

## **Project: Eye-Link Communicators: Video Modification**

The Eye-Link Communicators offers hackers a housing unit for their RS170 OEM kit. I had the opportunity to disassemble one set in October. This project took me about 2 hours to modify. The unit looks identically, although I added a video input connector and a power switch.



Tools/equipment required:

Soldering iron/solder  
Drill/Dremel/bits/accessories  
Files, round, flat  
Knife  
Pliers  
Small brush  
Solvent i.e. Toluene  
Screwdrivers  
RS170 OEM kit or equivalent  
Glue i.e. KrazyGlue

### **Disassemble the headpiece.**

1. The most difficult part to remove is the black eyepiece. Apply the Toluene or equivalent solvent with the small brush. This will soften the glue. Use a small screwdriver to gently pry away.
2. Remove the screws holding the rear flex arm together. Remove the blocks and the rubber o-ring. Remove the screws to the front arm with the eyepiece.
3. Inside the eyepiece, you will see a small circuit board. Unsolder the wires from the cable to this board. We are going to re-use this cable. Unsolder the wires for the LED.
4. Remove the board and the grey holder and the Segment LED display. Remove the plastic tunnel. Remove the LED if you wish. I broke mine when trying. This was glued in. OOPS. Can't re-use now.
5. Apply Toluene along the edge of this tunnel to remove the cover. Use the knife to gently pry apart. This tunnel has a clear lens where the Segment LED display rested. Remove this lens. Keep the other lens in place.
6. Clean excess glue off.

### **Modify the tunnel.**

7. On the cover, you will see a scored line. Cut the cover at that line with the knife. Later I had to make another cut because I wanted to keep the cover flat. This was my preference. Yours may be different.

### **Modify the display.**

8. File down the 16° lens from the RS170 OEM kit. The Dremel with a barrel sander comes in handy here. Insert this lens near the first bend inside the tunnel. Check the cover for closing tight.
9. Place the display against the cut edge of the cover. Since there is a mirror reflecting the image, flip the display. Place the backlight against the display. Use the tools as needed to fit the pieces.
10. Crimp the wires from the cable and insert into the housing for the inputs to the RS170 driver board. Connect the backlight.
11. Do a dry fit first. Place the tunnel inside the eyepiece with the display, backlight and driver board.

### **Modify the backpack.**

12. Open up the backpack/keyboard. Unsolder the cable wires to the circuit board. Remove the screws holding the circuit boards.
13. Unsolder the battery wires and solder onto the cable wires for power in to the RS170 driver board. You did write down the color used. I added a small switch in between the positive wire.
14. I mounted a RCA connector on the top cover. Solder the video input wires from the cable to this connector.
15. Replace the circuit boards into the backpack. This is a later project to do.

### **Video Eye-Link.**

16. Insert batteries and video input. Test the unit and adjust the grinded lens. When you have a good image, glue the cover in place and close up the housings. Reassemble to the headband. Oh yeah, you may have to re-design this mounting; the headband fits me.
17. Not a bad microdisplay housing for \$35.US/2 if you succeed.

### **Future Projects.**

With more modifications and other components, there is the keyboard to decode for OSD to the driver board, cable change to accommodate this. Then there's the whole communication thing between the two units, why not look into sending OSD to a nearby unit. Hacker's bin is filling up.