QUICK INSTALLATION GUIDE

PERC2000 SYSTEM CONTROLLER INTERFACE WITH THIRD-PARTY CONTROL DEVICE AND AUTOPATCH COMMAND SET

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www.pesa.com
Phone: 256.726.9200

1.0 PURPOSE

This Guide provides set-up and configuration procedures to allow PESA's Cheetah 144NE Digital Video Router, through the PERC2000 System Controller, to accept control commands using the AutoPatch control protocol issued from an external third-party control device. Once the configuration is completed, operation of the PESA router with the AutoPatch command set is totally transparent to the user.

Completing the system set-up and configuration is a four-step process:

- Install the latest release of PESA's Cattrax system control software application.
- Install the latest firmware update to the PERC2000 hardware.
- Modify the system configuration file to select the AutoPatch control option, and download the modified file to the PERC2000 controller.
- Install the serial communication bus between the PERC2000 System Controller and the third-party control device.

Each step of the process is discussed in the following paragraphs.

2.0 UPDATE CATTRAX SOFTWARE CONTROL APPLICATION

Support for the AutoPatch control protocol is contained in Cattrax Version 2.7.0.0, Build 7 and later. Update the Cattrax application on the host PC in accordance with the following procedure:

CAUTION!!

Save any open device or configuration files on Cattrax **BEFORE** you install the updated application software.

1. Copy and unzip the latest Cattrax software release supplied to you to a convenient working folder on the host PC.
2. Click the executable (*.exe*) file to begin installation of the Cattrax application.
3. Cattrax will automatically install and give you the option to launch the program upon completion.
4. When Cattrax opens, click the "Help" tab and the "About" icon in the help menu. Verify that the version of Cattrax is 2.7.0.0, Build 7, or later, as illustrated by Figure 1.
5. Allow Cattrax to "discover" the PESA devices on the network before proceeding to Paragraph 3.0.

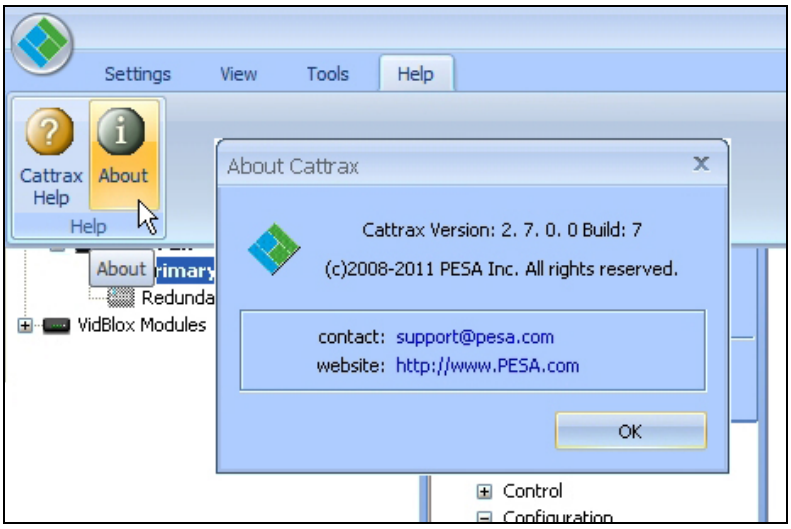


Figure 1. About Cattrax Prompt

3.0 UPDATE PERC2000 FIRMWARE

CAUTION!!

Using Cattrax on a host PC, upload and save the controller configuration file **BEFORE** you install the firmware update to the PERC2000 hardware.

Update PERC2000 firmware in accordance with the following procedure:

1. Ensure that the PERC2000 System Controller you wish to update is actively communicating via Ethernet with the host PC running Cattrax.
2. Open Cattrax and select the *active* PERC2000 device from the Devices View column, as shown by Figure 2.
3. Click the "*Upload From Controller*" button, as shown by Figure 3. This action will cause Cattrax to non-destructively load and display the system configuration file currently loaded in system controller memory.
4. Select the "*Save to File*" button. Cattrax opens a dialog box where you may enter a file name, or use the suggested default name, for the configuration file, and specify a location or device where you wish to save the file. The filename is followed with a *.cfg* extension.
5. Select "*Save*" to write the file to the selected folder or device.

