

# 5x86 Third Serial Port Installation

## Introduction

These instructions explain how to add a third serial port to P3, P4, P5, or P7 PowerStations with a 5x86 CPU card.

**Warning** You must observe normal precautions against static discharge to prevent damage to the PowerStation.

## Electrostatic Discharge Precautions

Modern integrated electronic devices, especially CPUs and memory chips, are extremely sensitive to electrostatic discharges (ESD) and fields. Before you disassemble the PowerStation, be sure to follow these simple precautions to protect you and the PowerStation from harm resulting from ESD.

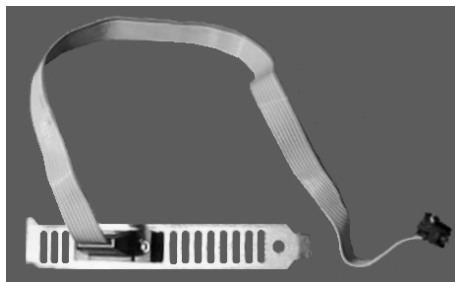


1. To avoid electric shock, always disconnect the power from the PowerStation before you remove the backshell cover or separate the backshell from the front panel. Do not touch any components of the CPU card or other cards while the PowerStation is on.
2. Disconnect power before making any hardware configuration changes. The sudden rush of power as you connect a jumper or install a card may damage sensitive electronic components.
3. Only handle internal components in an ESD-safe location using appropriate grounding methods.
  - Always ground yourself to remove any static charge before you touch the CPU card.
  - Be particularly careful not to touch the chip connectors.
  - Keep any card in its anti-static packaging when it is not installed in the PowerStation and place it on a static dissipative mat when you are working on it.
  - Wear a grounding wrist strap for continuous protection.

## Before You Start

**Be sure you have the following tools:**

- Keyboard (If you have a P3 or P4 PowerStation, you will also need a Y cable)
- Flat-head and Phillips screwdrivers
- Needlenose pliers
- Third COM Port Upgrade Kit (including the serial tang cable assembly pictured below)



## Configure the System Support Card

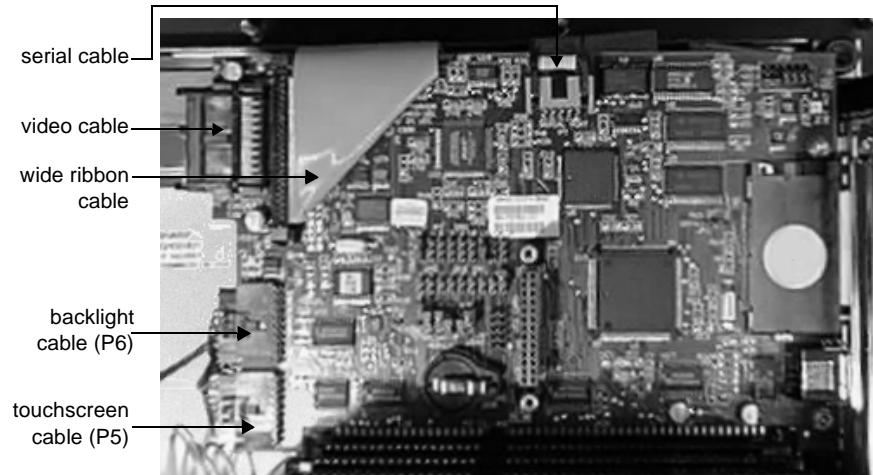
### Open the PowerStation

1. Turn off the PowerStation unit.
2. Disconnect the unit from its power source.
3. Remove the PowerStation from its enclosure (if installed).  
Consult the PowerStation Installation Instructions if you need help with this removal.
4. Remove the back cover from the unit by removing the screws.
5. Remove the Compact Flash (CF) card.

