

Revision 1, 18th June 2003

## Cliff Hanger FNI 'CH-FNI' Installation Instructions:

### Introduction

Cliff Hanger requires the 'injection' of frame numbers into the data pathways between the video board and the main board, to allow the use of most modern players like the Pioneer LD-V8000 and Sony LDP-1450 with a LaserAce.

Most of the modern players slightly corrupt the encoded frame number video bar (dotted stripes) at the top of the image as they read the frame number themselves internally, or have digital video memory processing before the video is output. LaserAce has been designed with high speed frame number output circuitry suitable to intercept this, and inject the correct frame number into the board as it is read directly from the replacement player.

### Installation

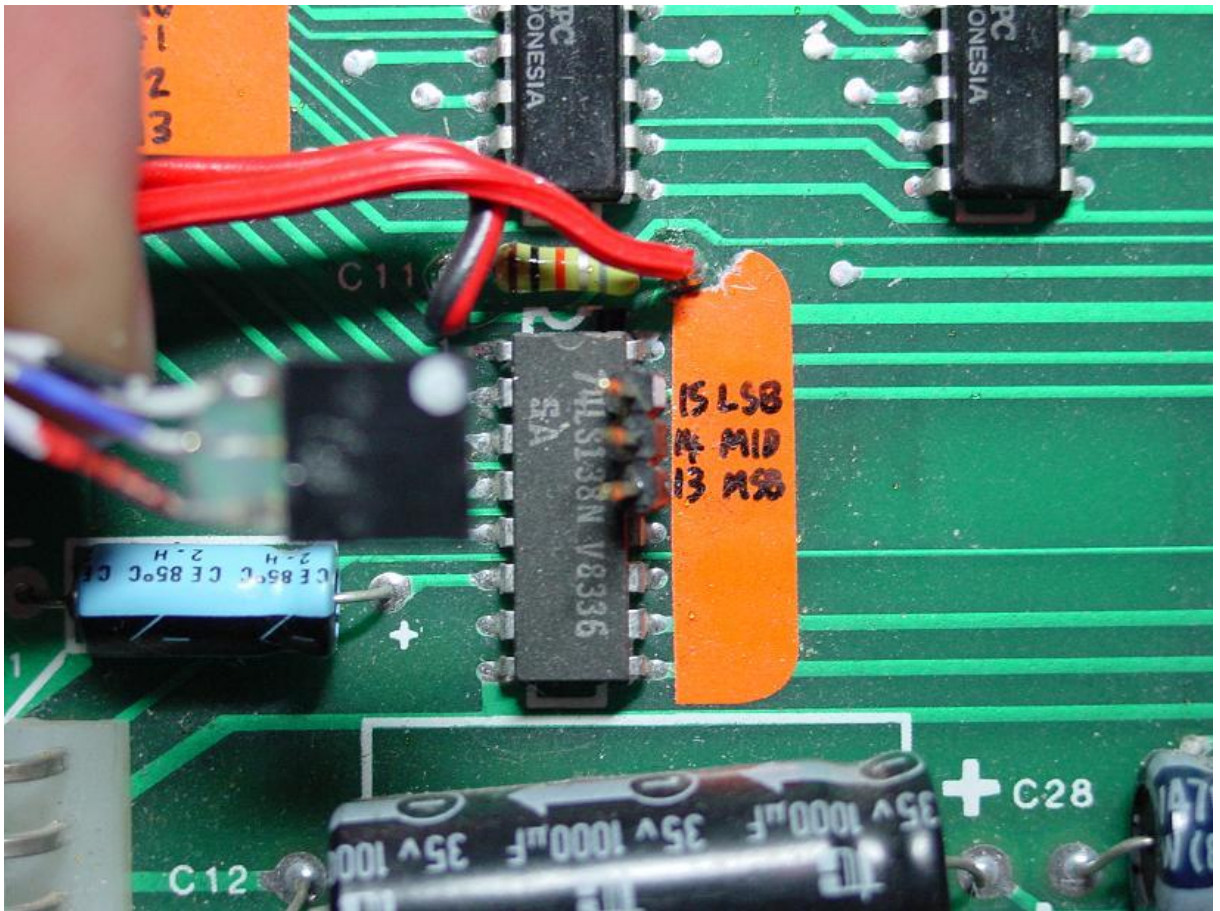
You will require a pair of sharp wirecutters ('sidecutters') and a soldering iron to install the CH-FNI.

Some solder and all other small wiring parts have been pre-made and are supplied in the CH-FNI kit.

It's probably a good idea to print these instructions out, and mark off each section as you go, to ensure all steps are done.

### Procedure

1. All work is done on GSI-1000 board (video board, smaller top one)  
We recommend this board be removed from the machine and placed on a clean well lit bench so it is easy to work on. Be careful to take note of, and mark original cable and connector locations so it goes back together easily!
2. Solder the 3 pin male header onto pins 13,14,15 on 74LS138 at location A1 as shown in the picture.