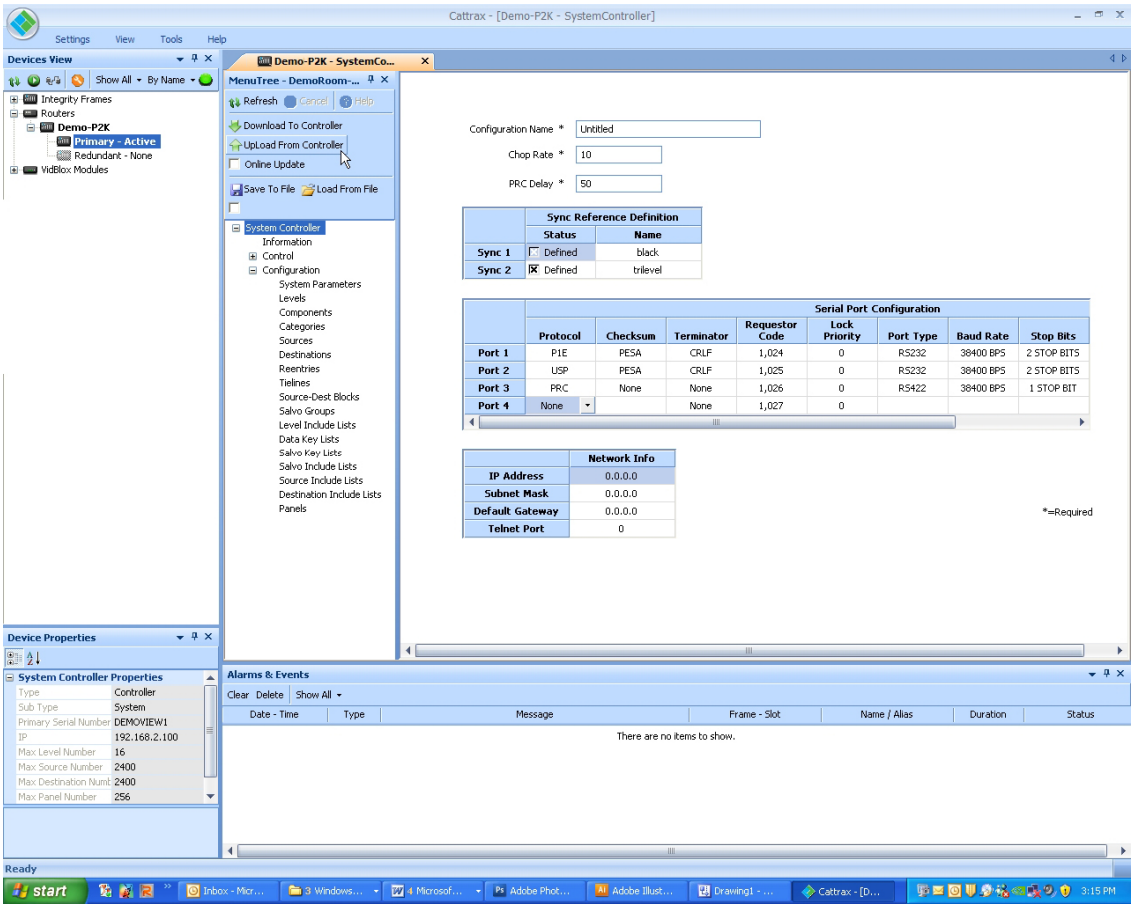


Figure 2. Cattrax P2K System Controller Screen Example

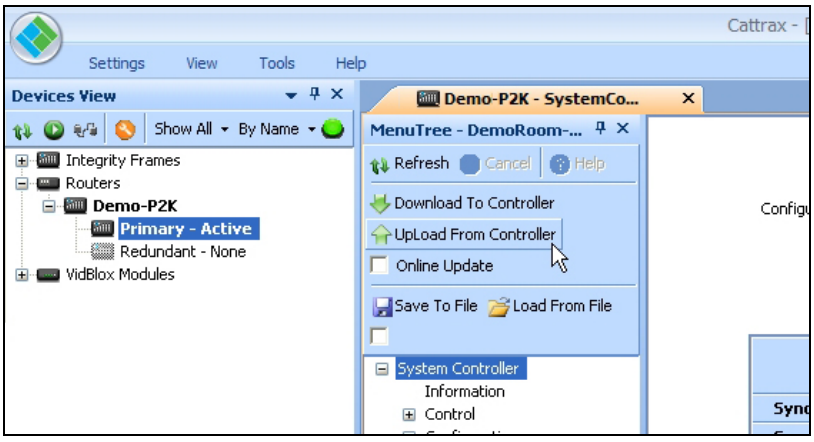


Figure 3. Upload from Controller Command

6. Always upload and save the configuration file programmed in system controller flash memory before proceeding with the update procedure.

