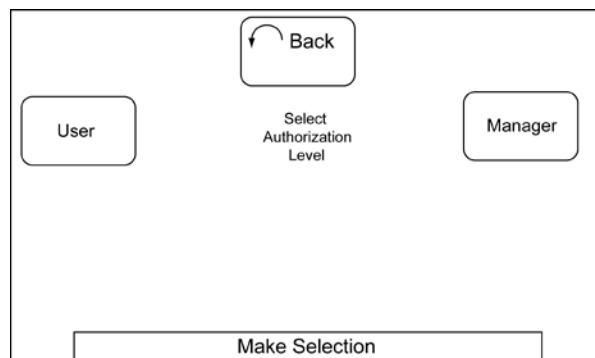


- From the Setup screen, touch the Password softkey to enter the User ID screen.

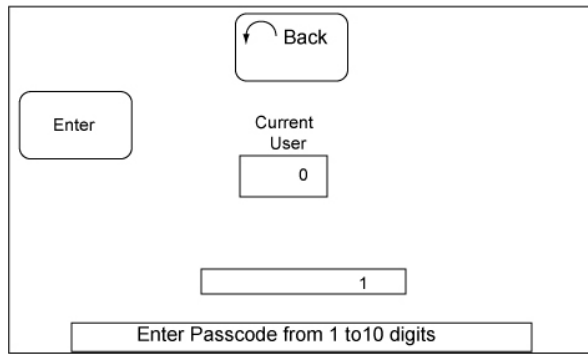


**User ID Screen**

- From the numeric keypad, enter a user ID. The User ID can be any number 1-10. Touch the Enter softkey and the Current User box displays the user ID. There are two authorization levels for users of the controller. A manager level has all programming privileges; a user level can only operate the controller, including recalling presets and macros. The Authorization Level screen will display.
- Select the desired Authorization Level for this user, Manager or User. The selected softkey will turn green and the screen will display the Set Password screen.



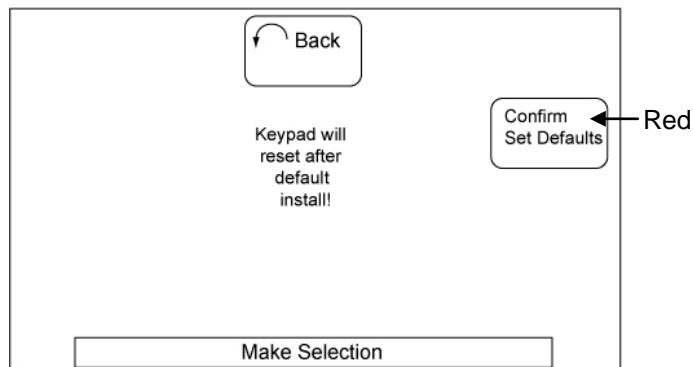
- Using the numeric keypad, enter a password and press the Enter softkey. The password can be any number up to 10 digits. A re-enter for verification screen displays. Re-enter the password. The screen returns to the Setup screen. To clear an existing password, press Enter softkey without any digit input; press Enter again to verify.



**Set Password Screen**

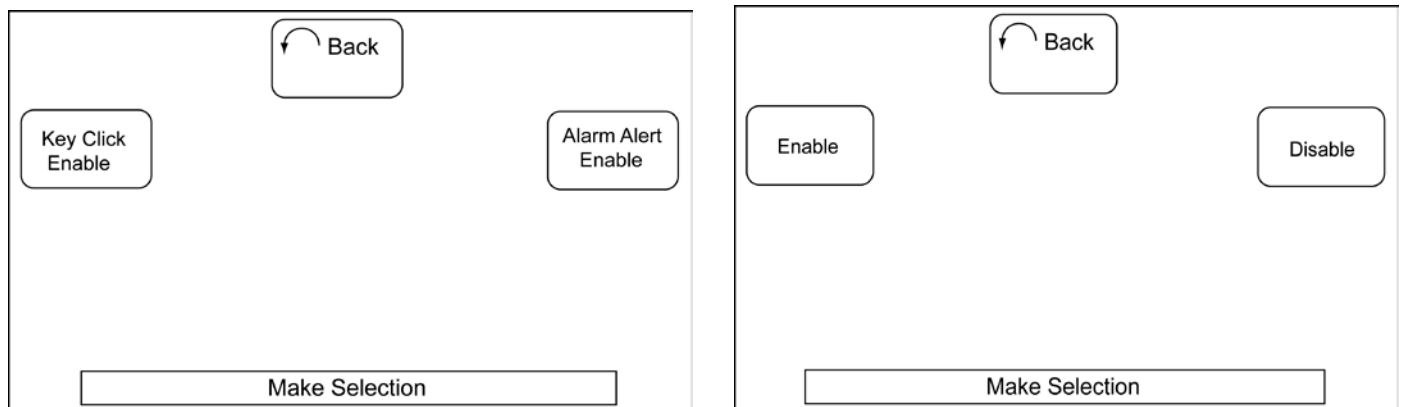
After the user ID and password is set up, that user must enter that ID and password before the System Controller can be used to control the system. It is important to keep a record of the password. If the password is misplaced or forgotten, call Vicon Technical Support at 1-800-34-VICON (1-800-348-4266).

10. Use the Set Defaults softkey on the Setup screen to display the screen to return the unit to factory defaults. The Confirm Set Defaults button is in red. Selecting this softkey deletes all user settings.



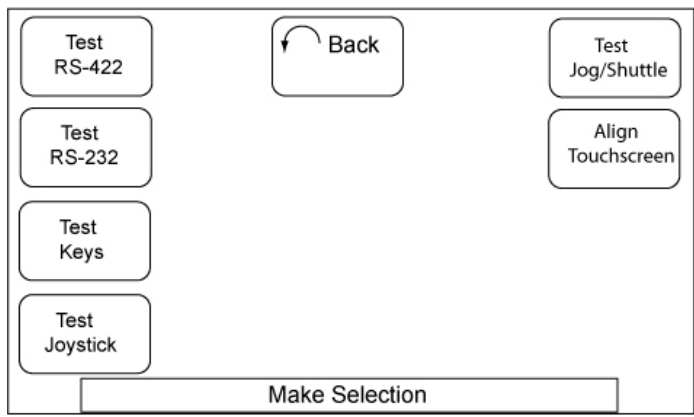
**Default Screen**

10. From the Setup screen, use the Sounds softkey to enable or disable sounds for touching a softkey and alarm notification (default setting is Enable). Press Key Click Enable to turn on/off the beep sound when a softkey is touched. An Enable/Disable screen displays. Press the Enable or Disable softkey; the active button turns green. To sound a buzzer when an alarm occurs, use the Alarm Alert Enable softkey and select Enable or Disable. The active button turns green. The Back button returns the screen to the main Setup.



**Sounds Screen**

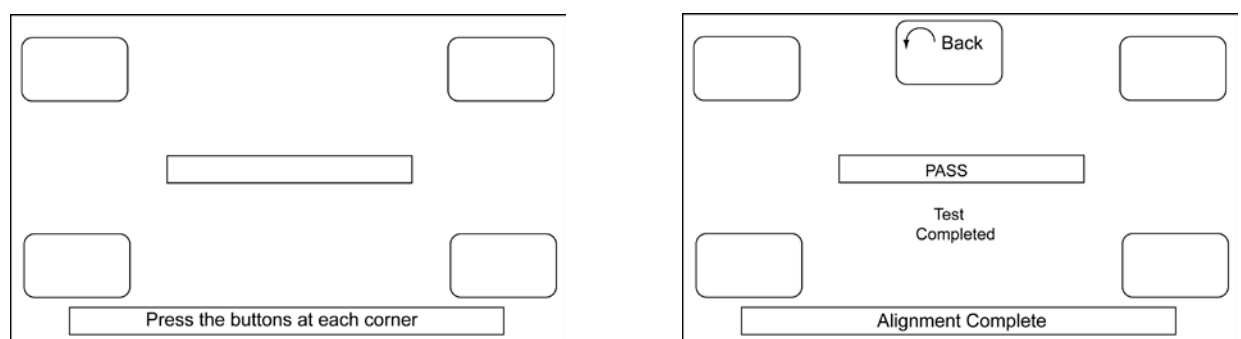
11. Use the Diagnostics softkey on the Setup screen to test the System Controller. The diagnostics can be run to test RS-422, RS-232, the function keys, the joystick, the Jog/Shuttle wheel and to align the touch screen.



**Diagnostics Screen**

When Test Keys is selected, press the key on the controller to be checked; the name of the key flashes in the box. If the joystick is being tested, the user moves the joystick while testing; the position is indicated on the screen. The joystick auto-calibrates on each power up. Move the Jog/Shuttle wheel and the function displays in the box.

Align Touchscreen calibrates the sensitivity and accuracy of the soft keys. After it is selected, touch the button in each corner of the screen; it will turn green. A testing progress bar displays as the test is in progress; after the test is completed, Pass or Fail will display. The Back button at the top of the screen will not display until after all four buttons have been pressed and passed. The user can then return to the Setup screen using the Back button.



**Align Touchscreen Screens**

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## Operation

### Login and Log Out

Upon power up, the Splash screen displays.



Press the Login button. If a User ID and password have been programmed for added security, the Login screen displays. If no users with passwords have been entered, the screen goes directly to the screen of last mode of operation. Use the Mode key to go to a different screen.

### Controlling Screen Brightness and Contrast

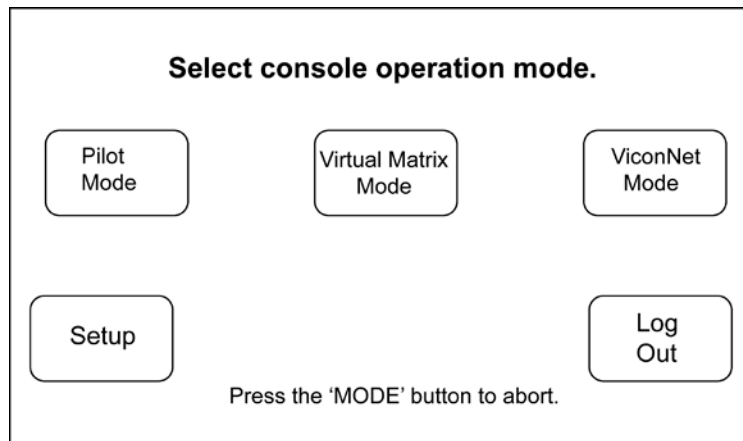
The brightness and contrast of the LCD screen can be modified. To adjust the screen contrast, press the Shift key. Turn the Zoom control at the top of the joystick until the contrast level of the screen is desired. Press Shift key again to end this control.

### Mode Selection

Press the Mode button in the Special Function button group. Refer to Figure 1. When the Mode button is pressed, the LCD displays the Mode Select screen. Displayed on the screen are five buttons: Pilot Mode, Virtual Matrix Mode, ViconNet Mode, Setup and Log Out. Select ViconNet mode or Virtual Matrix mode.

**Note:** Upon power up, after login, the System Controller displays the screen of the last mode it was in.

Pressing the Mode button prior to making a selection returns the controller to the operational mode active prior to entering the Mode Select menu. Once an operating mode is selected, the System Controller remains in that mode until a different mode is selected from the Mode Select menu, even upon reset.

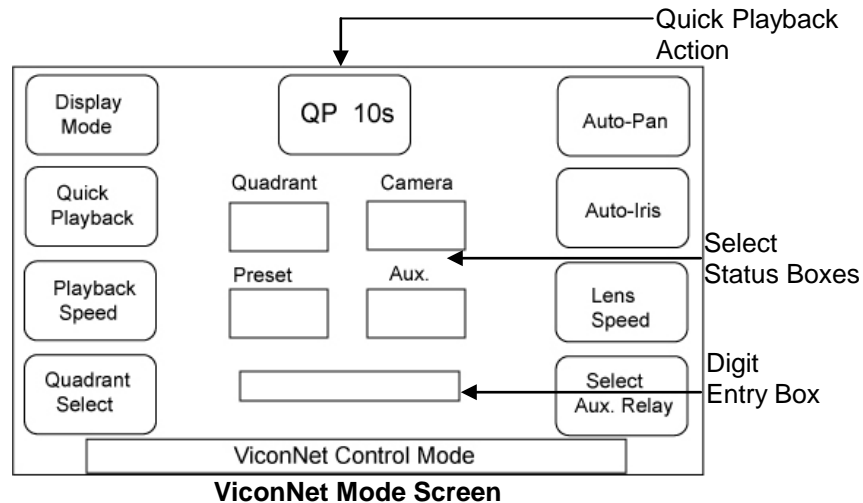


**Mode Select Screen**

## ViconNet Mode

In ViconNet mode, when connected to a compatible V1500X-SCCS-1 Controller-enabled ViconNet device, (i.e., a Kollektor recorder or ViconNet Workstation/NVR), it provides for control access to Kollektors/WS/NVRs, multi-screen controls, video controls, Quick Playback and macro selection. ViconNet controls include standard PTZ, preset and camera select actions. Kollektors/WS/NVRs and quadrants are configured within the ViconNet system. Refer to the appropriate Kollektor and ViconNet documentation as needed.

ViconNet mode makes use of the numeric keypad, the PTZ controls, the Special Function buttons, the Jog/Shuttle dial and control buttons, and touch sensitive keys on the LCD screen. Near the numeric keypad is a set of Special Function keys. Both the Multi-Screen and Full Screen keys are used in ViconNet mode.



The LCD screen in ViconNet mode has four Select Status boxes that display the numbers of the currently selected quadrant, camera, preset and auxiliary relay. There is a digit entry box below the Select Status boxes; as digits are input at the numeric keypad, they are displayed in the entry box.

At the top of the LCD display is the current setting for Quick Playback Action. The playback time is noted in (S)econds and/or (M)inutes and is programmable. Pressing this button sends a quick playback message to the selected Kollektor/NVR/WS for the time duration listed on the button. The background for this button is colored red for easy identification.

There are four buttons on the left side of the LCD screen: Display Mode, Quick Playback, Playback Speed and Quadrant Select. On the right side of the LCD screen, there are four buttons for auto-pan, auto-iris, lens speed and auxiliary relay selection.

In ViconNet mode, the controller must be selected to a quadrant before any camera or PTZ functions can be actioned.

Kollektors/NVRs/WS are capable of displaying multiple scenes on one screen; these individual picture displays are named “quadrants.”

