



ProII Integrated Circuit Upgrade Procedures



***VideoRay ProII
LCD & Video Overlay and Panel Controller CPU
Processor Replacement Procedures***

The system will require re-calibration after this process

1. ***Ensure that Control Panel is not connected to power***
 - 1.1. Unplug the Control Panel from any Power Source
 - 1.2. Ensure that Power is disconnected at the Mains
2. ***Remove ICB from Pelican 1550 Case***
 - 2.1. Using the cross-tip (+) screwdriver from your VideoRay tool kit, remove the screws holding the control panel in the Pelican 1550 case and remove the panel from the Pelican 1550 case
 - 2.2. Place the control panel face down on a padded surface, such as a towel or blanket to prevent damage to the face of the control panel
3. ***Orient the control panel***
 - 3.1. For purposes of these instructions, orient the panel so that when you are looking at it, the Main Power Supply (large silver box labeled SP-300-48) is on your right and the Joystick is on your left
 - 3.2. The center of the panel, closest to you will have 2 PCBs stacked. The top Printed Circuit Board (PCB) is the **Panel Controller**, and the bottom PCB is **LCD Controller**

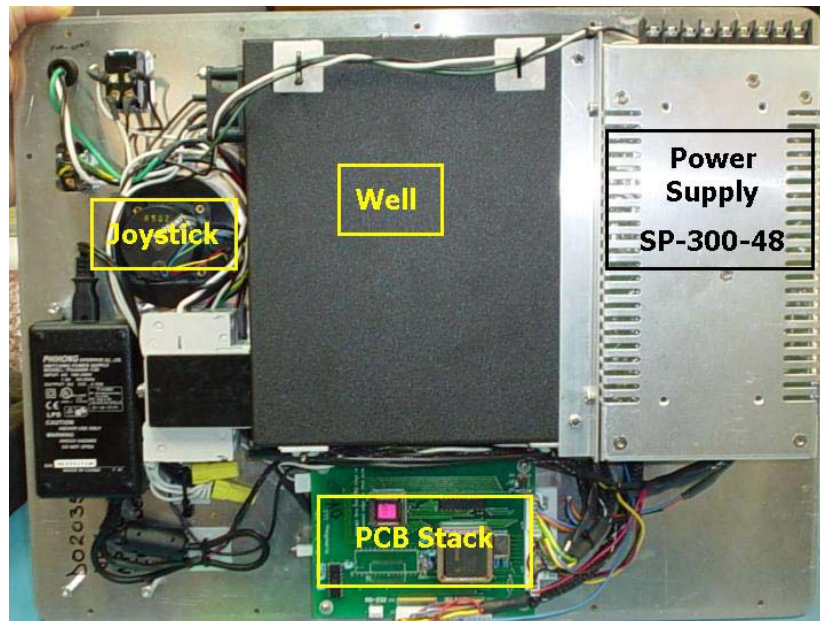


Figure 3.1 Shows Orientation of Control Panel (Rear View)

4. ***Check Joystick***

- 4.1. Make sure that you have a joystick that is capable of 3rd axis function



Figure 4.1 Shows Joystick Capable of 3rd Axis Function

- 4.2. The Joystick is connected to the **Panel Controller** (Top Board) PCB

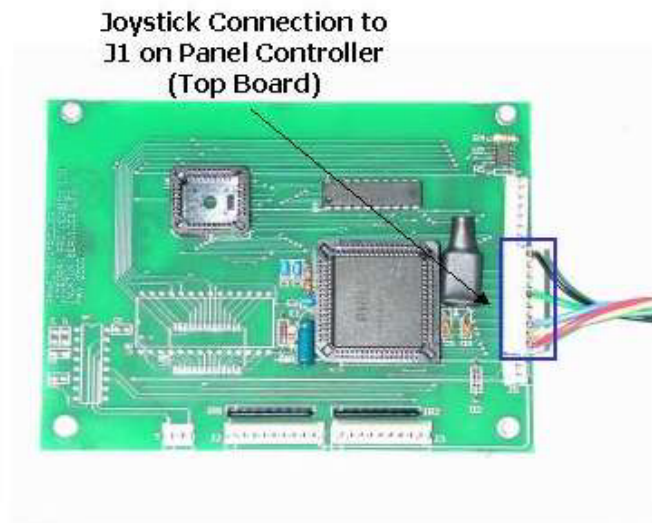


Figure 4.2 Shows The Joystick Connection to the **Panel Controller** PCB

- 4.3. Check the green wire from the joystick and make sure that it is connected to Slot 5 (From the top) on the white connector