The necessary firmware update code to allow AutoPatch control of the PERC2000 is delivered to you as a single file named **P2KMainApp_V4_5_0_8-31-2011** and ending with a **.PBN** extension that you must copy to the hard drive of the computer running Cattrax. It makes no difference to the download operation where the file is stored, and you may use any directory structure you like. For convenience, PESA recommends that you make a specific directory on your hard drive to store only .PBN files. Whatever directory structure you use, you will have to access this directory as part of the download process.

The remaining steps outline the procedure for loading the firmware update to the system controller. For this example, we have created a directory on the host PC named "RouterConfigs" to store the update files.

7. Copy the .PBN update file to the desired directory on the host PC hard drive.
8. Open the *Tools* menu on Cattrax and select the **Download** function as shown by Figure 4.

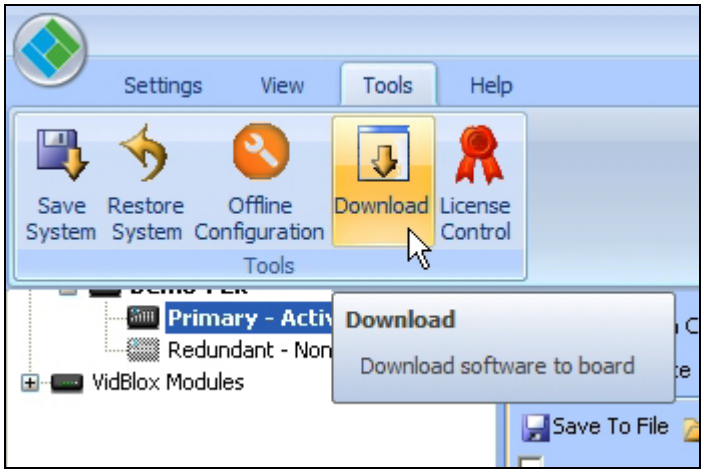


Figure 4. Download Icon

9. Selecting download opens the **Open Flash Update File** dialog box as shown by Figure 5.

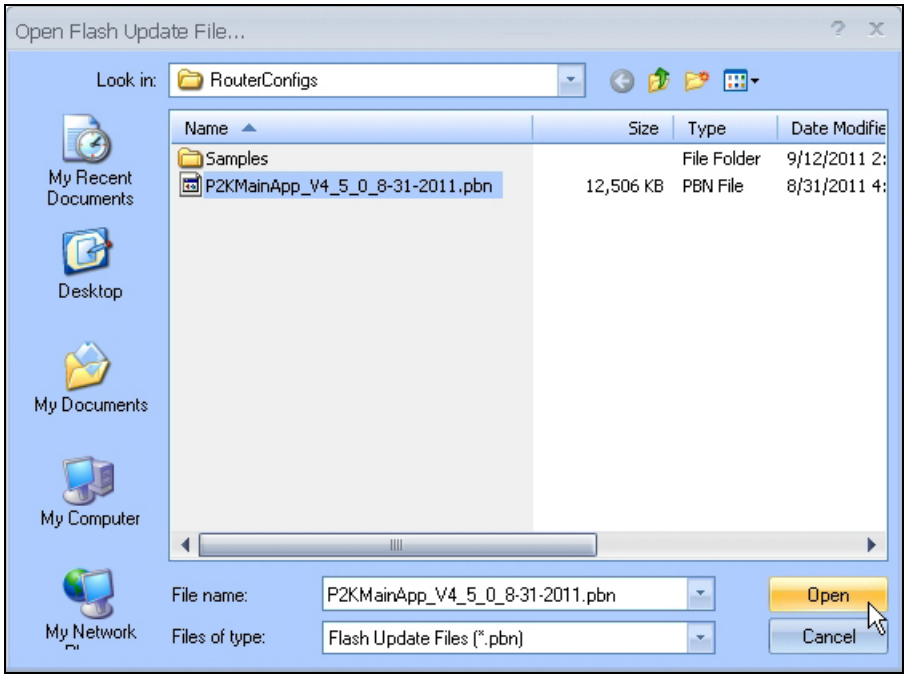


Figure 5. Flash Update Dialog Box

10. Navigate to the hard drive directory containing the *.PBN* update file and select it from the listing. Ensure that the proper file is selected and that the correct filename is shown in the *File Name:* box, as shown, and click *Open* to continue.

11. The Download Flash File dialog box shown in Figure 6opens with a display that identifies the system controller hardware to be updated by type, its alias name on the network and its IP address. The Version column identifies the version of the code *currently* written to device flash memory; and the right-most column, labeled *Select Action*, displays the action the selected .PBN file has on the device if downloaded. For purposes of this procedure, you will be prompted to Upgrade the device to a newer code version (Upgrade).

12. Place a check in the Upgrade box beside and click the **Download** button to initiate software update or click the **Exit** button to leave the screen with no changes.

CAUTION	**Downloading software code will take the device off-line for the duration of the download and will re-boot the device after installation.**

13. Download and installation is automated and a progress bar is displayed as the procedure is performed; a re-boot of the PERC2000 controller is automatically initiated after installation of the new code.