1. To select a quadrant for action, enter the quadrant number via the numeric keypad and press the Quadrant Select softkey on the LCD screen; the selected quadrant number appears in the Quadrant Select Status box. All further commands are directed to the selected quadrant of the target Kollektor/NVR/WS.
2. To select a camera to a previously selected quadrant, enter the camera number via the numeric keypad and press the Camera button on the controller; the camera number appears in the Camera Select Status box on the LCD screen. All PTZ actions are directed to this camera until a new camera is selected, a different quadrant is selected or a different Kollektor/NVR/WS is targeted.

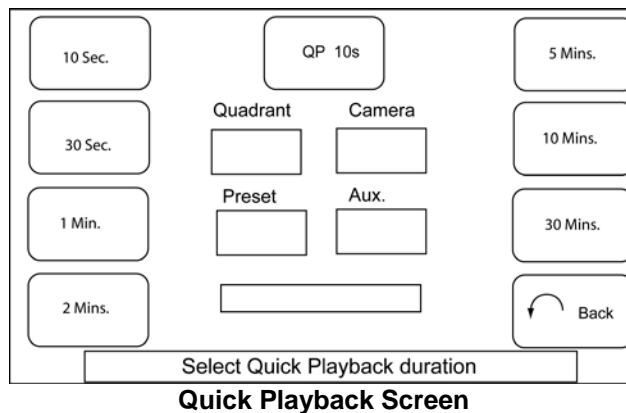
**Note:** The Camera key has a function that allows a quick callback between the last two cameras selected. When the operator presses the Camera key without selecting any numbers from the keypad, the camera selection reverts to the previous camera selected. If pressed again, the camera returns to the original selection. In this way, the operator can toggle between the last two cameras selected, until another camera is selected.

The System Controller allows for the selection of up to 63 workstation IP addresses.

1. Press the Shift key; the Quick Playback Action button at the top of the screen changes to Workstation Select and an arrow indicates the Shift condition.
2. Use the numeric keypad to enter the workstation number; the number will display in the box at the bottom.
3. Press the Workstation Select softkey (it reverts back to its original function, Quick Playback Action); any active socket connection is terminated and the controller will establish a connection with the selected IP device.
4. The LCD status information bar at the bottom of the controller should read: "Searching for host... Please standby..." while the controller is attempting to connect to the selected IP; when a connection is made, the status bar will change to read: "ViconNet Control Mode".

The Quick Playback Action button located at the top center of the LCD screen is programmable for time duration.

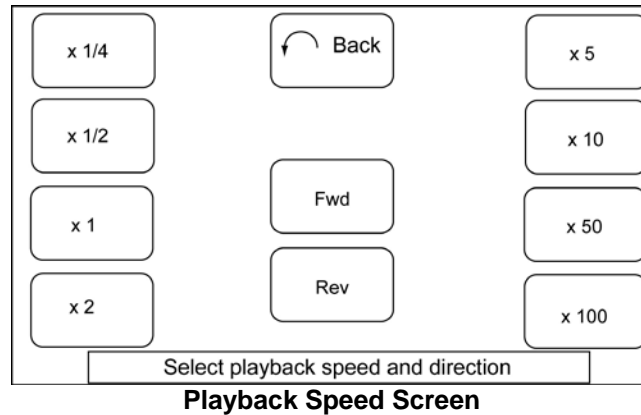
1. From the main ViconNet Mode screen, select the Quick Playback button to open the Quick Playback Time Select screen; the labels of the select buttons on the left and right margins of the LCD screen display different time values. The bottom button of the right column provides a Back function, which allows the user to return to the main ViconNet screen without making any Quick Playback changes.



2. Pressing one of the time select softkeys changes the Quick Playback Action time duration and is reflected in the Quick Playback Action softkey. The LCD screen returns to the main ViconNet Mode screen and the new Quick Playback Action selection displays in the top center button. Whenever the Quick Playback select softkey is pressed, a Quick Playback command for the listed duration time will be commanded to the target Kollector/NVR/WS. The selected playback duration remains until reprogrammed via the above procedure.

Playback speed is variable for forward and reverse directions.

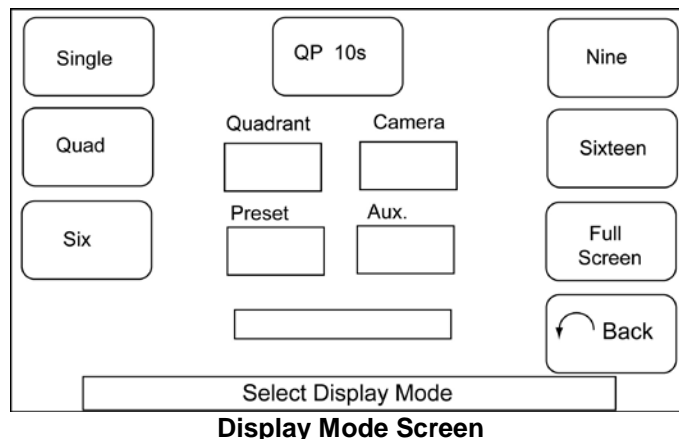
1. From the main ViconNet Mode screen, press the Playback Speed softkey to open the Playback Speed Selection menu; the softkeys on the margins of the LCD are labeled with speed factors of real time. The playback speed factor key currently selected is illuminated green. At the top center of the screen is a Back key to return to the previous menu. At the bottom center of the screen are two playback directions, Forward and Reverse. The playback direction key currently selected is illuminated green. Pressing the companion key switches the focus to the other direction.



2. Pressing one of the speed factor softkeys sends that playback speed for the selected direction to the target Kollektor/NVR/WS. This speed selection remains until changed by the user.

Multi-screen displays are possible on Kollektors/NVRs/WS. The number of camera displays, or quadrants, displayed is assigned by programming the Multi Screen Special Function button. This key is programmed by pressing the Display Mode softkey on the LCD screen.

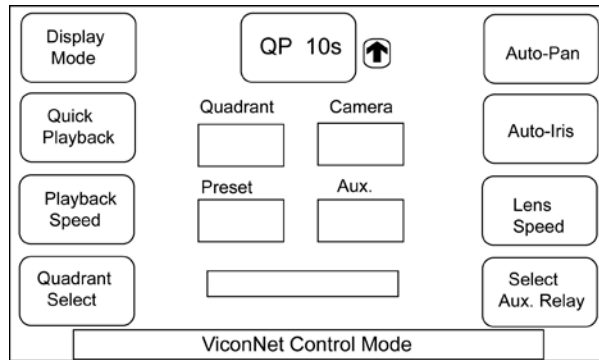
1. From the main ViconNet Mode screen, press the Display Mode softkey to open the Display Mode Select screen; the available modes are listed in the margin softkeys.



2. Pressing a display mode assigns that mode selection to the Multi Screen button in the Special Function button group and the screen returns to the ViconNet Mode screen. Until reprogrammed by the user, whenever the Multi Screen button is pressed, a command to set the selected multi-screen display mode is sent to the Kollektor/NVR/WS. As with the other programming screens, there is a Back button to abort the mode set.
3. Pressing the Full Screen button of the Special Function group commands the Kollektor/NVR/WS to display the previously selected quadrant or camera full screen.

To activate presets:

1. Preset positions are recalled by entering the preset number from the numeric keypad and pressing the Preset key from the Special Function keys.
2. To command a receiver/dome to store a new preset position, move the receiver/dome to the desired position. Enter the preset number via the numeric keypad. Press the Shift button located in the Special Function button group. An up pointing arrow appears immediately to the right of the red QP indicator on the LCD screen. Then press the Preset button. The preset number appears in the preset field of the Select Status area of the LCD and the up arrow disappears.



### Setting Presets in ViconNet Mode

Using the PTZ and other lens functions on the controller:

1. To move the pan-and-tilt device in a horizontal (pan) or vertical (tilt) motion, deflect the joystick in the direction desired; moving the joystick in a diagonal motion provides simultaneous pan and tilt.
2. To control zoom, twist the top of the joystick clockwise to zoom in; turning it in a counter-clockwise direction will zoom out.
3. Focus (near and far) and Iris (open and close) are controlled via push buttons located next to the joystick.
4. Use the Lens Speed softkey to cycle through the lens speeds.
5. To use auto-pan or auto-iris functions, press the appropriate softkey.

Receiver/dome auxiliary relays are actioned by selecting the auxiliary relay number from the numeric keypad and pressing the Select Aux. Relay softkey on the LCD screen. Note that momentary aux functions stay active as long as the softkey button is pressed; latching relays remain active until the button is pressed again.

Macros must be named with a number in ViconNet if they are to be recalled by the System Controller in ViconNet mode. The number can be from 1-999. To recall macros programmed at the Kollector/NVR/WS, enter the macro number via the numeric keypad and press the Macro button of the Special Function button group. Macros must be previously defined.

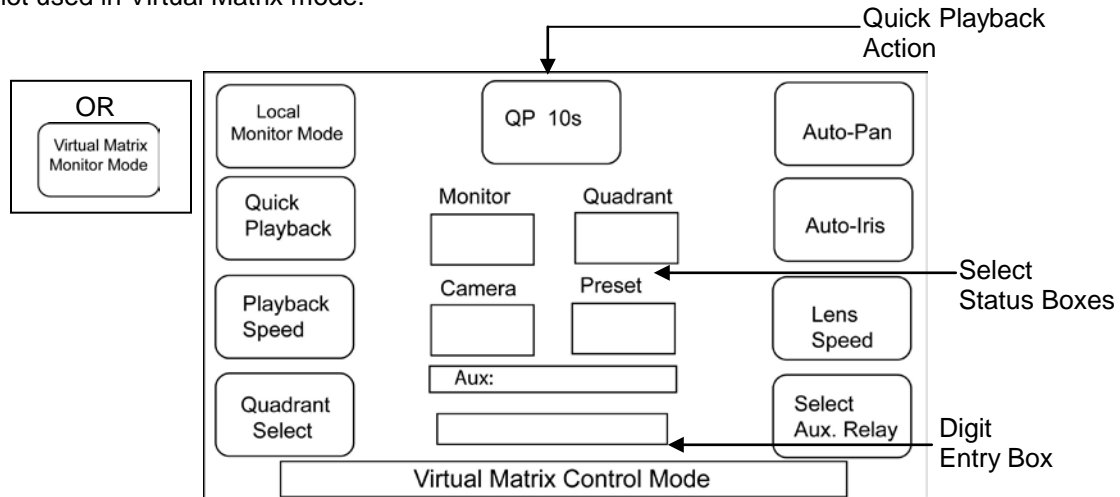
ViconNet control buttons are provided to Record, Freeze, Play, and Stop. The Jog/Shuttle provides for Frame Advance and Frame Reverse as well as Fast Forward and Reverse.

1. Pressing the individual function key for record, freeze, play or stop commands the Kollector/NVR/WS to perform those functions. The speed at which the playback runs is at the previously selected Playback Speed set from the Playback Speed menu.
2. The Jog/Shuttle center wheel provides for Frame Advance and Frame Reverse. Rotating the wheel clockwise commands the Kollector/NVR/WS to advance frame by frame. Rotating counter clockwise reverses frame by frame.
3. Twisting the outer ring of the Jog/Shuttle commands the Kollector/NVR/WS to either fast forward or rewind, twisting clockwise to fast forward and counter-clockwise to rewind.

## Virtual Matrix Mode

In Virtual Matrix Mode; the Virtual Matrix Display Controller simulates standard crosspoint switcher functionality. When connected to a compatible V1500X-SCCS-1 Controller-enabled VMDC, it provides for control access to the video controls, Quick Playback and macro selection. Virtual Matrix controls include standard PTZ, preset and camera select actions. The VMDC and quadrants (rectangles) are configured within the VMDC system. Refer to the appropriate Virtual Matrix documentation as needed.

Virtual Matrix Mode makes use of the numeric keypad, the PTZ controls, the Special Function buttons, the Jog/Shuttle dial and control buttons, and touch sensitive keys on the LCD screen. Near the numeric keypad is a set of Special Function keys. The Full Screen key is used to display full screen on the PC; the Multi-Screen key is not used in Virtual Matrix mode.

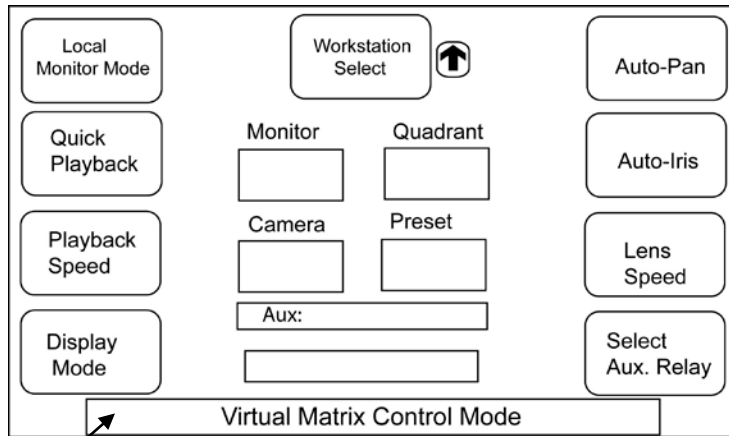


The LCD screen in Virtual Matrix mode has five Select Status boxes that display the numbers of the currently selected monitor, quadrant, camera, preset and aux. There is a digit entry box below these boxes; as digits are input at the numeric keypad, they are displayed in the entry box. The screen below shows the Virtual Matrix screen when the Shift key is pressed for additional functionality.

At the top of the LCD display is the current setting for Quick Playback Action. The playback time is noted in (S)econds and/or (M)inutes and is programmable. Pressing this button sends a quick playback message to the VMDC for the time duration listed on the button. The background for this button is colored red for easy identification.

There are four buttons on the left side of the LCD screen: Local Monitor Mode/Virtual Matrix Monitor Mode, Quick Playback, Playback Speed and Quadrant Select. On the right side of the LCD screen, there are four buttons for Auto-Pan, Auto-Iris, Lens Speed and Auxiliary selection.

The button that displays either Local Monitor Mode (default) or Virtual Matrix Monitor Mode indicates the mode to switch to. The screen can be viewed in traditional ViconNet mode (i.e., like a Kollector Main screen) by choosing the Local Monitor Mode; select Virtual Matrix Monitor Mode to view the screen like a Virtual Matrix Display Controller. This choice is available from ViconNet version 6 and higher. If Local Monitor Mode is selected, refer to the ViconNet Mode for operation instructions.