**Important** Always make sure power to the PowerStation is turned OFF when removing the CF card.

## Disconnect the Cables

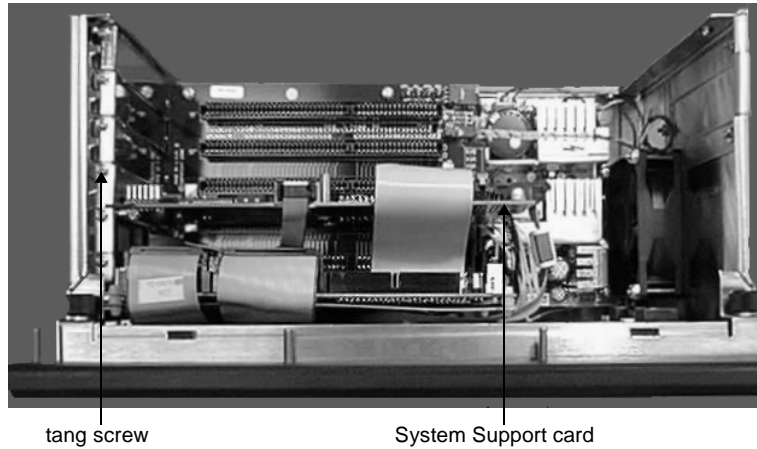
Use the following diagram to find the cables and other components mentioned in the following steps:



1. Press out the locking ears to disconnect both video cables.  
The video cable connects at the top left corner of the card. The wide ribbon cable connects very close to the other video cable.
2. Lift the locking ears to disconnect the serial cable from the top center of the System Support card.
3. Disconnect the backlight cable (P6) by depressing the latch on the top and sliding the connector out.
4. Disconnect the touchscreen cable (P5) by depressing the latch on the top and sliding the connector out.

## Remove the System Support Card

Use the following diagram to find the cables and other components mentioned in the following steps:



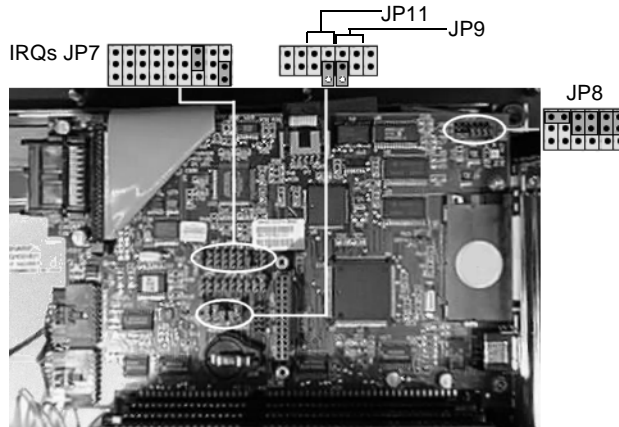
1. Remove the tang screw from the System Support card tang.
2. Carefully pull out the System Support card, and lay it to the side.

**Important** Be careful to observe ESD guidelines when handling the System Support card.

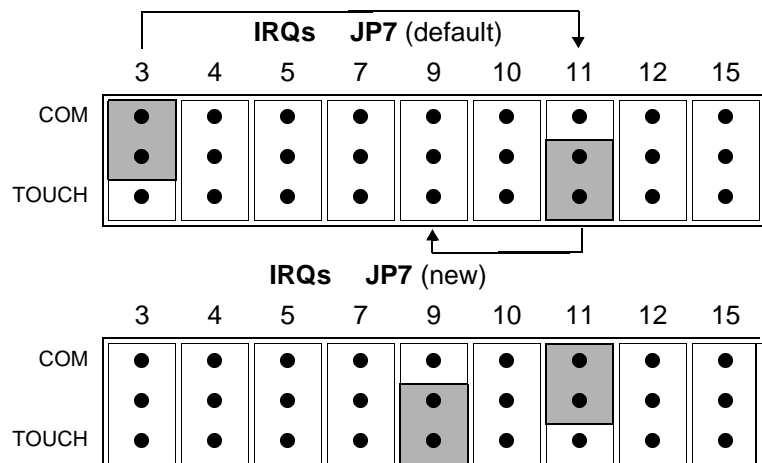
## Configure the System Support Card

Use the following diagrams to help you physically move the touchscreen from COM3 to COM4. Follow these steps to locate and change the jumpers.