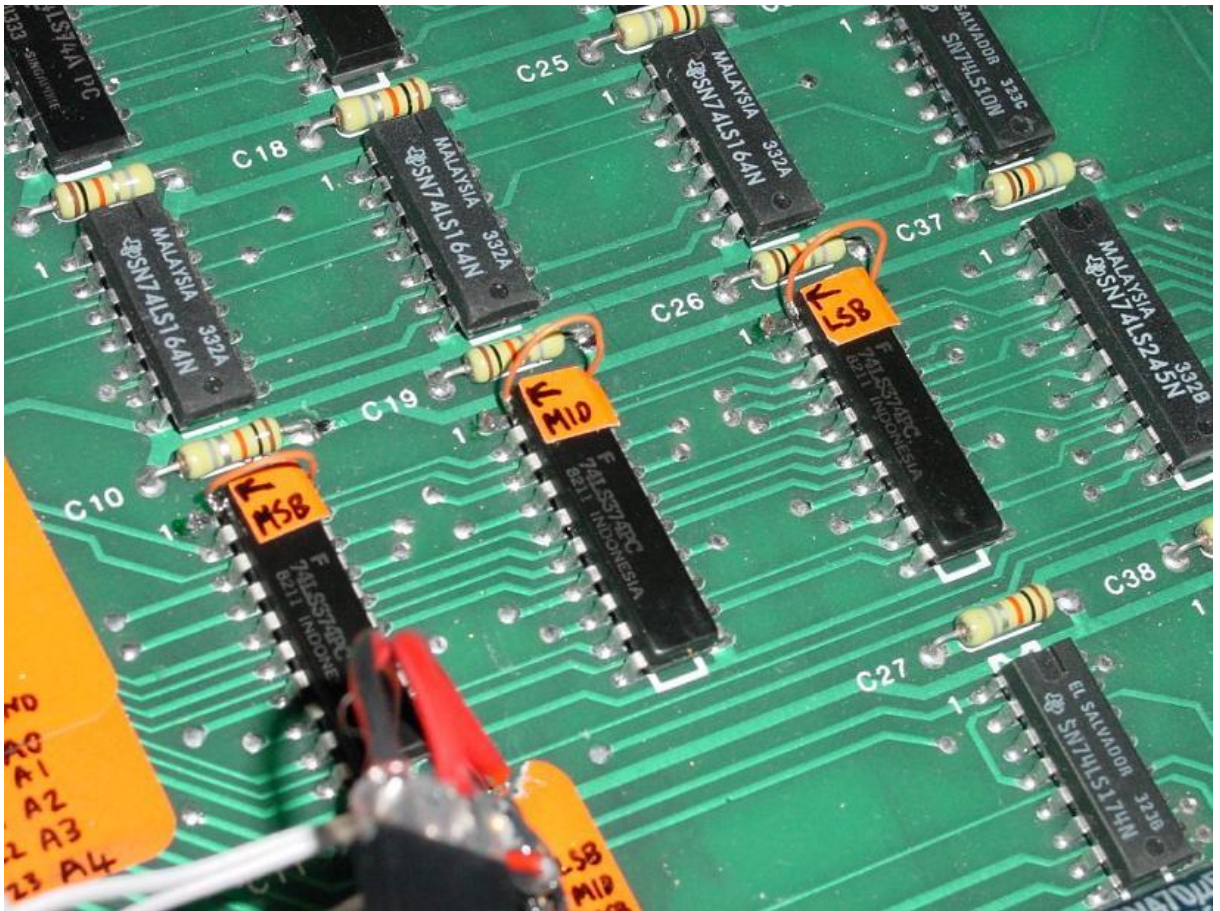


3. Carefully cut leg number 1 on the 74LS374 IC's at locations B1, B2, B3. Cut it back not too close to the IC body, as wires must be soldered to the remaining piece of leg on the IC. (the remaining piece of leg attached to the board is not connected or used)

4. Solder a small wire from the remaining piece of leg at pin 1 on the 74LS374's from above, to pin 20(Vcc) on the same IC. Pin 20 is directly opposite pin 1, top right corner of the IC. This pulls up pin 1 of the IC (which is the enable line) and disables these IC's from functioning, which allows LaserAce to insert the frame number.

- \* Check with a multimeter that the cutoff leg of pin 1 has no contact with the remaining piece still on the IC.

(We decided cutting the IC leg like this is better than cutting tracks on the board, it's easy to resolder/replace IC's compared to the PCB itself)



- Solder the 2 wire power cable to each side of the resistor above the 74LS138 at A1.