**Virtual Matrix Mode Screen with Shift Key**

In Virtual Matrix mode, the controller must be selected to a Monitor before any camera or PTZ functions can be actioned.

1. Select a Monitor by entering its number via the numeric keypad and then pressing the Monitor key on the controller. The target monitor number is then displayed in the monitor Select Status box. All further commands are directed to the target monitor.

The VMDC is capable of displaying multiple scenes on one screen; these individual picture displays are named “quadrants.”

2. To select a quadrant for action, enter the quadrant number via the numeric keypad and press the Quadrant Select softkey on the LCD screen; the selected quadrant number appears in the Quadrant Select Status box. All further commands are directed to the selected quadrant of the target monitor. Selecting “0” with quadrant select displays full screen on the monitor.
3. To select a camera to a previously selected quadrant, enter the camera number via the numeric keypad and press the Camera button on the controller; the camera number appears in the Camera Select Status box on the LCD screen. All PTZ actions are directed to this camera until a new camera is selected, a different quadrant is selected or a different monitor is targeted.

**Note:** The Camera key has a function that allows a quick callback between the last two cameras selected. When the operator presses the Camera key without selecting any numbers from the keypad, the camera selection reverts to the previous camera selected. If pressed again, the camera returns to the original selection. In this way, the operator can toggle between the last two cameras selected, until another camera is selected.

The System Controller allows for the selection of up to 63 workstation IP addresses.

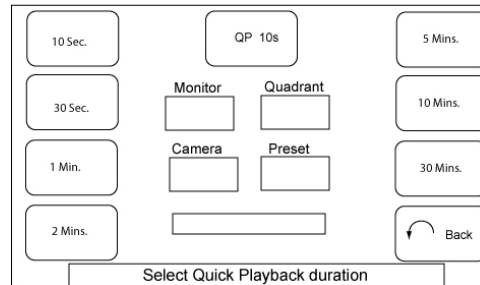
1. Press the Shift key; the Quick Playback Action button at the top of the screen changes to Workstation Select and an arrow indicates the Shift condition.
2. Use the numeric keypad to enter the workstation number; the number will display in the box at the bottom.
3. Press the Workstation Select softkey (it reverts back to its original function, Quick Playback Action); any active socket connection is terminated and the controller will establish a connection with the selected IP device.
4. The LCD status information bar at the bottom of the controller should read: “Searching for Host... Please Standby...” while the controller is attempting to connect to the selected IP; when a connection is made, the status bar will change to read “Virtual Matrix Control Mode”.

Additionally, using Shift, the Quadrant Select softkey is reassigned to the Display Mode function, used with Local Monitor Mode.

1. Enter the number of rectangles to be displayed on the workstation using the numeric keypad and then press the Display Mode softkey; the number of rectangles displayed on the workstation should reflect the entry.
2. After the Display Mode softkey is pressed, it reverts back to its original function, Quadrant Select.

The Quick Playback Action button located at the top center of the LCD screen is programmable for time duration.

1. From the main Virtual Matrix Mode screen, select the Quick Playback button to open the Quick Playback Time Select screen; the labels of the select buttons on the left and right margins of the LCD screen display different time values. The bottom button of the right column provides a Back function, which allows the user to return to the main Virtual Matrix screen without making any Quick Playback changes.

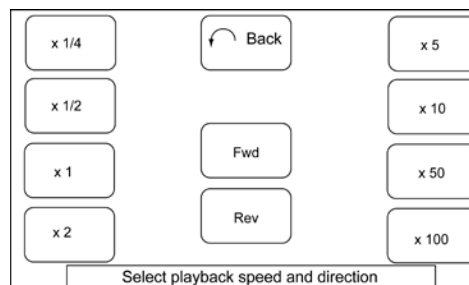


**Quick Playback Screen**

2. Pressing one of the time select softkeys changes the Quick Playback Action time duration and is reflected in the Quick Playback Action softkey. The LCD screen returns to the main Virtual Matrix Mode screen and the new Quick Playback Action selection displays in the top center button. Whenever the Quick Playback select softkey is pressed, a Quick Playback command for the listed duration time will be commanded to the target monitor. The selected playback duration remains until reprogrammed via the above procedure.

Playback speed is variable for forward and reverse directions

1. From the main Virtual Matrix Mode screen, press the Playback Speed softkey to open the Playback Speed Selection menu; the softkeys on the margins of the LCD are labeled with speed factors of real time. The playback speed factor key currently selected is illuminated green. At the top center of the screen is a Back key to return to the previous menu when playback is complete. At the bottom center of the screen are two playback directions, Forward and Reverse. The playback direction key currently selected is illuminated green. Pressing the companion key switches the focus to the other direction.



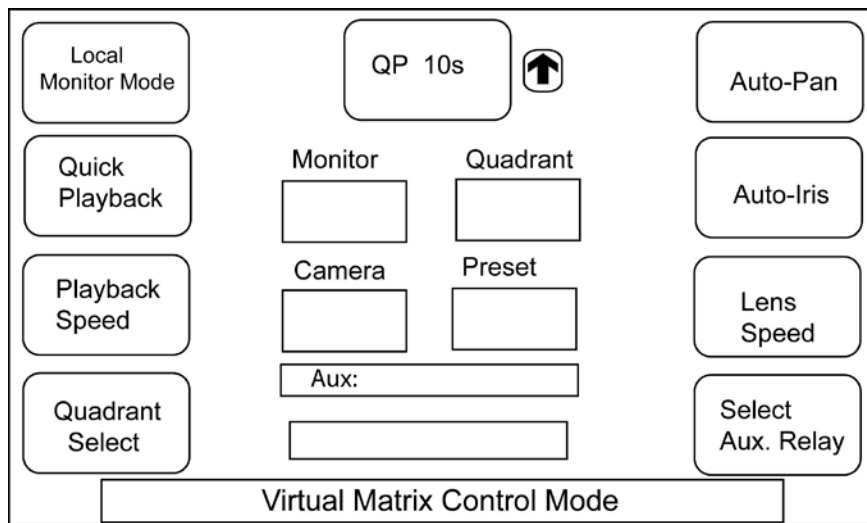
**Playback Speed Screen**

2. Pressing one of the speed factor softkeys sends that playback speed for the selected direction to the target monitor. This speed selection remains until changed by the user.

To activate presets:

3. Preset positions are recalled by entering the preset number from the numeric keypad and pressing the Preset key from the Special Function keys.
4. To command a receiver/dome to store a new preset position, move the receiver/dome to the desired position. Enter the preset number via the numeric keypad. Press the Shift button located in the Special

Function button group. An up pointing arrow appears immediately to the right of the red QP indicator on the LCD screen. Then press the Preset button. The preset number appears in the preset field of the Select Status area of the LCD and the up arrow disappears.



**Setting Presets in Virtual Matrix Mode**

Using the PTZ and other lens functions on the controller:

1. To move the pan-and-tilt device in a horizontal (pan) or vertical (tilt) motion, deflect the joystick in the direction desired; moving the joystick in a diagonal motion provides simultaneous pan and tilt.
2. To control zoom, twist the top of the joystick clockwise to zoom in; turning it in a counter-clockwise direction will zoom out.
3. Focus (near and far) and Iris (open and close) are controlled via push buttons located next to the joystick.
4. Use the Lens Speed softkey to cycle through the lens speeds.
5. To use auto-pan or auto-iris functions, press the appropriate softkey.

Macros must be named with a number in the VMDC if they are to be recalled by the System Controller in Virtual Matrix mode. The number can be from 1-999. To recall macros, select its number from the numeric keypad and press the Macro key.

Receiver/dome auxiliary relays are actioned by selecting the auxiliary relay number from the numeric keypad and pressing the Select Aux. Relay softkey on the LCD screen. Note that momentary aux functions stay active as long as the softkey button is pressed; latching relays remain active until the button is pressed again.

Virtual Matrix/ViconNet control buttons are provided to Record, Freeze, Play, and Stop. The Jog/Shuttle provides for Frame Advance and Frame Reverse as well as Fast Forward and Reverse.

1. Pressing the individual function key for record, freeze, play or stop commands the VMDC to perform those functions. The speed at which the playback runs is at the previously selected Playback Speed set from the Playback Speed menu.
2. The Jog/Shuttle center wheel provides for Frame Advance and Frame Reverse. Rotating the wheel clockwise commands the VMDC to advance frame by frame. Rotating counter clockwise reverses frame by frame. Twisting the outer ring of the Jog/Shuttle commands the VMDC to either fast forward or rewind, twisting clockwise to fast forward and counter-clockwise to rewind.

# Non-IP ViconNet Systems

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## Connection for a ViconNet System Using the V422-CONV

This section provides the detailed connection method for non-IP ViconNet/VMDC devices to a System Controller when using the RS-422 port only.

A System Controller can be directly connected to a ViconNet device, including a Kollector DVR/NVR, ViconNet Workstation, VMC or Viewer software. ViconNet version 5.X and higher are required for full System Controller functionality with camera to monitor selections; ViconNet devices with software versions older than 5.0 provide only PTZ functionality. A Vicon V422-CONV protocol converter is required for connection. See Figure for applications.

It is necessary to install a software driver to enable control. The minimum driver requirement is the Vicon VN-DRV, revision 924. All later revision drivers will also support PTZ control operation. The driver must be installed prior to hardware connection. Refer to Vicon manual XX113-58 or later for details on driver installation.

The Vicon V422-CONV RS-422 to RS-232 converter plugs directly into the COM port (DB-9 connector) and its terminal block wired directly to the controller's rear panel. ViconNet is setup to use the controller in Main Settings RS232/422/485 Controls. The COM port is configured in ViconNet Setup, selecting the available COM port for the PC and the "Internal Comport", which is joystick's (controller) address programmed in the controller. The internal comport must not conflict with any camera addresses. Baud rate is usually 9600 baud.

If it is necessary to use the converter in conjunction with a serial cable to the back of the unit, the RS-232 cable length should be limited to about 50 feet for a 9600 baud rate. In addition, care should be taken, in rack mount installations, where the converter is extended a few inches beyond the back of a rack. To avoid damage, try to tie wrap the converter to a nearby rail or other solid object. In addition, strain relief should be provided for the cable connected to its terminal block.

## Pre-Installation

Before connecting the controller, verify the following points:

- Review the corresponding installation manuals.
- Confirm that all necessary hardware is present (cable, converters, System Controller, etc.).
- Confirm that the Kollector, VN-NVR/WS or VMDC unit is ready for installation (ViconNet version 5.x or higher) and that the software driver is accessible for installation.
- Check the location of the controller and verify that there is sufficient space to conveniently operate the joystick while viewing video.
- Check that the installation hardware can be connected to a UPS with the other hardware in the event of a power outage or surge.

## Installation

1. With the Kollector, VN-NVR/WS or VMDC unit ready for controller installation, locate and install the controller in its permanent position.
2. Locate and install the V422-CONV converter into the back panel.
3. Make all cable connections between controller and back panel (COM ports) as shown in the Figures. Up to two keypads can be installed to each VMDC, connected to two different COM ports. Refer to Figure. If using the converter, verify that the correct polarity is maintained on the terminal block connections.
4. With power applied to all items, setup Kollector, VN-NVR/WS or VMDC with the necessary software drivers and test the capability of a local and remote camera dome.
5. Installation is complete.

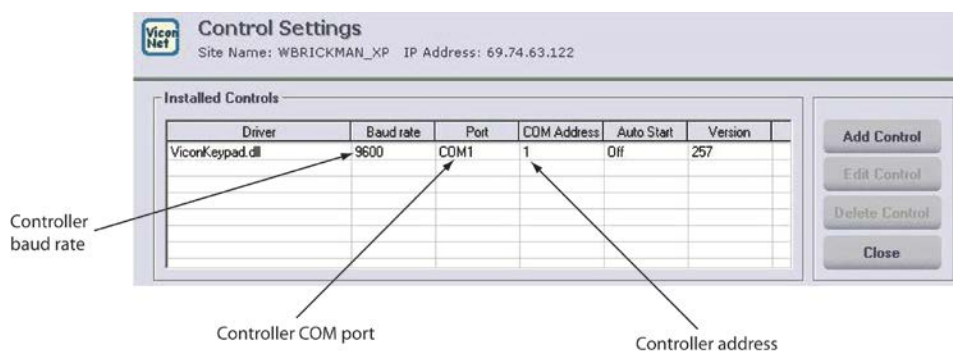
## ViconNet Setup

The Baud Rate and COM Address (9600 and 1 in screen example below) in ViconNet and the controller should match.

**Note:** COM address can be any address 1-64. When setting address, make sure it does not conflict with a camera PTZ address.

- For the 2nd generation Kollektor back panels: Under Port must select correct COM port (typically 1).
- For the 1st generation Kollektor back panels: Under Port must select correct COM port (typically 2).
- For Kollektor Force and Strike back panels: Under Port must select correct COM port (typically 1)
- For the VN-NVR back panel: Under Port must select correct COM port (typically 1).
- COM port selection may vary. Other PC workstations may use different COM ports.

**Note:** The V422-CONV RS-422 to RS-232 converter must be used and plugs into the open COM port on rear of the Kollektor/VN-NVR/VN-WS.



Sample ViconNet Setup Screen

## Setup

### Login and Log Out

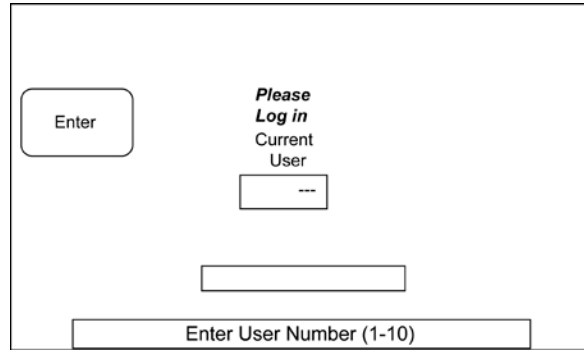
Upon power up, a Splash screen is displayed. Press Login button.



**Note:** For first time users, or if no users have been defined with a password, pressing Login takes the user directly to the screen of the last mode in use (Pilot mode is the default screen).