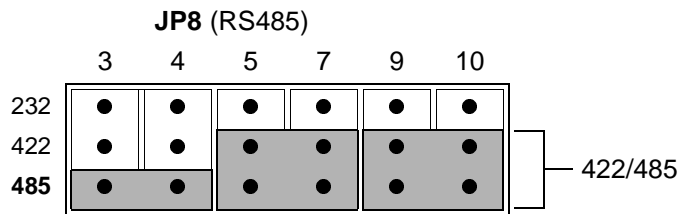
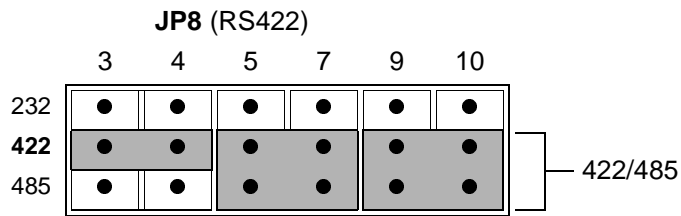
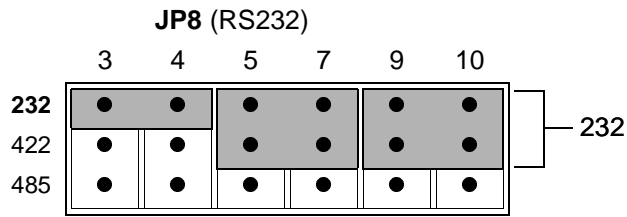
1. Find the IRQ jumpers JP7 and the jumpers JP8, JP9, and JP11.



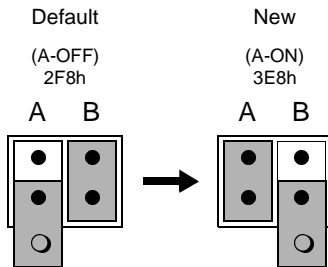
2. Move the TOUCH jumper at IRQ 11 to IRQ 9 and the COM jumper at IRQ 3 to IRQ 11 as shown below.



3. Change jumper JP8 according to the RS setting you need.

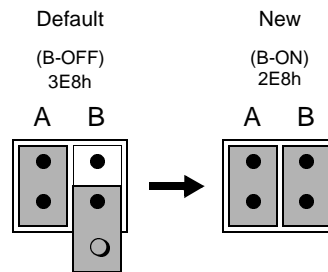


4. Change jumper JP9-A from OFF to ON, and jumper JP9-B from ON to OFF.



This sets the System Support card to COM3.

5. Change jumper JP11-B from OFF to ON.



This sets the touchscreen to COM4.

## Establish Communication for COM2 on the CPU

### Change jumper settings (if required)

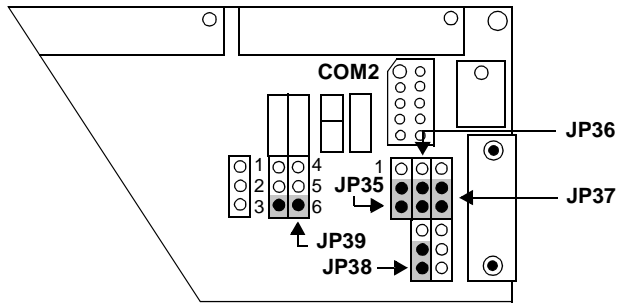
Perform this step **only** if you need to change the interface to RS422 or RS485 communication.