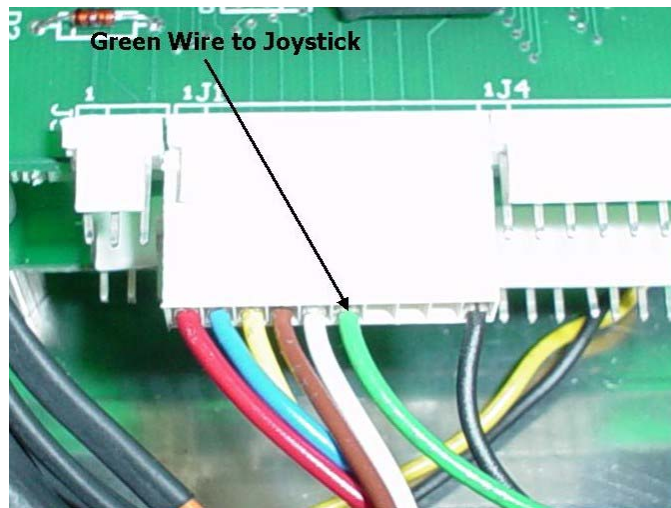
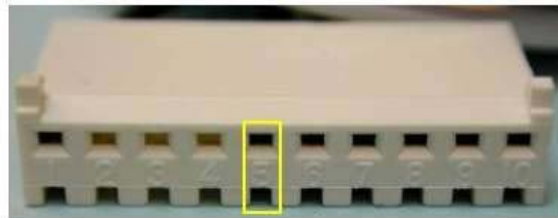


Figure 4.3 Shows the Green wire to Joystick

- 4.3.1. If the green wire is not connected to slot 5, use the green wire supplied to solder to the green wire from the joystick and insert the other end (pin) to the white connector slot 5



Both Views Show Slot 5 On Connector

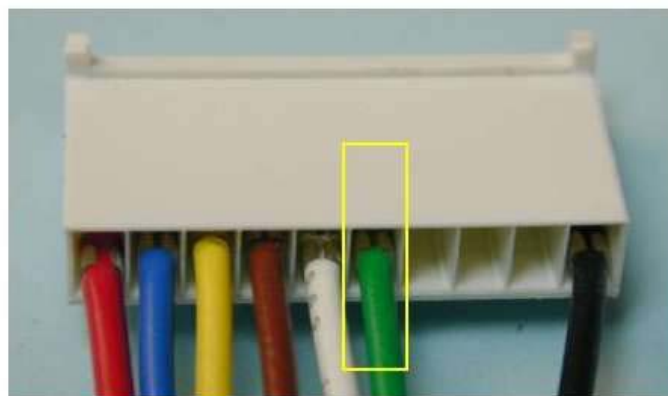


Figure 4.3.1 Shows Slot 5 on Connector

5. **Install Software into LCD Controller PCB**

- 5.1. As a precaution, label the 5 plugs attached to the **Panel Controller** PCB with the corresponding labels on the PCB. Clockwise from the left side of the PCB they will be as follows: J4, J1 and J5 on the left of the PCB and J3 and J2 on the top of the PCB. **NOTE:** *This is done strictly as a precaution should you remove one of the plugs*