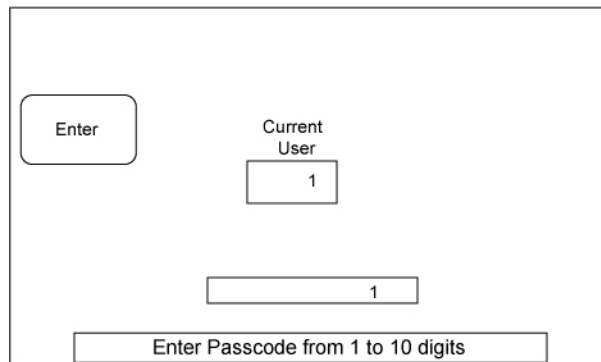
The System Controller provides for a User ID with a password be required upon login for added security, if desired. User ID and password are programmed from the Setup screen. If a user with a password has been programmed, the Log in screen displays.

1. Enter a User ID using the numeric keypad. The number displays in the box at the bottom of the screen. Press the Enter softkey; the number entered displays in the Current User box.



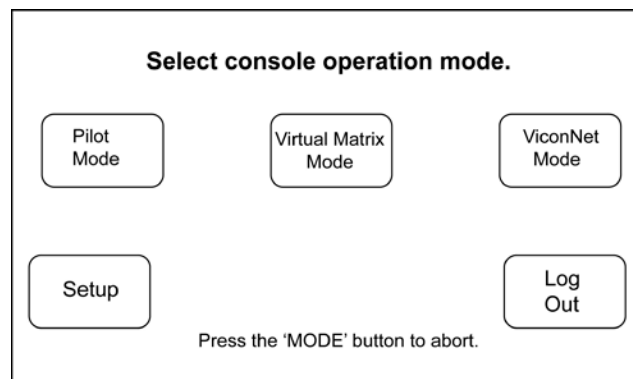
**Login Screen**

2. After a User ID is entered, the Password screen displays.
3. Enter the Password using the numeric keypad. Press the Enter softkey.



**Password Screen**

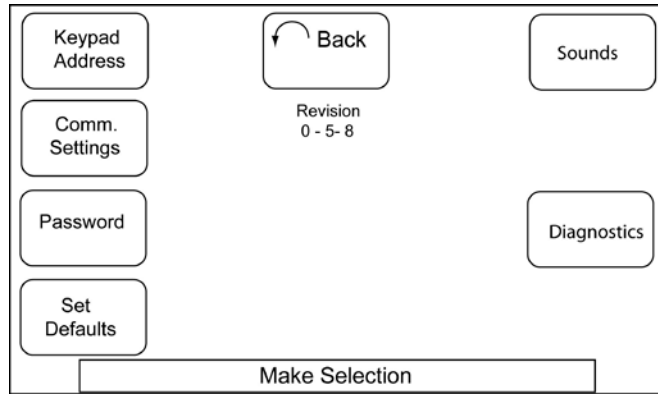
4. To Log out of the system, press the Mode button; from the Mode Select screen touch the Log Out softkey.



**Mode Select Screen**

# Setup Mode

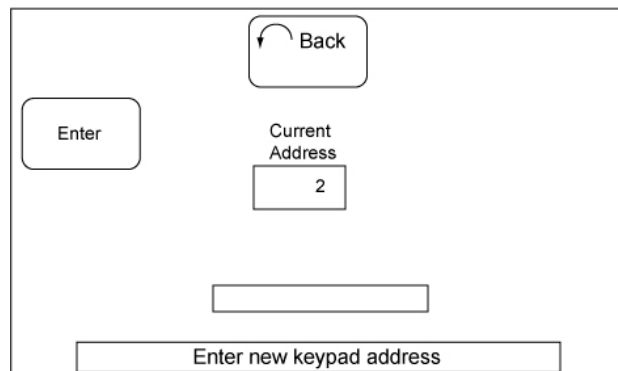
To configure the controller, the unit must be in Setup Mode. Press the Mode key to display the Mode Select screen. From the touch screen, select Setup softkey. The Setup screen displays. A Back softkey is provided on each screen to return to the previous screen.



**Setup Screen**

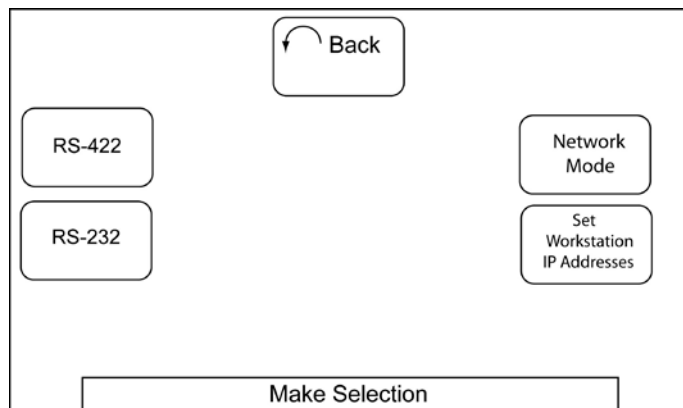
The Setup Mode provides softkeys to configure the Keypad Address, Communication Settings, Password, Default Settings, Sounds and Diagnostics.

1. Press the Keypad Address softkey to display the Address screen. The System Controller address can be any number between 0 and 99. Use the numeric keypad to enter an address; the number displays in the box at the bottom of the screen. Each controller must have a unique address. Press the Enter softkey; the address entered displays in the Current Address box.



**Keypad Address Screen**

2. Press the Comm. Settings softkey to access the Communication Settings. From there select RS-422 or RS-232.



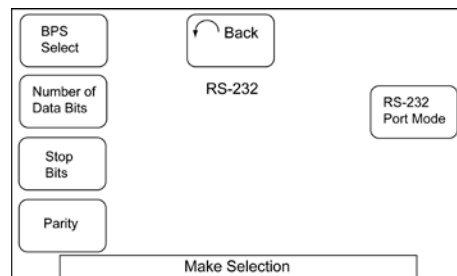
**Comm Setting Screen**

- From RS-422, select the BPS Select softkey and select a baud rate of 1200, 2400, 4800, 9600, 19.2k, 38.4k, 57.6k or 115k bps. The baud rate of the controller and the control system must be the same. *Note: Be sure to select RS-422 in the Network Mode screen.*

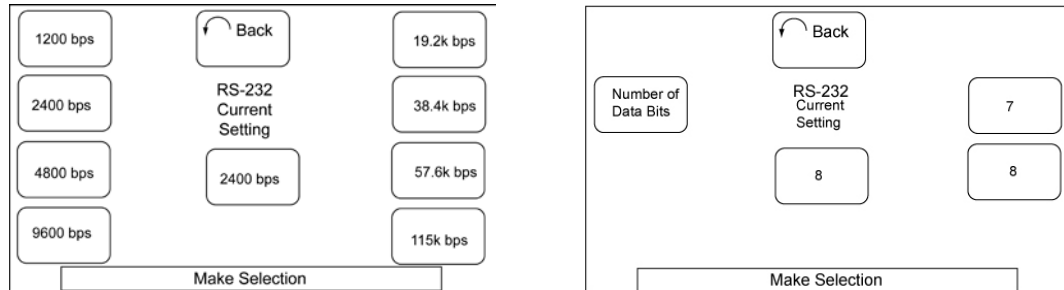


### RS-422 Screens

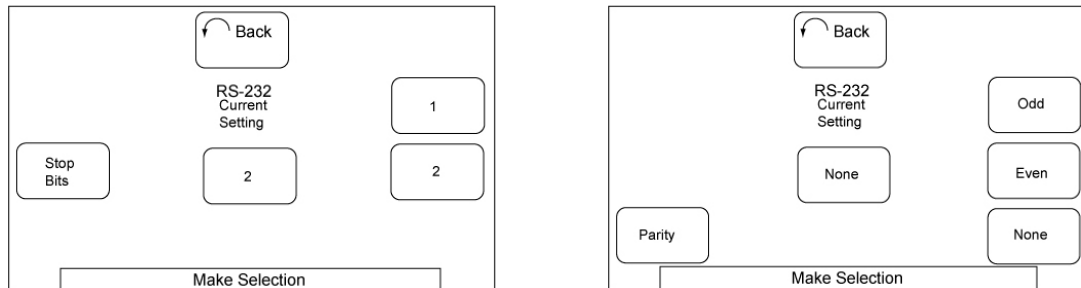
- From RS-232, select BPS Select softkey to set up the baud rate (1200, 2400, 4800, 9600, 19.2k, 38.4k, 57.6k or 115k bps); use the softkeys to display screens to setup the number of data bits (7 or 8), stop bits (1 or 2) and parity (odd, even or none). To allow the System Controller to be simultaneously connected to both a Pilot/NOVA and ViconNet/VMDC control system, the RS-232 Port Mode softkey is used; see explanation below.



### RS-232 Setup Screen

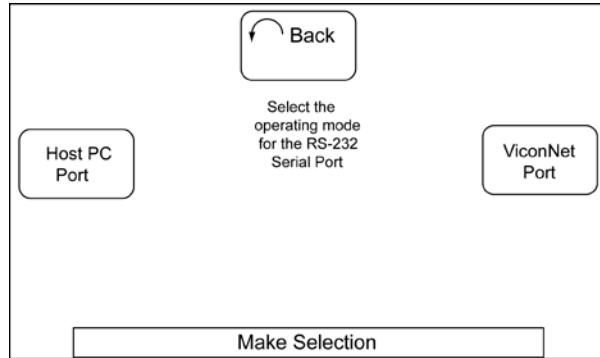


### RS-232 Baud Rate and Number of Data Bits



### RS-232 Stop Bits and Parity

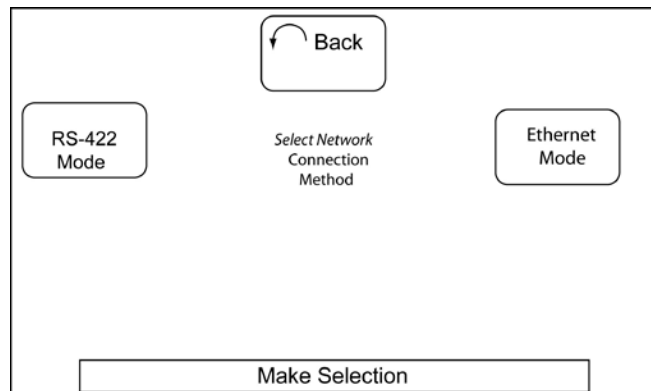
- Pressing the RS-232 Port Mode softkey displays the following screen. To allow the System Controller to be connected to a Pilot/NOVA system and a non-IP ViconNet/VMDC system at the same time, select the ViconNet Port softkey. (This type of functionality also requires a serial cable to connect the System Controller to the ViconNet/VMDC serial port. Refer to the previous Installation section of this manual.) The default mode is Host PC Port, which provides for Flash Download updates.



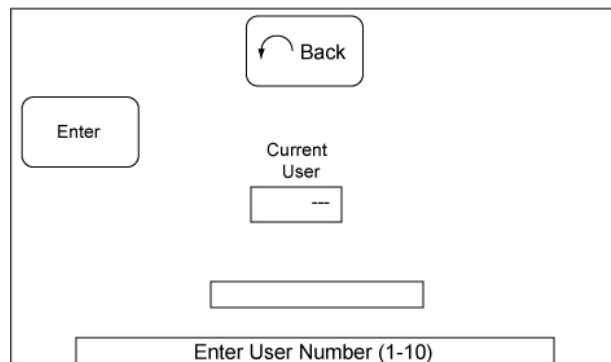
**RS-232 Port Mode**

**Note:** The System Controller can still be used for Flash download even when the RS-232 Port Mode is selected for ViconNet Port mode. The System Controller must be in the Login (Splash) screen and the port connected to the host PC. The port will operate with the current Comm Settings (bps, data bits, stop bits and parity); be sure these match the settings on the host PC before attempting Flash download. Refer to the Flash Upgrade section of this manual for details.

- From Network Mode, select RS-422 (serial communication); be sure to setup RS-422 as previously described.

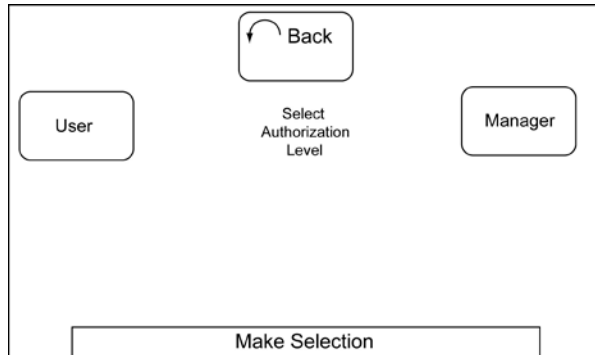


- From the Setup screen, touch the Password softkey to enter the User ID screen.

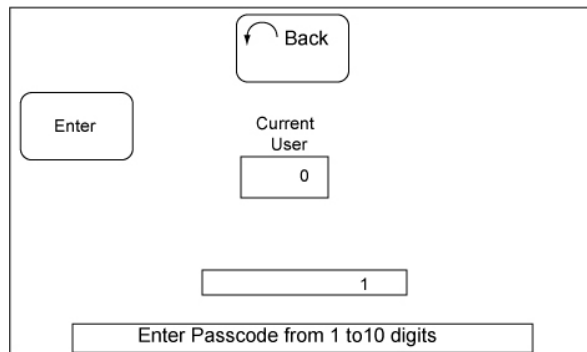


**User ID Screen**

8. From the numeric keypad, enter a user ID. The User ID can be any number 1-10. Touch the Enter softkey and the Current User box displays the user ID. There are two authorization levels for users of the controller. A manager level has all programming privileges; a user level can only operate the controller, including recalling presets and macros. The Authorization Level screen will display.
9. Select the desired Authorization Level for this user, Manager or User. The selected softkey will turn green and the screen will display the Set Password screen.