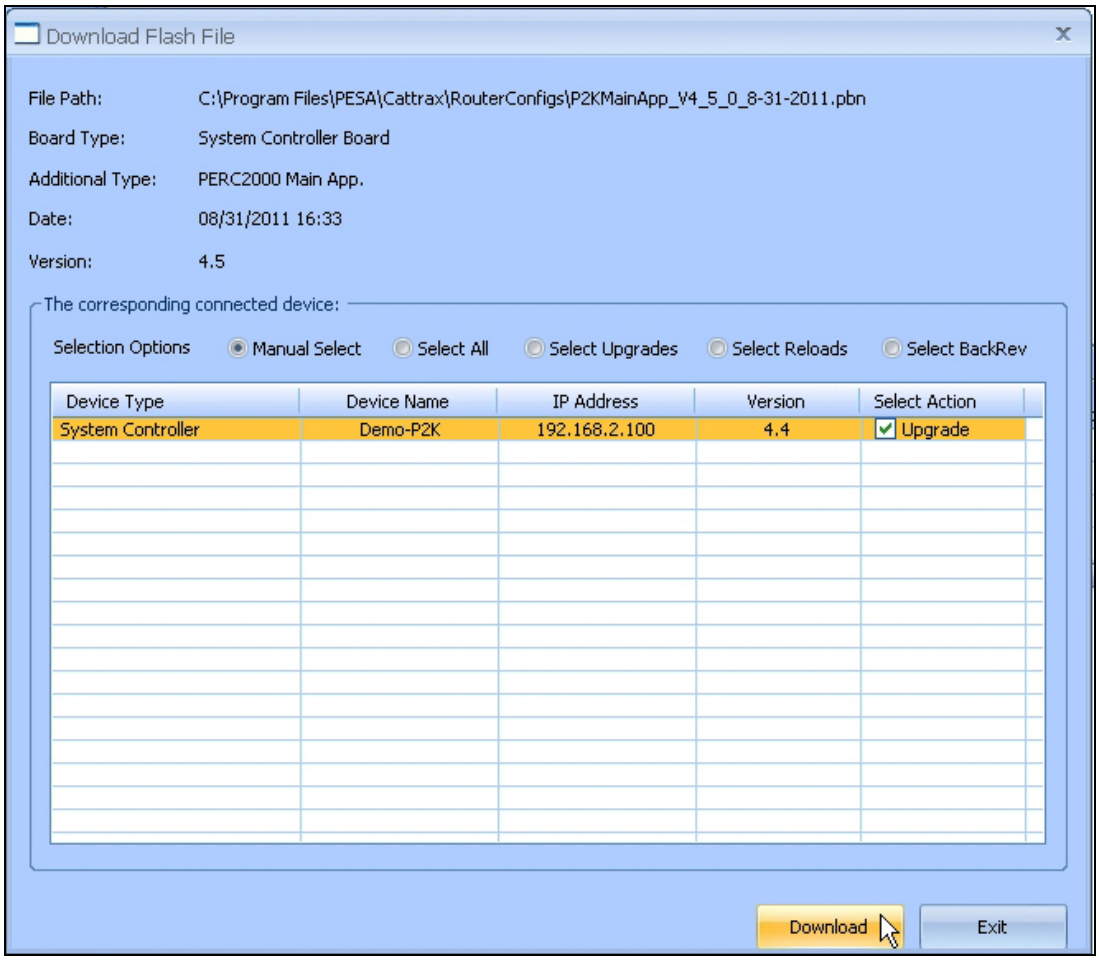


Figure 6. Download Flash Selection Box

4.0 MODIFY SYSTEM CONFIGURATION FILE

When you have completed installation of the required updates, Paragraphs 2.0 and 3.0, you will need to modify the controller configuration file to activate the AutoPatch control function.

In most applications you will likely be modifying and re-loading the configuration file that was uploaded and saved in Paragraph 3.0, as outlined in the following procedure:

1. Open Cattrax and select the PERC2000 controller that you updated in Paragraph 3.0 from the Devices View column, as shown by Figure 7. Be sure the controller is identified as the *active* controller.
2. Click the "Load From File" command as shown. This opens a dialog box where you may browse to the folder containing the configuration (.cfg) file you save in Paragraph 3.0, Steps 1 thru 5.