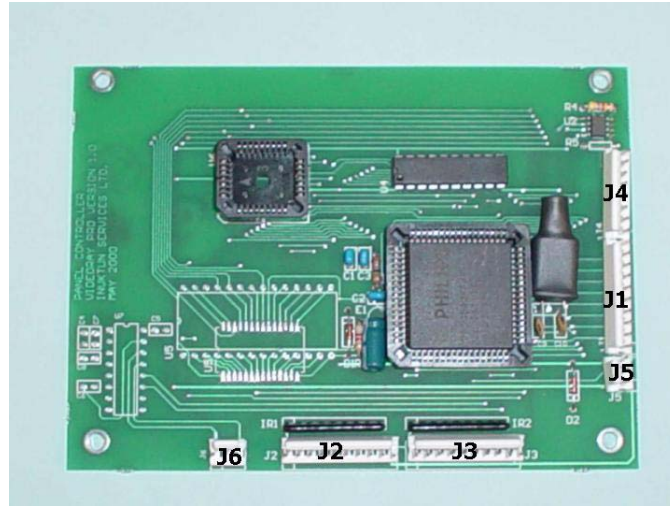


Figure 5.1a shows Connectors to Label on the **Panel Controller**

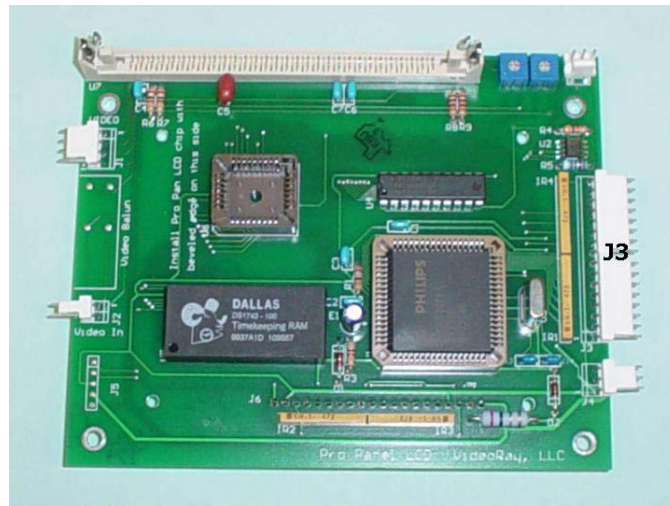


Figure 5.1b Shows Connectors to Label on the **LCD Controller**

- 5.2. Note the four screws (one at each corner) that secure the **Panel Controller** PCB to the control panel. Keep in mind that there are nylon spacers between the **Panel Controller** and the **LCD Controller** PCB

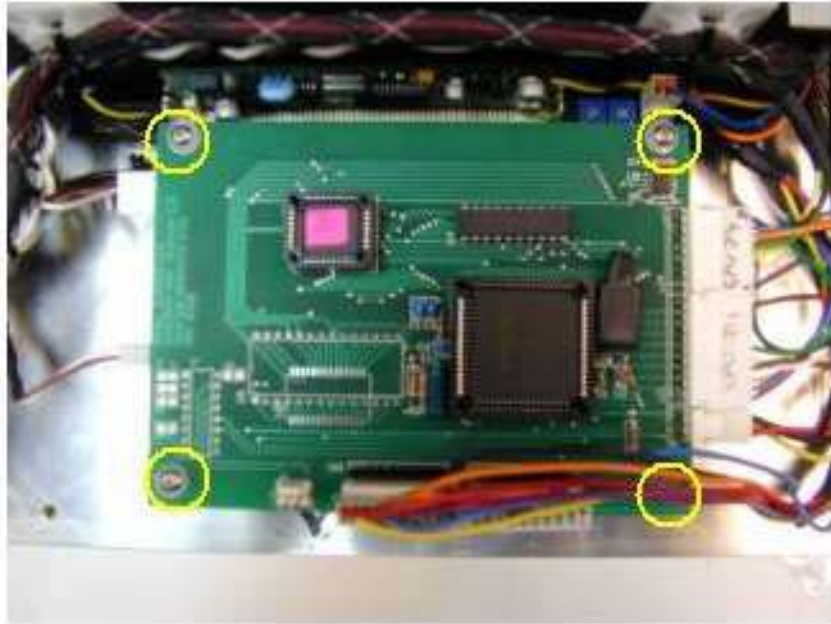


Figure 5.2 Shows the 4 screws to remove

- 5.3. Remove the four screws that connect the **Panel Controller** and the **LCD Controller** PCB, keep the spacers with the screws once they are removed
- 5.4. Remove the **Panel Controller** PCB from of the **LCD Controller** PCB by flipping it to your right. You should have enough slack in the wires connected to the **Panel Controller** PCB to do this easily, but if you do not, just remove the plugs connected to it, double checking that they are labeled as per step 5.1
- 5.5. ***The LCD Controller PCB will be shown by itself***
- 5.6. On the left hand side of the **LCD Controller** PCB is a small Integrated Circuit (IC).