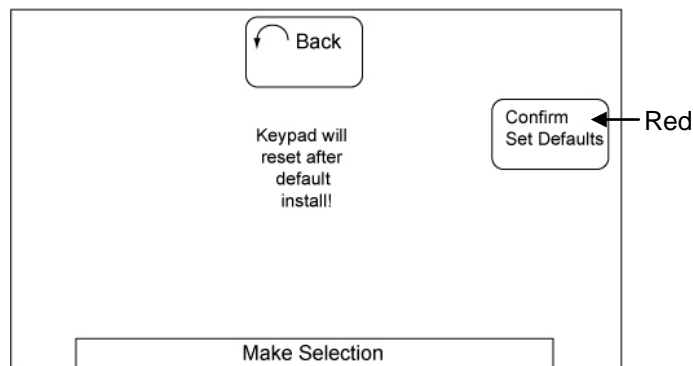
10. Using the numeric keypad, enter a password and press the Enter softkey. The password can be any number up to 10 digits. A re-enter for verification screen displays. Re-enter the password. The screen returns to the Setup screen. To clear an existing password, press Enter softkey without any digit input; press Enter again to verify.



**Set Password Screen**

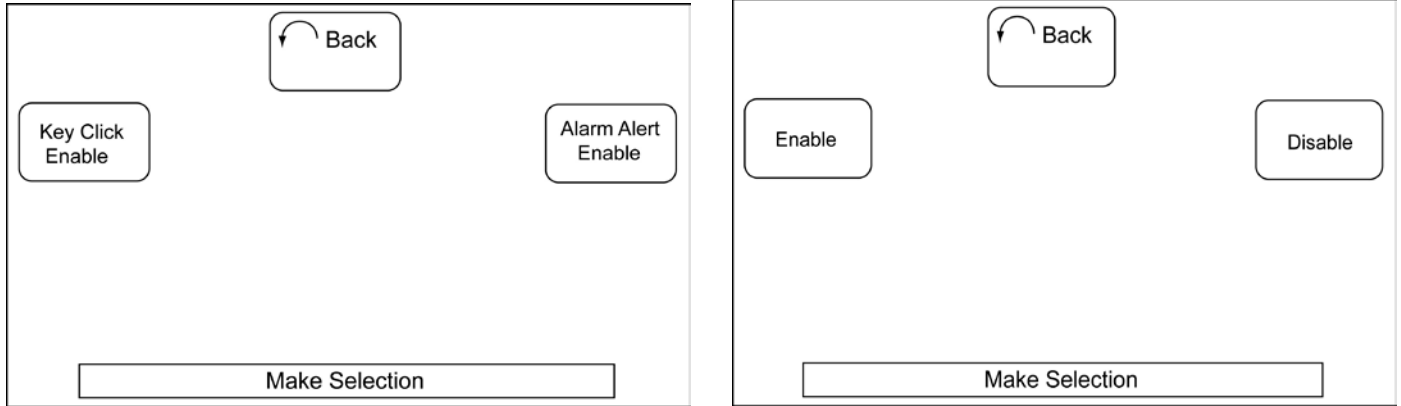
After the user ID and password is set up, that user must enter that ID and password before the System Controller can be used to control the system. It is important to keep a record of the password. If the password is misplaced or forgotten, call Vicon Technical Support at 1-800-34-VICON (1-800-348-4266).

11. Use the Set Defaults softkey on the Setup screen to display the screen to return the unit to factory defaults. The Confirm Set Defaults button is in red. Selecting this softkey deletes all user settings.



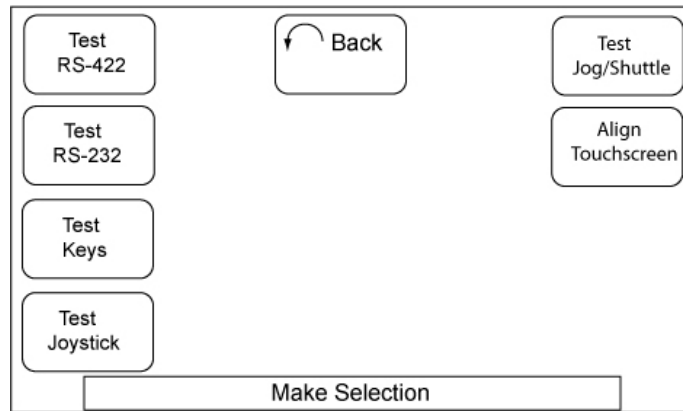
**Default Screen**

12. From the Setup screen, use the Sounds softkey to enable or disable sounds for touching a softkey and alarm notification (default setting is Enable). Press Key Click Enable to turn on/off the beep sound when a softkey is touched. An Enable/Disable screen displays. Press the Enable or Disable softkey; the active button turns green. To sound a buzzer when an alarm occurs, use the Alarm Alert Enable softkey and select Enable or Disable. The active button turns green. The Back button returns the screen to the main Setup.



**Sounds Screen**

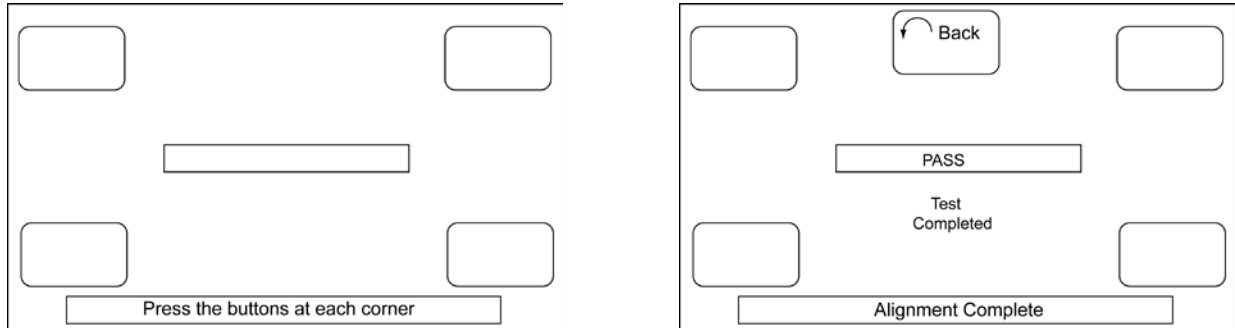
13. Use the Diagnostics softkey on the Setup screen to test the System Controller. The diagnostics can be run to test RS-422, RS-232, the function keys, the joystick, the Jog/Shuttle wheel and to align the touch screen.



**Diagnostics Screen**

When Test Keys is selected, press the key on the controller to be checked; the name of the key flashes in the box. If the joystick is being tested, the user moves the joystick while testing; the position is indicated on the screen. The joystick auto-calibrates on each power up. Move the Jog/Shuttle wheel and the function displays in the box.

Align Touchscreen calibrates the sensitivity and accuracy of the soft keys. After it is selected, touch the button in each corner of the screen; it will turn green. A testing progress bar displays as the test is in progress; after the test is completed, Pass or Fail will display. The Back button at the top of the screen will not display until after all four buttons have been pressed and passed. The user can then return to the Setup screen using the Back button.



### Align Touchscreen Screens

The ViconNet device can be connected as IP (Ethernet) or non-IP (RS-422). Once the device has been selected, the controller operates the same way in either mode. Use the operation instructions for ViconNet mode in the previous section.

# Pilot Systems

## Setup

### Login and Log Out

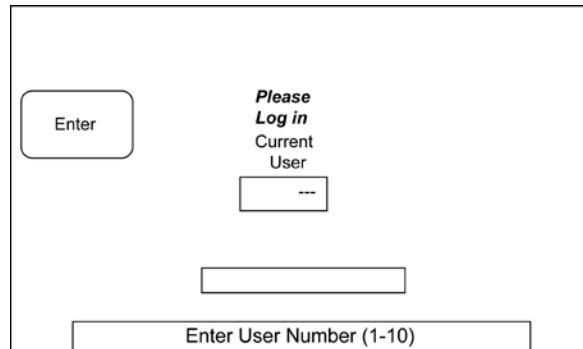
Upon power up, a Splash screen is displayed. Press Login button.



**Note:** For first time users, or if no users have been defined with a password, pressing Login takes the user directly to the screen of the last mode in use (Pilot mode is the default screen).

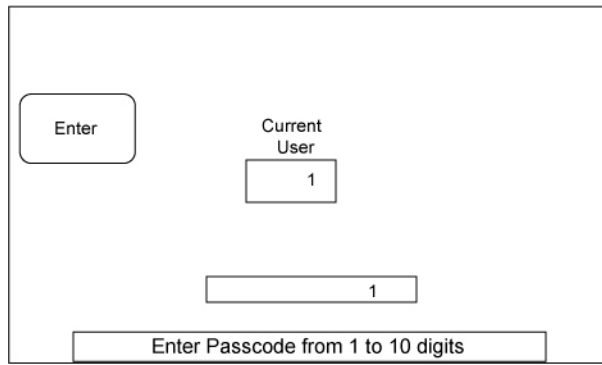
The System Controller provides for a User ID with a password be required upon login for added security, if desired. User ID and password are programmed from the Setup screen. If a user with a password has been programmed, the Log in screen displays.

1. Enter a User ID using the numeric keypad. The number displays in the box at the bottom of the screen. Press the Enter softkey; the number entered displays in the Current User box.



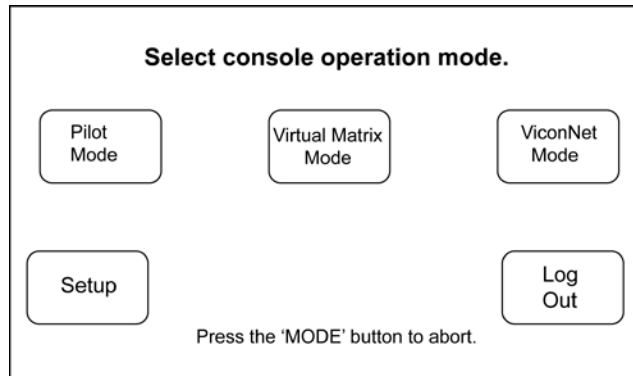
**Login Screen**

2. After a User ID is entered, the Password screen displays.
3. Enter the Password using the numeric keypad. Press the Enter softkey.



**Password Screen**

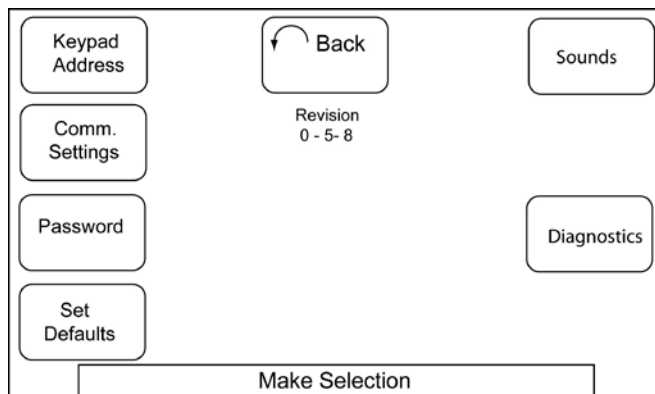
4. To Log out of the system, press the Mode button; from the Mode Select screen touch the Log Out softkey.



**Mode Select Screen**

## Setup Mode

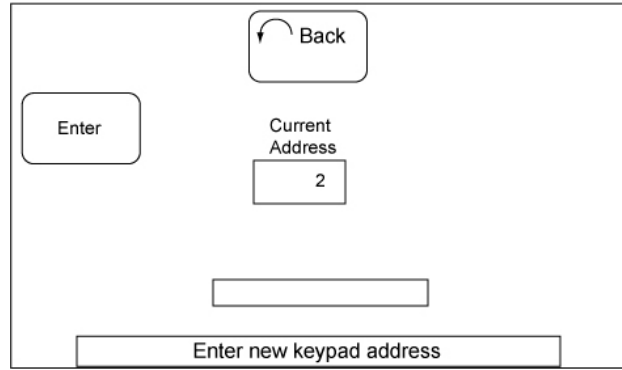
To configure the controller, the unit must be in Setup Mode. Press the Mode key to display the Mode Select screen. From the touch screen, select Setup softkey. The Setup screen displays. A Back softkey is provided on each screen to return to the previous screen.



**Setup Screen**

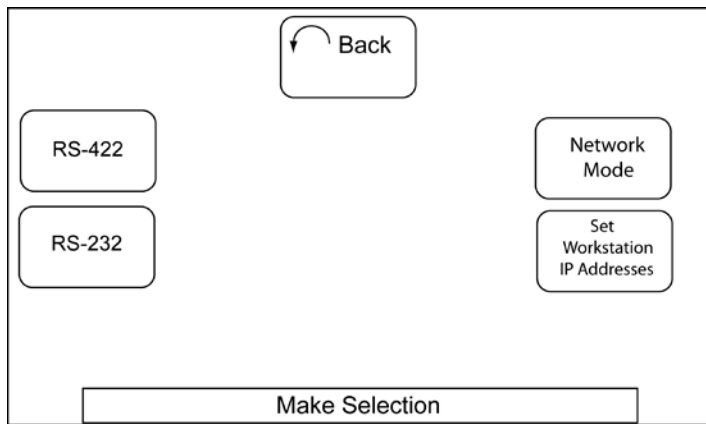
The Setup Mode provides softkeys to configure the Keypad Address, Communication Settings, Password, Default Settings, Sounds and Diagnostics.

1. Press the Keypad Address softkey to display the Address screen. The System Controller address can be any number between 0 and 99. Use the numeric keypad to enter an address; the number displays in the box at the bottom of the screen. Each controller must have a unique address. Press the Enter softkey; the address entered displays in the Current Address box.



**Keypad Address Screen**

- Press the Comm. Settings softkey to access the Communication Settings. From there select RS-422, or RS-232.