3. Select the file and load it into the Cattrax application.

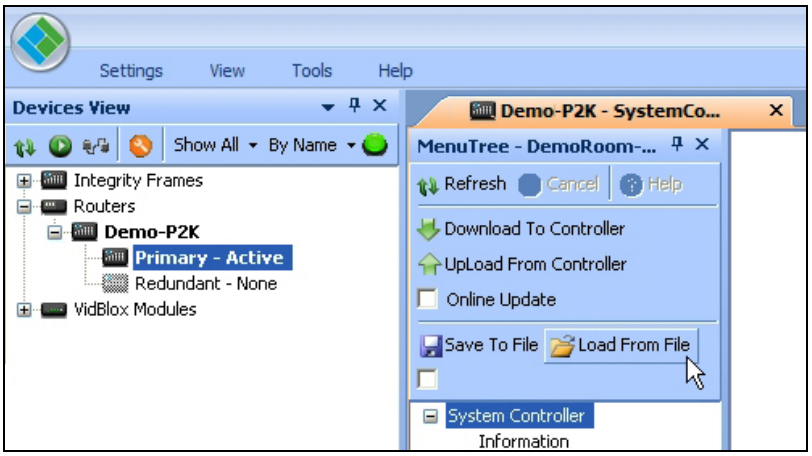


Figure 7. Load from File Command

4. Select the "Configuration" menu from the Menu Tree listing, as shown by Figure 8.
5. Locate the **Serial Port Configuration** box located towards the center of the main display window, as shown by Figure 8.
6. Open the pull-down menu in the **Protocol** column of the row corresponding to the port number you used to interface the system controller with the external Third-party control device. For our example, we used COMM port 1.
7. From the pull-down list, locate the *AutoPatch* entry and click to select it as the active protocol for the port, as shown in Figure 8.
8. Once you have made this modification to the configuration, PESA recommends that you save the file with an identifiable filename using the "Save To File" command.