Figure 5.6 Shows the LCD Controller PCB with IC Socket

- 5.6.1. Note that the chip is secured in a socket that is mounted to the PCB.
- 5.6.2. The chip holder has two slots that are opposite of each other on corners



Figure 5.6.2 Shows 2 Slots to insert IC Extractor

- 5.7. Insert a chip puller into these two slots.
 - 5.7.1. In order to get as far into the holder as possible, so you may have to jiggle the puller into the chip holder

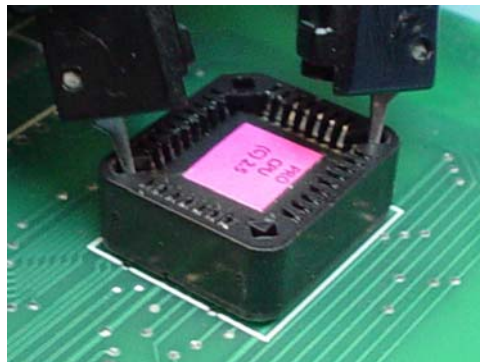


Figure 5.7.1 Shows Beginning Insertion of IC Extractor

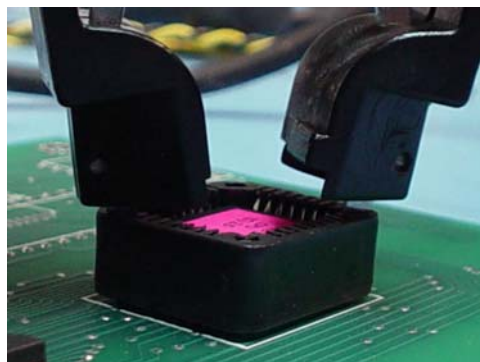


Figure 5.7.1a Shows Complete Insertion of IC Extractor

- 5.8. Once you have the chip puller inserted into the IC chip holder, squeeze the chip puller together with your thumb and forefinger
 - 5.8.1. The chip will be raised up and pulled free from the IC chip holder

- 5.9. Remove the chip labeled Pro LCD 5.8 sent to you from the protective bag
 - 5.9.1. Handle as little as possible, to protect from static electricity
- 5.10. Note that one corner of the chip sent to you is flat on one corner as you look at it, the IC chip holder is the same way



Figure 5.10 Shows Flat Corner of IC Socket



Figure 5.10.1 Shows Flat Portion of IC Chip

- 5.10.1. Oriented correctly, the chip holder has the flat corner in the lower left
- 5.11. Place the chip sent to you into the chip holder, ensuring that the "flat" corners of the chip and the holder are lined up
- 5.12. Gently apply pressure until IC is secured into IC Socket

6. ***Install Software into Panel Controller PCB***

- 6.1. Place the PRO Controller printed PCB back on top of the **LCD Controller** PCB and re-install the screws
- 6.2. Remove the IC Chip from the Panel Controller IC Socket and replace with the new CPU IC Chip provided

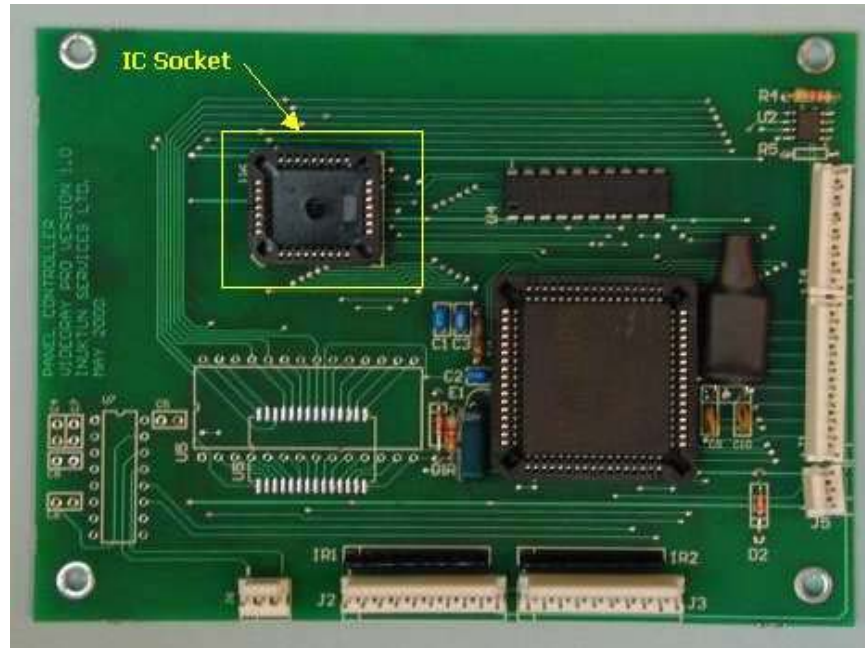


Figure 6.2 Shows the IC Socket on the Panel Controller PCB

7. ***Re-Assembly***

- 7.1. Re-Assembly of the panel is in the opposite order of disassembly
8. ***Re-calibrate the unit in accordance with the operating manual***
<http://www.videoray.com/Support/downloads.htm>