**Comm Setting Screen**

- From RS-422, select the BPS Select softkey and select a baud rate of 1200, 2400, 4800, 9600, 19.2k, 38.4k, 57.6k or 115k bps. The baud rate of the controller and the control system must be the same. *Note: Be sure to select RS-422 in the Network Mode screen.*

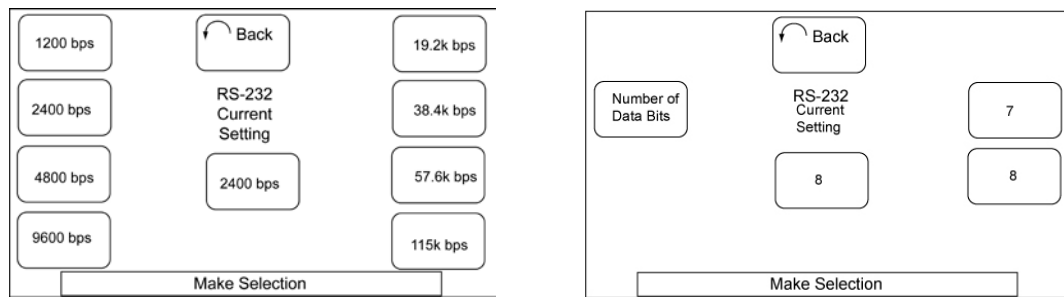


**RS-422 Screens**

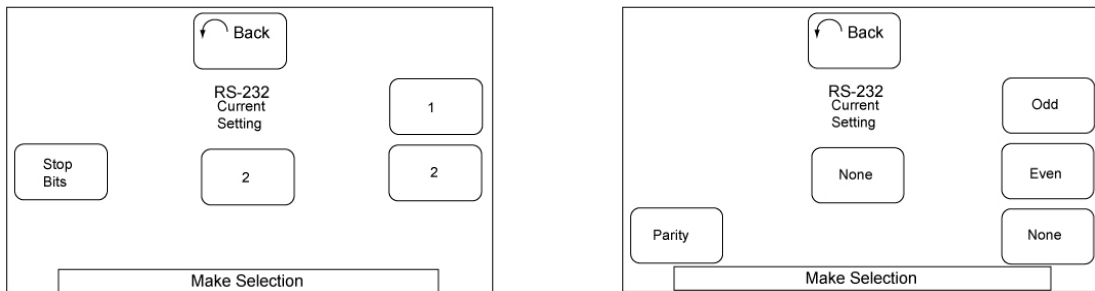
- From RS-232, select BPS Select softkey to set up the baud rate (1200, 2400, 4800, 9600, 19.2k, 38.4k, 57.6k or 115k bps); use the softkeys to display screens to setup the number of data bits (7 or 8), stop bits (1 or 2) and parity (odd, even or none). To allow the System Controller to be simultaneously connected to both a Pilot/NOVA and ViconNet/VMDC control system, the RS-232 Port Mode softkey is used; see explanation below.



**RS-232 Setup Screen**

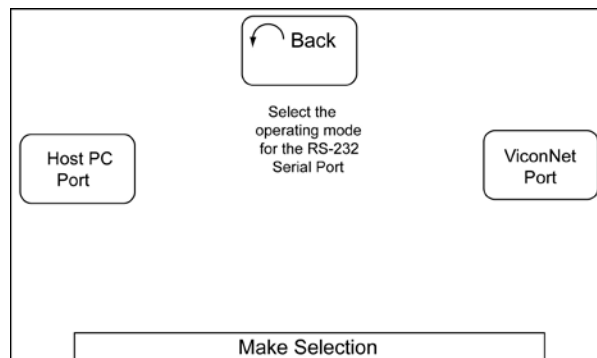


**RS-232 Baud Rate and Number of Data Bits**



**RS-232 Stop Bits and Parity**

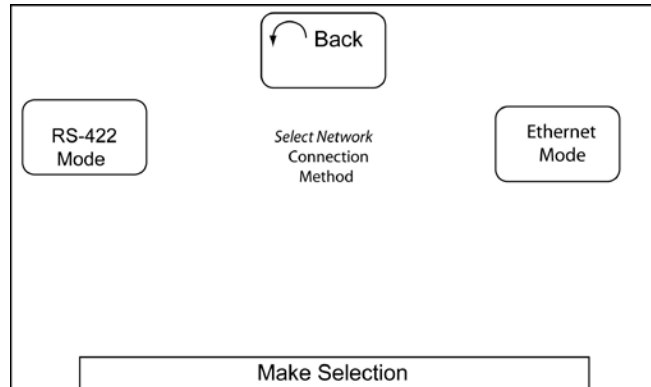
- Pressing the RS-232 Port Mode softkey displays the following screen. To allow the System Controller to be connected to a Pilot/NOVA system and a non-IP ViconNet/VMDC system at the same time, select the ViconNet Port softkey. (This type of functionality also requires a serial cable to connect the System Controller to the ViconNet/VMDC serial port. Refer to the previous Installation section of this manual.) The default mode is Host PC Port, which provides for Flash Download updates.



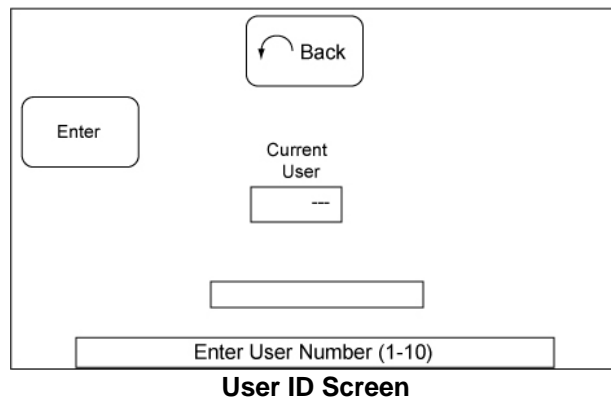
**RS-232 Port Mode**

**Note:** The System Controller can still be used for Flash download even when the RS-232 Port Mode is selected for ViconNet Port mode. The System Controller must be in the Login (Splash) screen and the port connected to the host PC. The port will operate with the current Comm Settings (bps, data bits, stop bits and parity); be sure these match the settings on the host PC before attempting Flash download. Refer to the Flash Upgrade section of this manual for details.

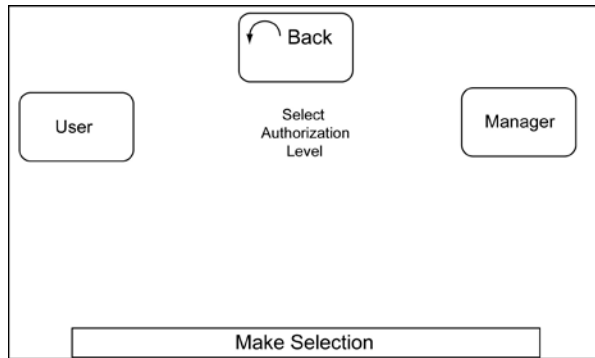
- From Network Mode, select the connection method, either RS-422 (serial communication). If RS-422 is selected, be sure to setup RS-422 as previously described.



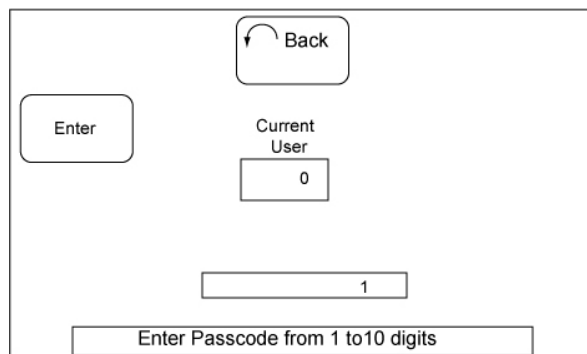
- From the Setup screen, touch the Password softkey to enter the User ID screen.



- From the numeric keypad, enter a user ID. The User ID can be any number 1-10. Touch the Enter softkey and the Current User box displays the user ID. There are two authorization levels for users of the controller. A manager level has all programming privileges; a user level can only operate the controller, including recalling presets and macros. The Authorization Level screen will display.
- Select the desired Authorization Level for this user, Manager or User. The selected softkey will turn green and the screen will display the Set Password screen.



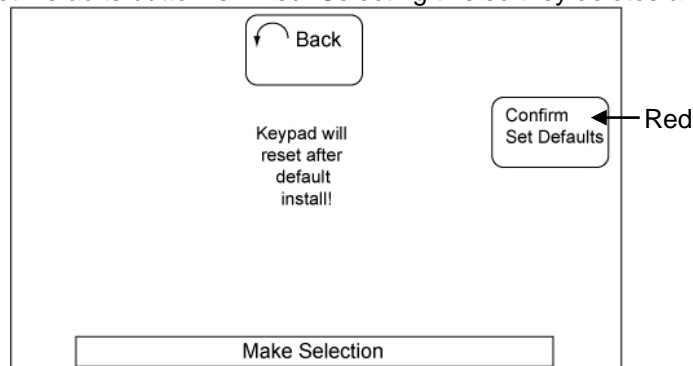
- Using the numeric keypad, enter a password and press the Enter softkey. The password can be any number up to 10 digits. A re-enter for verification screen displays. Re-enter the password. The screen returns to the Setup screen. To clear an existing password, press Enter softkey without any digit input; press Enter again to verify.



#### Set Password Screen

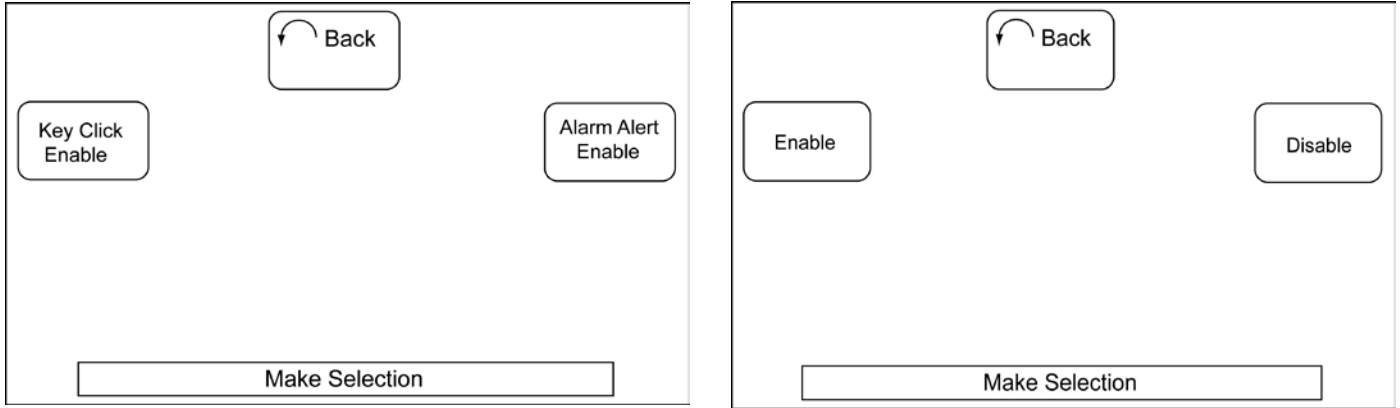
After the user ID and password is set up, that user must enter that ID and password before the System Controller can be used to control the system. It is important to keep a record of the password. If the password is misplaced or forgotten, call Vicon Technical Support at 1-800-34-VICON (1-800-348-4266).

- Use the Set Defaults softkey on the Setup screen to display the screen to return the unit to factory defaults. The Confirm Set Defaults button is in red. Selecting this softkey deletes all user settings.



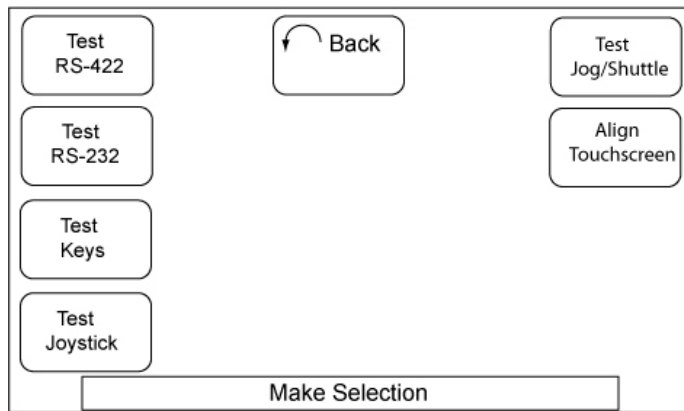
#### Default Screen

- From the Setup screen, use the Sounds softkey to enable or disable sounds for touching a softkey and alarm notification (default setting is Enable). Press Key Click Enable to turn on/off the beep sound when a softkey is touched. An Enable/Disable screen displays. Press the Enable or Disable softkey; the active button turns green. To sound a buzzer when an alarm occurs, use the Alarm Alert Enable softkey and select Enable or Disable. The active button turns green. The Back button returns the screen to the main Setup.



**Sounds Screen**

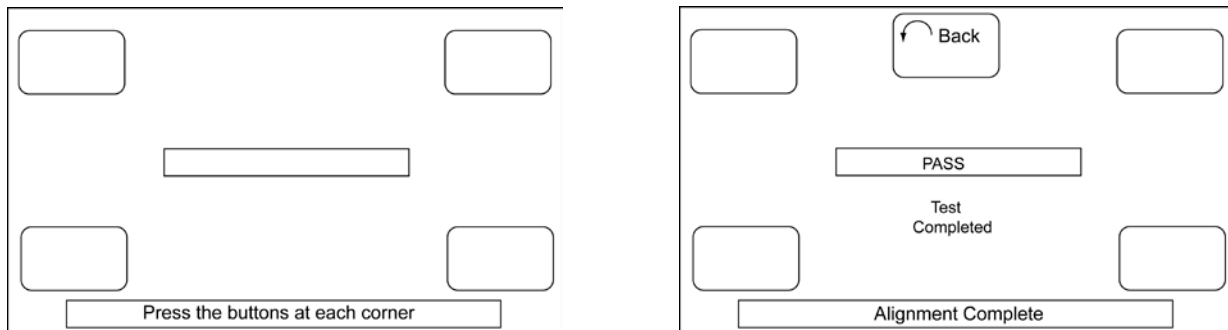
13. Use the Diagnostics softkey on the Setup screen to test the System Controller. The diagnostics can be run to test RS-422, RS-232, the function keys, the joystick, the Jog/Shuttle wheel and to align the touch screen.



**Diagnostics Screen**

When Test Keys is selected, press the key on the controller to be checked; the name of the key flashes in the box. If the joystick is being tested, the user moves the joystick while testing; the position is indicated on the screen. The joystick auto-calibrates on each power up. Move the Jog/Shuttle wheel and the function displays in the box.

Align Touchscreen calibrates the sensitivity and accuracy of the soft keys. After it is selected, touch the button in each corner of the screen; it will turn green. A testing progress bar displays as the test is in progress; after the test is completed, Pass or Fail will display. The Back button at the top of the screen will not display until after all four buttons have been pressed and passed. The user can then return to the Setup screen using the Back button.



**Align Touchscreen Screens**

---

# Operation

## Login and Log Out

Upon power up, the Splash screen displays.



Press the Login button. If a User ID and password have been programmed for added security, the Login screen displays. If no users with passwords have been entered, the screen goes directly to the screen of last mode of operation. Use the Mode key to go to a different screen.