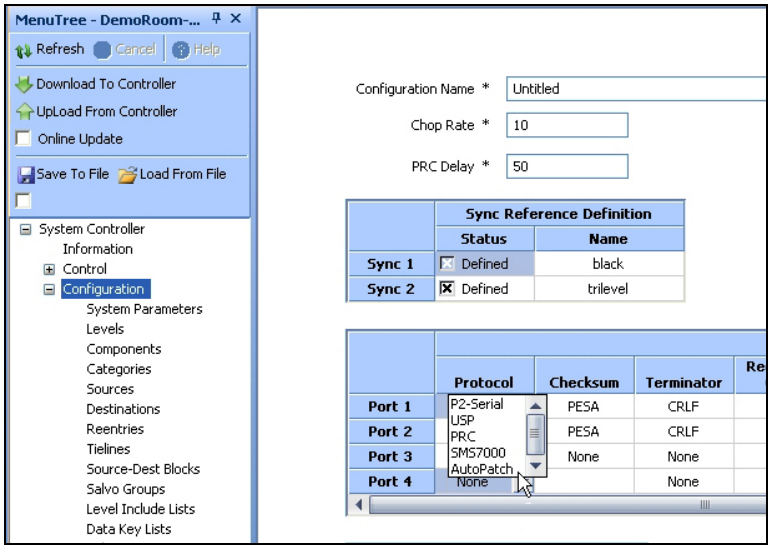


Figure 8. AutoPatch Protocol Menu

9. In order to activate the new configuration file, you must write it to flash memory on the system controller, replacing the currently loaded file.
10. Click the "Download To Controller" button as shown in Figure 9. You will be prompted with a dialog box to verify the requested action.
11. Click the "Yes" button to start file data transfer to the controller.

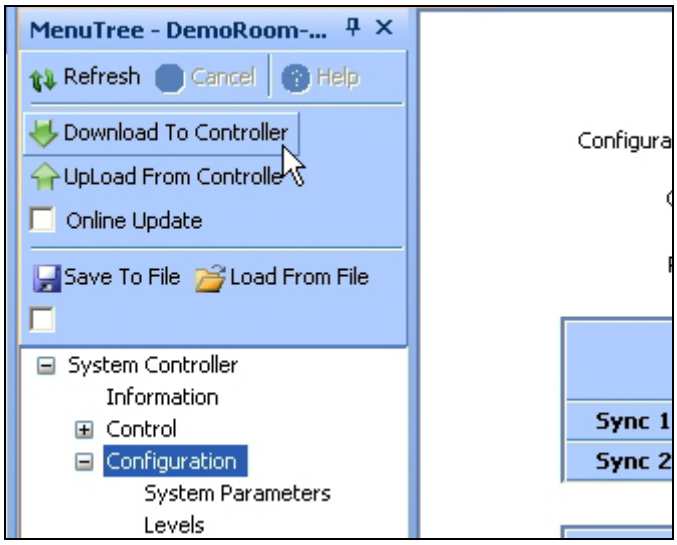


Figure 9. Download to Controller Command

5.0 INSTALL SERIAL COMMUNICATION BUS

PESA's PERC2000 System Controller communicates with the external third-party control device through any one of three available serial data ports accessed through a rear panel connector on the PERC2000 mounting frame. Depending on the particular installation, the PERC2000 system controller hardware (circuit card) may be mounted in a stand-alone 1RU chassis frame, with connector access on the rear panel of the frame; or it may be mounted internal to a PESA video router frame. In this installation application, the system controller derives power from the router frame power supply modules and external connections with the controller are made through dedicated connectors on the rear panel of the router frame.

PERC2000 communicates with Cheetah video router frames, including the 144NE, over a PESA proprietary serial communication protocol called the PESA Router Control Bus, or simply the PRC bus. Although PERC2000 supports 4 serial data bus ports, the port labeled *COMM3* is always dedicated to the PRC bus and used for adding additional video router frames to a PESA router installation. For this reason, only COMM ports 1, 2 or 4 may be used to interface with an external control device.

Each available serial COMM port is accessed through a DB9 connector that defaults to the RS-232 protocol. If required for a particular installation, the serial port operating parameters may be modified through a menu entry available on the Serial **Port Configuration** box of the Cattrax software control application, as shown by Figure 10. Connector pin-out data for each handshake protocol is shown by Table 1.

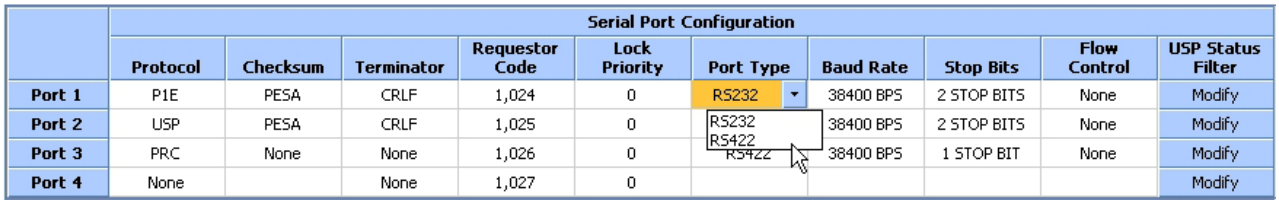
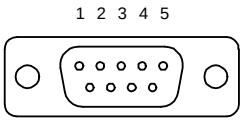