**Important** You do NOT need to remove the CPU card from the back-plane to complete this step.

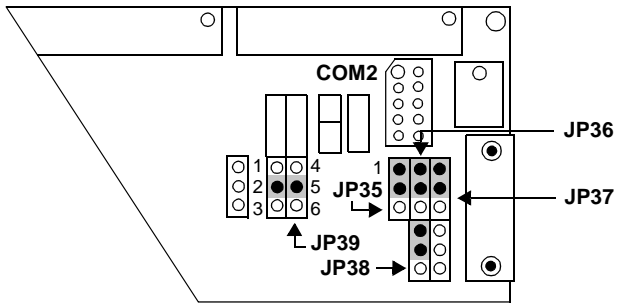
1. Gently lay the unit face down to enable easy access to the CPU card.
2. Use the needlenose pliers to set jumpers JP35, JP36, JP37, JP38, and JP39.

Refer to the following cut-away diagrams for exact placement of jumpers.

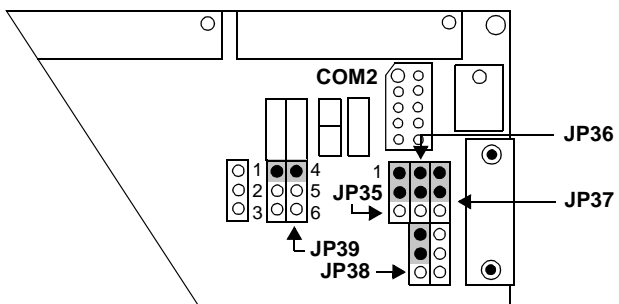
RS232 Configuration (Default)



RS422 Configuration



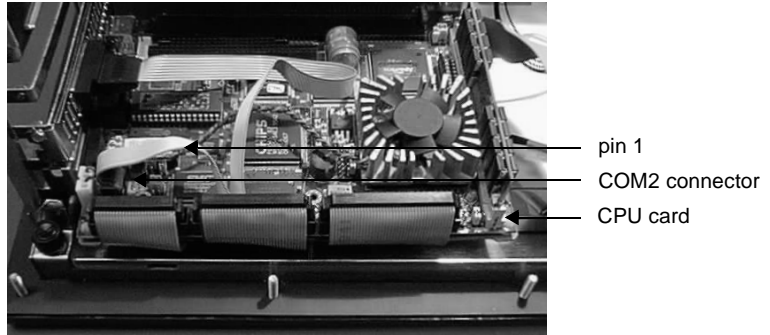
RS485 Configuration





## Connect the 9-pin COM2 Cable to the CPU

Connect the 9-pin ribbon cable attached to the vented tang to the COM2 connector of the CPU card, as shown below.



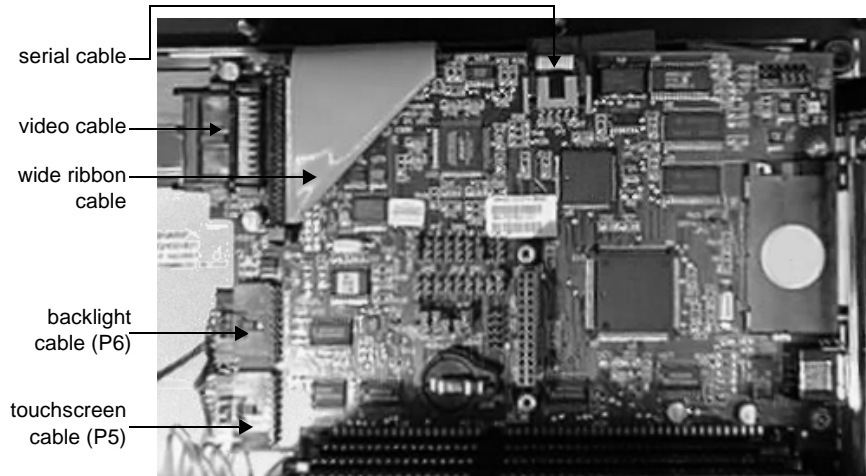
**Important** Be sure that pin 1 is on the outer edge toward the top of the PowerStation, or the connection will not function properly.

## Reinstall the System Support Card

Use the picture on the following page to locate the correct cables.