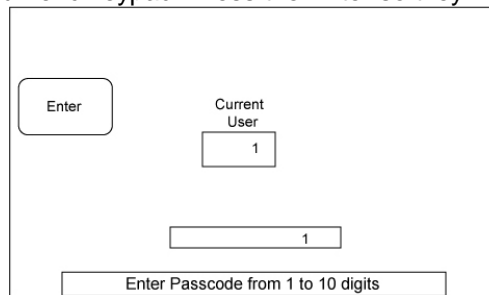
**Note:** If the touchscreen senses that it needs to be calibrated upon Login, it will force the alignment by going to the Align Touchscreen screen in Diagnostics. Refer to the previous section on Diagnostics, Align Touchscreen. After the calibration is complete, the LCD displays the User Login screen.

1. Enter a valid User ID using the numeric keypad. The number displays in the box at the bottom of the screen. Press the Enter softkey; the number entered displays in the Current User box.



**Login Screen**

2. After a User ID is entered, the Password screen displays.
3. Enter a Password using the numeric keypad. Press the Enter softkey.



**Password Screen**

Upon Login, a notification of "Searching for Host. Please Standby" may appear in the status box at the bottom of the LCD screen. It is recommended to wait until this message clears before beginning operation or setup. This same message appears if communication is lost from the control system.

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## Controlling Screen Brightness and Contrast

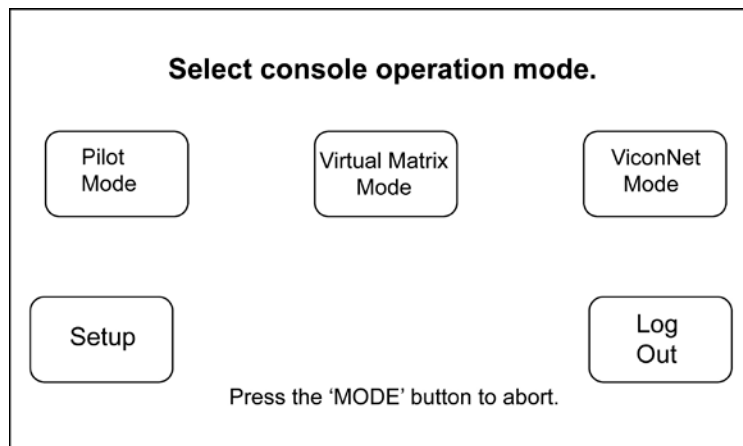
The brightness and contrast of the LCD screen can be modified. To adjust the screen contrast, press the Shift key. Turn the Zoom control at the top of the joystick until the contrast level of the screen is desired. Press Shift key again to end this control.

---

## Mode Selection

The default mode of operation of the System Controller is Pilot mode. Press the Mode button in the Special Function button group. Refer to Figure 1. When the Mode button is pressed, the LCD displays the Mode Select screen. Select Pilot Mode. Upon power up, after login, the System Controller displays the screen of the last mode it was in.

Pressing the Mode button prior to making a selection returns the controller to the operational mode active prior to entering the Mode Select menu. Once an operating mode is selected, the System Controller remains in that mode until a different mode is selected from the Mode Select menu, even upon reset.

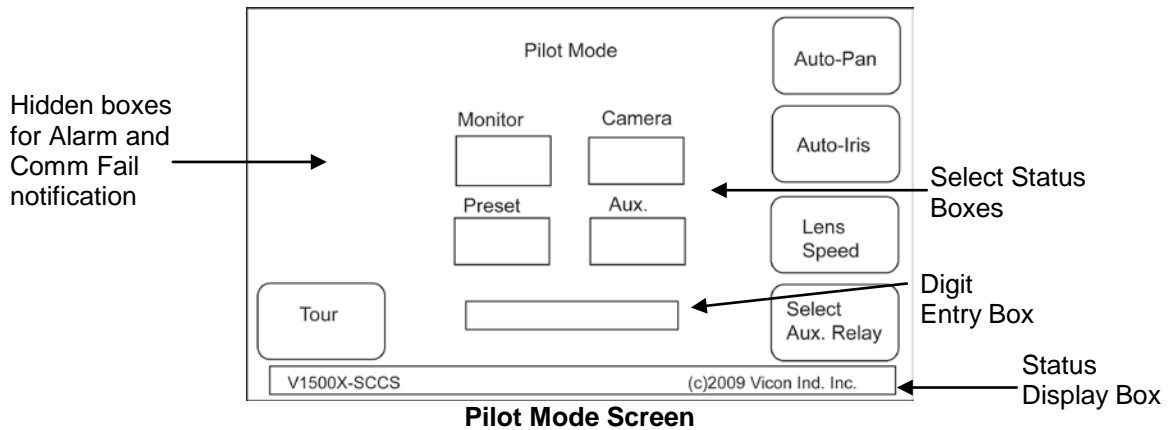


**Mode Select Screen**

Pilot mode provides for standard Vicon matrix controls for video switching and PTZ control. Pilot mode makes use of the numeric keypad, the PTZ controls, four of the special function buttons (Macro, Shift, Preset and Alarm), and a few touch sensitive keys on the LCD screen.

The primary display is the touch sensitive color LCD screen. This screen displays camera, monitor, aux. and preset information in the Select Status boxes. Also provided on this screen are five touch buttons for tour, auto-pan and auto-iris activation, lens speed and Auxiliary Relay selection. Macros are stored using the Shift and Macro keys. Status messages are displayed in a box on the lower part of the screen.

A standard numeric keypad with back/clear, camera select and monitor select keys is provided. These keys are used for camera, monitor, preset, tour, and salvo selection. As camera and monitor selections are made, the Select Status boxes update to reflect the change. Numbers entered at the numeric keypad are displayed in the rectangular digit entry box in the center of the display. As tour, auto-pan, auto-iris, and auxiliary relay states change, their respective icons change color to reflect their active state: Blue = inactive/off; Green = active/on (requires duplex communications).



A monitor must be selected to the controller prior to any camera selection or PTZ actions.

1. Enter the monitor number via the numeric keypad; the number displays in the digit entry box. Then press the Monitor key.
2. Enter the camera number via the numeric keypad; the number displays in the digit entry box. Then press the Camera key.
3. The Select Status boxes on the LCD screen update with the number of the camera currently selected to the target monitor, the target monitor number, the preset, (if any), number of the camera's position, and current auto-pan, auto-iris, and latched auxiliary relay status. (The auxiliary relay, auto-pan and auto-iris status is displayed only if the receiver/dome connected is reporting status information, e.g., duplex communications.)

**Note:** The Camera key has a function that allows a quick callback between the last two cameras selected. When the operator presses the Camera key without selecting any numbers from the keypad, the camera selection reverts to the previous camera selected. If pressed again, the camera returns to the original selection. In this way, the operator can toggle between the last two cameras selected, until another camera is selected.

To activate presets, tours and salvos:

1. Receiver/dome preset positions are recalled by entering the preset number from the numeric keypad and pressing the Preset key from the Special Function keys.
2. To command a receiver/dome to store a new preset position, move the receiver/dome to the desired position. Enter the preset number via the numeric keypad. Press the Shift button located in the Special Function button group. An up pointing arrow appears immediately to the right of the Pilot Mode title on the LCD screen. Then press the Preset button. The preset number appears in the preset field of the Select Status area of the LCD and the up arrow disappears.
3. Tours are activated by entering the tour number via the numeric keypad and then pressing the Tour softkey on the LCD screen. If the tour number is valid and a tour has been previously programmed for that number, the Tour key turns green and the tour begins to run on the target monitor. As the tour updates, the camera number is presented in the Select Status box on the LCD screen. A message indicating that the monitor is in tour is presented in the Status Display box at the bottom of the LCD screen. Pressing the Tour softkey while the assigned target monitor is in tour bumps the tour ahead one step. To stop a tour before it is completed, use the Back/Clear button or manually select a camera.
4. Camera Salvos are selected by entering their call-up number and pressing the Camera select button. Note: Salvos and dial-up numbers are programmed at the head-end CPU. Refer to the Pilot/NOVA system documentation as needed.

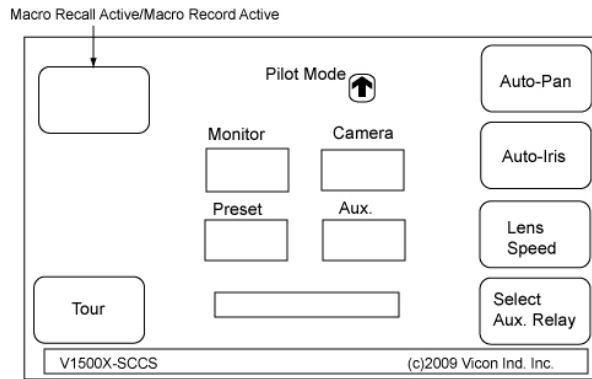
Using the PTZ and other lens functions on the controller:

5. To move the pan-and-tilt device in a horizontal (pan) or vertical (tilt) motion, deflect the joystick in the direction desired; moving the joystick in a diagonal motion provides simultaneous pan and tilt.

6. To control zoom, twist the top of the joystick clockwise to zoom in; turning it in a counter-clockwise direction will zoom out.
7. Focus (near and far) and Iris (open and close) are controlled via push buttons located next to the joystick.
8. Use the Lens Speed softkey to cycle through the lens speeds.
9. To use auto-pan or auto-iris functions, press the appropriate softkey. To stop the auto-pan or auto-iris function, select the softkey or use the joystick to manually stop auto-pan function.

The System Controller provides for 8 macros of up to 32 commands. To store (record) and recall macros:

1. To record a macro, enter a macro number from the numerical keypad. Press the Shift key and then the Macro key from the Special Function keys. An up arrow appears to the right of Pilot Mode and an indication that a macro is being recorded (yellow) appears on the screen to the left of Pilot Mode.
2. Configure the macro. When configuration is complete, press the Macro key to clear the indication from the screen.
3. To recall a macro, select its number from the numeric keypad and press the Macro key. An indication that macro recall is active (yellow) appears on the screen for as long as the macro is running.



**Pilot Mode Screen with Macro**

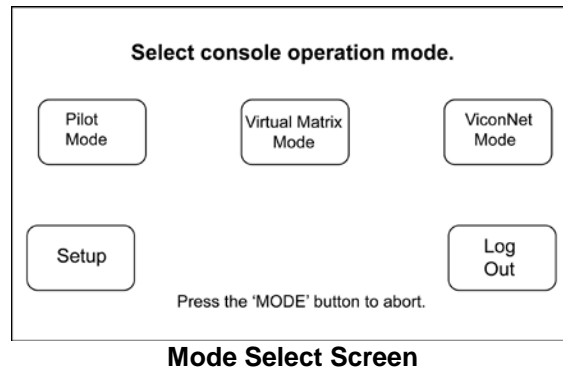
Receiver/dome auxiliary relays are actioned by selecting the auxiliary relay number from the numeric keypad and pressing the Select Aux. Relay softkey on the LCD screen. Note that momentary aux functions stay active as long as the softkey button is pressed; latching relays remain active until the button is pressed again. The receiver/dome must be configured for duplex communications for any status to be reported and displayed at the controller.

If it is required to send the switcher/control system a crosspoint reset command, enter any number 9900 and above from the numeric keypad and then press the Select Aux. Relay softkey on the LCD screen.

Alarms, errors, and general monitor status messages are displayed in the lower Status Display box. Errors and alarms are displayed with a red background to make them stand out from other non-critical system messages. When an Alarm or COM Fail occurs, a red indication displays on the left side of the screen; if activated, an audible alert will sound. Press the Alarm key to clear the alarm indication; to clear a COM Fail, press Shift and the Alarm button.

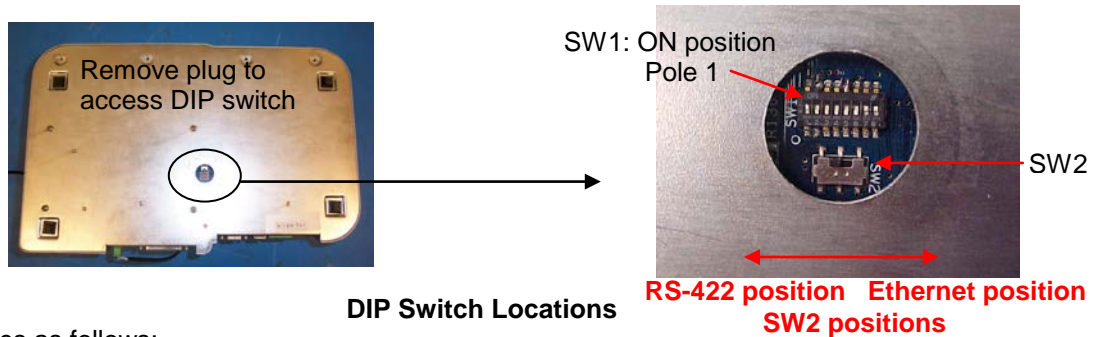
## Log Out

To Log Out of the system, press the Mode button. On the Mode Select screen, touch the Log Out softkey.



## Setting the DIP Switch

There are two internal DIP switches, SW1 and SW2, which are used to enable certain functionality on the System Controller. The DIP switches are factory set to the default positions and should not have to be touched. If, however, the switches have to be accessed, remove the plug covering on the bottom of the chassis of the System Controller. DIP Switch SW1 is an 8-position switch that selects RS-232/RS-485 functionality, as well as the alarm buzzer (On/Off) and Flash upgrading; SW2 is a 2-position switch that selects RS-422/Ethernet XPort.



Set the switches as follows:

### DIP Switch SW1

| Pole | Function   | Position                           |
|------|--|------------------------------------|
| 1    | Buzzer   | ON=Buzzer On; OFF=Buzzer Off       |
| 2    | Flash (for Flash Programming)                    | ON=Disabled; OFF=Enabled           |
| 3    | RS-232/RS-485 mode                               | ON=RS-485 TERM+; OFF=RS-232        |
| 4    | RS-232/RS-485 mode                               | ON=RS-485 121 ohm load; OFF=RS-232 |
| 5    | RS-232/RS-485 mode                               | ON=RS-485 TERM-; OFF=RS-232        |
| 6    | RS-232/RS-485 mode                               | ON=RS-485; OFF=RS-232              |
| 7    | RS-232/RS-485 mode                               | ON=RS-485; OFF=RS-232              |
| 8    | RS-232/RS-485 mode (for 9-pin D-shell connector) | ON=RS-232; OFF=RS-485              |

Default settings for SW1 are poles 1, 7 and 8 ON (Buzzer On, Enables PC's CTS (Clear to Send) input, and RS-232 mode) and 2-6 OFF (Flash Enabled and RS-232 mode).