Figure 10. Serial Port Configuration Menu

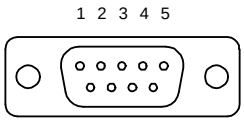
Table 1. Serial Connector Pin-Outs

RS-232 SERIAL PORT PIN-OUT DATA		
Pin	**Signal**	**In/Out**
1	CD	Input
2	RX	Input
3	TX	Output
4	DTR	Output
5	Ground	---
6	DSR	Input
7	RTS	Output
8	CTS	Input
9	RI	No Connect



Contact locations when viewed from rear of chassis.

RS-422 SERIAL PORT PIN-OUT DATA		
Pin	**Signal**	**In/Out**
1	Ground	---
2	TX +	Output
3	RX -	Output
4	Ground	---
5	Ground	---
6	Ground	---
7	TX -	Output
8	RX +	Input
9	Ground	---



Contact locations when viewed from rear of chassis.

In addition to the RS-232/RS-422 handshake protocol, the Serial Port Configuration box also allows you to modify the following serial communication parameters:

- Checksum
- Terminator
- Baud Rate
- Stop Bits
- Flow Control

Changes made to the serial bus operational parameters are modifications to the system configuration file, and as such must be downloaded to system controller flash memory in order to become active. If it is necessary to modify the serial bus operational parameters in order to interface the PERC2000 system controller with the third-party control device, follow the steps of Paragraph 4.0 and enter any additional changes needed to the **Serial Port Configuration** box in addition to the AutoPatch protocol selection. Save the configuration file changes and download the modified file to the PERC2000 controller.

Figure 11 illustrates location of the three available serial bus ports, using the PERC2000 stand-alone chassis rear panel layout and COMM port 1 for example only. If the PERC2000 card is mounted in a Cheetah video router frame, the connector labeling is the same, even though the physical panel layout will vary by router model.

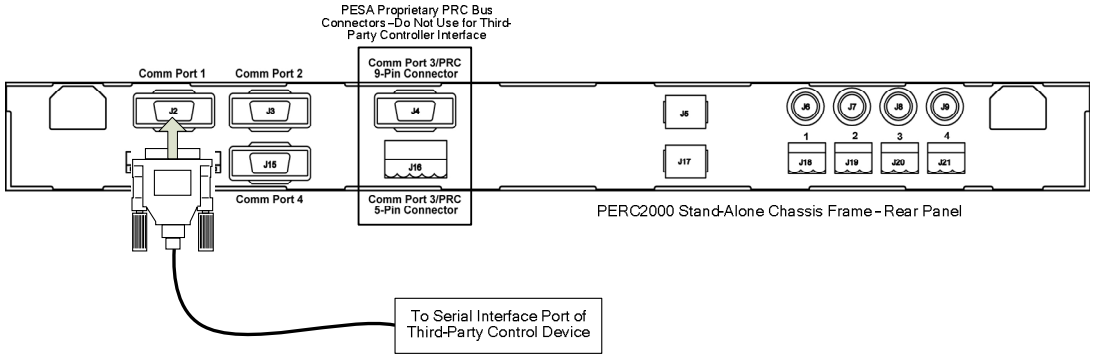


Figure 11. PERC2000 Chassis Frame – Rear Panel Layout

Using the connector labeling of Figure 11 as an example, connect the PESA equipment end (DB9 connector) of the control device interface cable to the desired serial bus port of the PERC2000 controller. COMM port 1 is shown here as an example, however, you may use any open COMM Port (1, 2 or 4). You will be asked to identify the selected port during creation or modification of the system configuration file.

6.0 CONCLUSION

When you have completed Steps 2.0 through 5.0 of this procedure, and performed a system re-boot, your PESA system controller and any routing equipment it controls will respond to the AutoPatch command set.

If you encounter any difficulty with this procedure or have any questions, please contact PESA Customer Service.

SERVICE DEPARTMENT
Tel: 256.726.9222 (24/7)
Toll Free: 800.323.7372
Fax: 256.726.9268
Email: service@PESA.com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