The BLACK (GND) wire goes to the side of the resistor close to pin 1 of the IC, and the RED/BLACK (5V) wire goes to the other side of the resistor, close to pin 16 on the IC. (shown in picture from 2. above)

**NOTE the power wire shown in all these pictures is different to what you will have received,**

**The wire supplied to you is BLACK for GND and RED/BLACK for 5V, and the**

**written instructions here are correct, even though the pictures look different.**

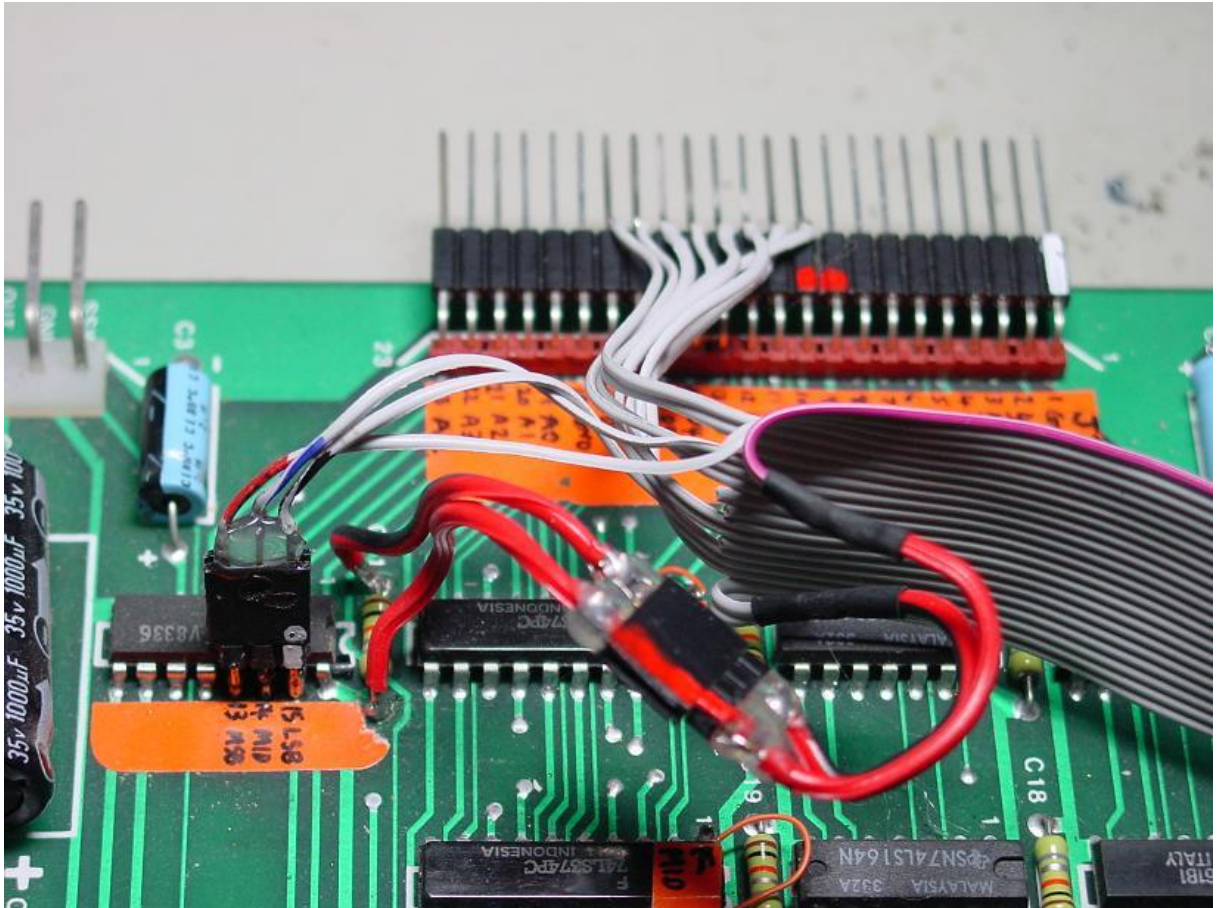
**The wire stock had to change for the cables made recently.**

**The RED wire in the pictures should be your RED/BLACK wire, and the BLACK/RED wire in the pictures should be your BLACK wire.**

- Plug in the large 'injection' cable to the connector strip J2.

This comes in two pieces- one loose piece, and one cabled piece. Some gentle wiggling may be required to slide each piece on firmly. It has been coded with red and white marks to match this picture:





7. Plug in the jumper connectors to the 74LS138, and power cable, **BE VERY CAREFUL OF ORIENTATION AND PLEASE CHECK WORK CAREFULLY!** Note the Black/Blue/Red coloring on the small 3 pin connector, and red stripe on the power connector.
8. Plug in the other end of the FNI cable to LaserAce, the narrow IDC connector only goes in one way, but the DIP20 connector must be carefully placed with the socket notch to pin 1, matching the socket that is part of the LaserAce board.
9. Plug in the PCM trigger cable to LaserAce, and then plug in the other end to the connector that used to go to the IR LED block that pointed at the old PR-8210 player. Note the unused pin of the PCM trigger cable matches the unused pin of the CH IR LED connector.
10. Check it again :)
11. Power up machine and follow LaserAce instructions for setting up Pioneer PR-8210 player as Input, and your chosen player as output.