1. Slide the System Support card back into its slot.
2. Reconnect the touchscreen and backlight cables to the System Support card.
3. Reconnect the video cable and wide ribbon cable to the System Support card.

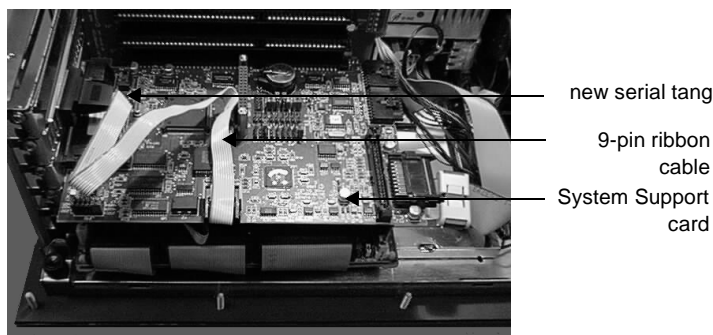
4. Attach the card with the tang screw.



### Install the Third COM Port (COM3)

Use the diagram below as a reference for installation of the serial tang and 9-pin ribbon cable to the System Support card.

1. Insert the new serial tang into the next available slot.
2. Attach the 9-pin ribbon cable from the new serial tang to the System Support card.



**Note** You may need to remove a blank cover if an insertion slot is not available for the new serial tang.

3. Insert the CF card into the PowerStation's flash card slot.

**Important** Make sure power to the PowerStation is turned OFF when inserting the CF card.

4. Replace the back cover.
5. Reconnect the power.

## Enable COM2 During System Boot

The new serial port must be enabled before it can be used by the PowerStation.

1. Turn the PowerStation ON.
2. While the system is booting, press the **Delete** key during the memory test to enter the CMOS setup utility.
3. From the CMOS setup utility main menu, select **Chipset Features Setup**, then press **Enter**.
4. Highlight **Onboard UART 2**.
5. Press the **Page Up** key to select **2F8/IRQ3**.
6. Press **Esc** to save and return to the main menu.
7. Highlight **Save & Exit Setup**; then, press **Enter**.
8. Press **Y** at the **Save to CMOS and Exit** prompt; then, press **Enter**.

## Reconfigure the Touchscreen

### Run the DOS utility

Because the COM port has changed, you need to reconfigure the touchscreen by running the TOUCHCFG.EXE utility.

Refer to the PowerStation User Guide for instructions on how to open the touchscreen configuration utility.

Once you have opened the Interface Configuration Options screen, you need to change the COM port.

1. Press **I**.

2. Press **4** to Set COM4.
3. Press **I** to change the interrupt.
4. Press **4** to Set IRQ9(2), then enter **IRQ9**.
5. Verify that the address reads 2E8h.
6. Press **O** to save settings.
7. Press the **Esc** key or **X** to exit.
8. Reboot the PowerStation.

**Important** You must reboot your system for the changes to take effect.

The third serial port to your PowerStation has been successfully installed. You can now use this port to communicate with external devices.

### Run the Touch Screen Configuration Utilities

If you run Windows 95 or Windows NT on your PowerStation, you will also need to configure the touchscreen in Windows.

1. Launch the Configuration application from the **Start** menu.
  - Note** The Configuration application is located in the Touch Screen Utilities folder inside the Programs folder.
2. Press the **Tab** key to highlight the **Interface** button.
3. Press **Enter**.
4. Press the **Tab** key to highlight the **Interrupt** drop-down box.
5. Press the **arrow up** or **arrow down** keys until **IRQ9** is highlighted.
6. Press the **Tab** key to highlight the **Address** drop-down box.
7. Press the **arrow up** or **arrow down** keys until **2E8h** is highlighted.
8. Verify that the **COM Port** reads **Custom**.
9. Press the **Tab** key until the **OK** button is highlighted.
10. Press **OK** or **Enter**.
11. Press **Enter** again.
12. Exit the Touch Screen Utilities.