### DIP Switch SW2

Slide the switch to the left to enable the RS-422 6-pin connector on the rear panel. Sliding the switch to the right enables the RJ-45 Ethernet connector (used to set the XPort).

## Flash Upgrade Software

If it is necessary to upgrade the software (application and graphics), contact Vicon Technical Support at 800-34-VICON (1-800-348-4266) to get the latest software. Vicon's Technical Support will send you a zip file with both the latest application (SREC) and graphics (BIN) files. Download these files to your PC. Make sure DIP switch SW1 is set to enable Flash Upgrade, pole 2 set to OFF.

1. Connect a serial cable from the 9-pin RS-232 port on the V1500X-SCCS-1 to the Comm port on the PC. Refer to Rear Panel Connections Figure for pin location. The table below provides the pin out information. Be sure to connect the ground (GND).

**RS-232 DB-9 Connector Pin Outs**

| Keypad Pin Number | Keypad Signal Name | Typical PC Pin Number | Typical PC Signal Name |
|-------------------|--------------------|-----------------------|------------------------|
| 1                 | Not Used           | 1                     | Not Used               |
| 2                 | TXD                | 2                     | RXD                    |
| 3                 | RXD                | 3                     | TXD                    |
| 4                 | Not Used           | 4                     | Not Used               |
| 5                 | GND                | 5                     | GND                    |
| 6                 | Not Used           | 6                     | Not Used               |
| 7                 | Not Used           | 7                     | RTS                    |
| 8                 | Not Used           | 8                     | CTS                    |
| 9                 | Not Used           | 9                     | Not Used               |

**Note:** Be sure that the RS-232 settings on the PC match those on the System Controller. In some cases, pins 7 and 8 on the PC side may have to be jumpered together.

2. Go to the Serial Communications program on the PC. In this example HyperTerminal, a standard Windows® program, is used; select Start, Programs, Accessories, Communications, HyperTerminal. Create a "New Connection."
3. In the "Connect To" dialog box, use the "Connect using" drop down to select the desired Com port (Com 1, Com 2, etc.); on most notebook computers, the single DB-9 connector is Com 1.
4. In the Com Properties dialog box, set Bits Per Second to the preferred baud rate, Data Bits to 8, Parity to None, Stop Bits to 2 and Flow Control to None. Click Apply and OK. (Note: If the keypad has factory defaults, no changes are required; refer to Factory Defaults.)
5. From the task bar, select File, Properties and Settings tab. Set Emulation to Auto Detect. Click ASCII Setup. Check "Echo typed characters locally" under ASCII Sending; under ASCII Receiving, check "Append line feeds to incoming line ends" and "Wrap lines that exceed terminal width." Click OK.
6. From the task bar, select File and Exit.
7. Determine the keypad address (Mode-Setup-Keypad Address).
8. In HyperTerminal, go to File, Open to open the connection previously created. Connect to the keypad by selecting the Control key with A, the two-digit keypad address and a lower case e: <Ctrl-A>02e (default 02 address in this example). This should return a question mark (?); this lets the user know there is a good connection to the keypad.
9. Download the Application file first. Select <Ctrl-A> plus the 2-digit keypad address and then "da". Be sure to press Enter after the download commands. Go to Transfer and then SendFile from the drop down list. Under Protocol, select XModem. Select the appropriate "Srec" file (from Browse) and click Send. The download will begin and a message will appear on the LCD. *Note that the controller is locked into the transfer and is otherwise disabled.*



10. This download can take a while (up to 5 minutes). After the download is complete, the screen goes blank and, if enabled, the buzzer sounds.
11. Cycle power (power off then power on the System Controller) to reset the unit (it will beep if enabled). Note that the LCD screen may have no graphics. Repeat this process, substituting "dg" to download the graphics file; the graphic file is "BIN" type. This download should not take as long.

The System Controller is now upgraded and ready to use.

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## Factory Defaults

After login, the System Controller can be setup. If the user wants to leave all factory defaults, the unit is fully operational. The controller is delivered with factory defaults set at:

- Mode – Pilot
- Password – User 1; no password
- Communications Setting – RS-422/Baud Rate – 9600 bps;  
RS-232 Number of Data Bits – 8, Stop Bits – 2, Parity – None, Baud Rate - 57.6K bps;  
RS-232 Port Mode – Host PC Mode
- System Controller Address – 2
- DIP Switch SW1: Poles 1, 7 and 8 ON [Buzzer On, Enables PC's CTS (Clear to Send) input and RS-232 mode] and 2-6 OFF (Flash Enabled for programming and RS-232 mode)
- DIP Switch SW2: RS-422 position

# Maintenance

The V1500X-SCCS-1 System Controller requires no scheduled maintenance other than an occasional cleaning to remove fingerprints from the screen.

# Shipping Instructions

Use the following procedure when returning a unit to the factory:

1. Call or write Vicon for a Return Authorization (R.A.) at one of the locations listed below. Record the name of the Vicon employee who issued the R.A.

Vicon Industries Inc.  
89 Arkay Drive  
Hauppauge, NY 11788  
Phone: 631-952-2288; Toll-Free: 1-800-645-9116; Fax: 631-951-2288

For service or returns from countries in Europe, contact:

Vicon Industries Ltd  
Brunel Way  
Fareham, PO15 5TX  
United Kingdom  
Phone: 44/(0)1489/566300; Fax: 44/(0)1489/566322

2. Attach a sheet of paper to the unit with the following information:
  - a. Name and address of the company returning the unit
  - b. Name of the Vicon employee who issued the R.A.
  - c. R. A. number
  - d. Brief description of the installation
  - e. Complete description of the problem and circumstances under which it occurs
  - f. Unit's original date of purchase, if still under warranty
3. Pack the unit carefully. Use the original shipping carton or its equivalent for maximum protection.
4. Mark the R.A. number on the outside of the carton on the shipping label.

# Reference

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## Software Version Number and Date

If you are requested by Vicon Technical Support to provide the software version number, you can find this information in the Setup menu.

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## Cable Recommendations

### RS-422 Cabling

Vicon recommends the cables shown in the table below for RS-422 connections. As shown in the table, the appropriate cable depends upon the distance between the connector and the RS-422 device.

**Recommended RS-422 Cable Types**

| Cable Type  | Maximum Distance ft (m) |
|-------------|-------------------------|
| Belden 9406 | 5000 (1500)             |
| Belden 9402 | 5000 (1500)             |
| Belden 8723 | 8000 (2400)             |
| Belden 8162 | 15,000 (4600)           |
| Belden 9729 | 15,000 (4600)           |
| Belden 9182 | 25,000 (7600)           |

### RS-232 Cabling

The System Controller can be connected to a control system using the RS-232 connection. The System Controller may be a maximum of 300 ft (91 m) when using CAT5/CAT6 cabling; for flash upgrading, the maximum distance is 50 feet (15 m), using any cable.

### Network Cabling

Vicon recommends using CAT5, CAT5e or CAT6 cables for Ethernet network applications.

| Cable Type   | Bandwidth (MHz) | Maximum Distance ft (m) |
|--------------|-----------------|-------------------------|
| Belden 1624P | 100             | 246 (75)                |
| Belden 1583A | 100             | 328 (100)               |
| Belden 1585A | 100             | 328 (100))              |
| Belden 7883A | 250             | 328 (100))              |

### RS-485 Cabling (for future use)

Vicon recommends Belden 8437 or Belden 8441 cable at a maximum distance of 5000 feet (1524 m). The sum of all cabling, from one end of the line to the other end of the line, must not exceed 5000 ft. Cabling leading to intermediate (not end-of-line) termination boxes can have two cables of length greater than 10 ft and two cables of length less than 10 feet. The 5000 ft recommendation is based on the actual data rate, not the maximum RS-485 data rate of 10 megabits/second which would limit the cable distance to 4000 ft.

# Technical Information

## Electrical

|                    |  |
|--------------------|--|
| Input Voltage:     | 13.6 VDC +/-2%.  |
| AC Input:          | 15 W power supply adapter provided; 120/230 VAC input. |
| Input Current:     | 140 mA.  |
| Power Consumption: | 2 W.   |
| Heat Equivalent:   | 0.1 btu/min (0.03 kg-cal/min).                         |

Note: These figures represent the conversion of 100% of the electrical energy to heat. Actual percentage of heat generated will be less and will vary from product to product. These figures are provided as an aid in determining the extent of cooling required for an installation.

## Connectors, Controls and Display

### Rear Panel:

|                 |  |
|-----------------|--|
| Ethernet:       | RJ-45; for IP network connectivity.                    |
| RS-422:         | 6-pin screw terminal connector (female).               |
| USB:            | For future use.  |
| RS-232, RS-485: | 9-pin D-shell connector (female); for Flash upgrading. |
| Parallel Port:  | 25-pin D-shell connector (female); for future use.     |
| Power:          | 2-pin screw terminal connector plug (female).          |

### Front Panel:

|                                   |   |
|-----------------------------------|---|
| LCD Panel:                        | Displays programming and operational screens.   |
| Numeric Keypad:                   | Number entry.   |
| Camera Key:                       | Enters camera number.   |
| Monitor Key:                      | Enters monitor number.  |
| Special Function Keys:            | Keys that select Mode, Macro, Multi-Screen and Full Screen.<br>Selects programming and operational screens.   |
| Preset Key:                       | Enters preset number.   |
| Alarm Key:                        | Acknowledges alarms; buzzer On/Off software selectable.   |
| Back/Clear Key:                   | Clears incorrect entry.   |
| Help Key:                         | Displays help screen.   |
| Shift Key:                        | Sets presets and macros.  |
| Joystick:                         | Controls pan and tilt movement; twist top controls zoom in/out.   |
| Focus:                            | Two buttons to control lens focusing Near and Far.  |
| Iris:                             | Two buttons to control lens iris to Open and Close.   |
| Jog/Shuttle:                      | Used to control frame advance and reverse, fast forward and reverse video; ViconNet/Virtual Matrix mode only. |
| ViconNet/Virtual Matrix Controls: | Used to Record, Freeze, Play and Stop video.  |

## Mechanical

|               |   |
|---------------|---|
| Construction: | Top: plastic.   |
| Finish:       | Silver with blue, black and gray keys.  |
| Dimensions:   | Height: 4.00 in (102 mm).<br>Width: 13.75 in. (349 mm).<br>Depth: 8.75 in (222 mm). |
| Weight:       | 4.0 lb (1.8 kg).  |

## Environmental

|                              |                                     |
|------------------------------|-------------------------------------|
| Operating Temperature Range: | 32 to 104°F (0 to 40°C).            |
| Operating Humidity Range:    | Up to 90% relative, non-condensing. |

## Vicon Standard Equipment Warranty

Vicon Industries Inc. (the "Company") warrants your equipment to be free from defects in material and workmanship under Normal Use from the date of original retail purchase for a period of three years, with the following exceptions:

1. VCRs, all models: Labor and video heads warranted for 120 days from date of original retail purchase. All other parts warranted for one year from date of original retail purchase.
2. LCD and CRT monitors, all models: One year from date of original retail purchase.
3. Uninterruptible Power Supplies: Two years from date of original retail purchase.
4. VDR-700 Recorder Series: One year from date of original retail purchase.
5. V5616MUX: One year from date of original retail purchase.
6. Arecont Cameras: One year from date of original retail purchase.
7. FMC series fiber-optic media converters and associated accessories: Lifetime warranty.
8. For PTZ cameras, "Normal Use" excludes prolonged use of lens and pan-and-tilt motors, gear heads, and gears due to continuous use of "autopan" or "tour" modes of operation. Such continuous operation is outside the scope of this warranty.
9. Vicon Security Management Systems (SMS) All Models: All hardware is warranted for two years from date of original retail purchase.
10. Any product sold as "special" or not listed in Vicon's commercial price list: One year from date of original retail purchase.

Date of retail purchase is the date original end-user takes possession of the equipment, or, at the sole discretion of the Company, the date the equipment first becomes operational by the original end-user.

The sole remedy under this Warranty is that defective equipment be repaired or (at the Company's option) replaced, at Company repair centers, provided the equipment has been authorized for return by the Company, and the return shipment is prepaid in accordance with policy.

The Company will not be obligated to repair or replace equipment showing abuse or damage, or to parts which in the judgment of the Company are not defective, or any equipment which may have been tampered with, altered, misused, or been subject to unauthorized repair.

**Software supplied either separately or in hardware is furnished on an "As Is" basis. Vicon does not warrant that such software shall be error (bug) free. Software support via telephone, if provided at no cost, may be discontinued at any time without notice at Vicon's sole discretion. Vicon reserves the right to make changes to its software in any of its products at any time and without notice.**

**This Warranty is in lieu of all other conditions and warranties express or implied as to the Goods, including any warranty of merchantability or fitness and the remedy specified in this Warranty is in lieu of all other remedies available to the Purchaser.**

No one is authorized to assume any liability on behalf of the Company, or impose any obligations on it in connection with the sale of any Goods, other than that which is specified above. In no event will the Company be liable for indirect, special, incidental, consequential, or other damages, whether arising from interrupted equipment operation, loss of data, replacement of equipment or software, costs or repairs undertaken by the Purchaser, or other causes.

This warranty applies to all sales made by the Company or its dealers and shall be governed by the laws of New York State without regard to its conflict of laws principles. This Warranty shall be enforceable against the Company only in the courts located in the State of New York.

The form of this Warranty is effective March 1, 2011.

**THE TERMS OF THIS WARRANTY APPLY ONLY TO SALES MADE WHILE THIS WARRANTY IS IN EFFECT. THIS WARRANTY SHALL BE OF NO EFFECT IF AT THE TIME OF SALE A DIFFERENT WARRANTY IS POSTED ON THE COMPANY'S WEBSITE, [WWW.VICON-SECURITY.COM](http://WWW.VICON-SECURITY.COM). IN THAT EVENT, THE TERMS OF THE POSTED WARRANTY SHALL APPLY EXCLUSIVELY.**

Vicon Part Number: 8006-9010-03-09 Rev 0311

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