30Video HC Installation Guide

Howdy! Thank you for purchasing my 30Video HC LCD Kit for Mac SE/30! – zigzagjoe :)

To install the LCD kit, please follow these instructions **carefully** as you will need to work on the high voltage components of the machine.

Please take care: I am not responsible if you accidentally injure yourself or cause damage to your computer during the installation process. If you are at all uncomfortable with these procedures, please seek a qualified individual to perform the installation process for you.

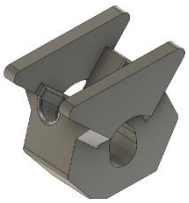
In the Box

1. 30Video HC PDS card
2. Dummy Analog Board
3. LCD Assembly (with Inverter, Breakout board)
4. IO plate & 2x M3 Philips screw and nuts
5. VGA female cable
6. LCD FPC Data cable
7. LCD Berg Power cable
8. LCD Bezel
9. 4x LCD Mount
10. 4x #8 ¾" Philips screws (LCD Mount)

Installation

Turn off and unplug your computer then allow it to sit before disassembling the computer. Compact Macs contain high voltage and the analog board or CRT will remain charged after power is removed. Please take appropriate precautions to render the system safe before working inside!

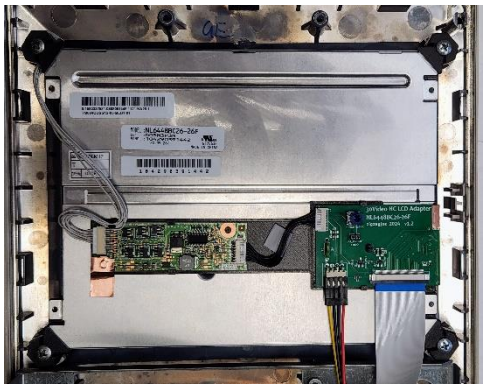
1. Remove plastic programmer's switch, if present.
2. Using a long Torx T-15 screwdriver, remove the 2 screws near the IO area and 2 screws under the handle, then remove the rear of the case.
3. Remove 3 screws securing the expansion port bracket to the chassis.
4. **Follow Apple service manual procedures for removal of the CRT, Analog Board, Power Supply, Fan, and Video board from the unit.**
    a. Click here or use the QR code to view excerpts from service manuals.
    b. The logic board may remain installed, PDS cards should be removed.
5. Mount the LCD bezel to the front of the LCD panel
    a. Remove the protective sheet from the front of the LCD Panel
    b. Remove the protective film from the adhesive on rear of the plastic LCD Bezel
    c. Place the bezel on the panel so the metal frame is not visible and the bezel is centered. You may want to test fit with the LCD mounts before fully adhering.
6. Mount the LCD
    a. Place the machine face down on your work surface.
    b. Install the lower two LCD mounts (right) loosely with provided screws
        i. The new screws should go in with minimal resistance as the thread is similar to the original apple screws.
    c. Insert the panel into the lower two mounts
    d. Slide the upper two mounts over the LCD, then insert the screws and **partially** tighten them
        i. Take care to avoid pinching the inverter wires on the upper left mount (see right)



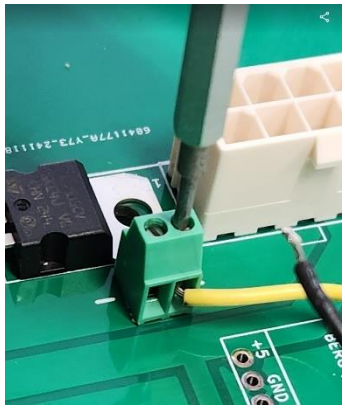
LCD Mount

Continued on rear

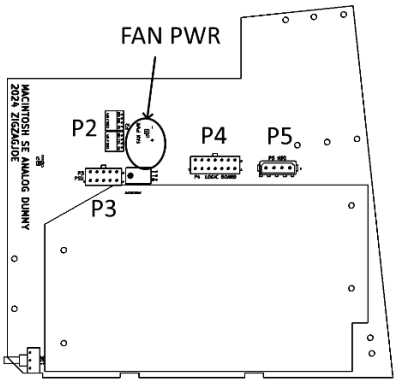
e. Center the panel in the opening (you may find it helpful to check from the front) then tighten all 4 mounting screws.
    i. The mounts and LCD should lay flat, and should go together smoothly without excessive force.
    ii. If you encounter resistance, back off and ensure the LCD is centered in the mounts.



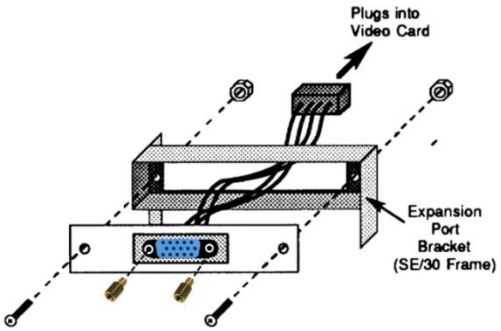
7. Connect the Berg power cable to the LCD board **P1**
    a. Brace & hold the connector as you plug in the cable!
8. Connect the FPC cable to the LCD board **J3**
    a. Insert with copper side down/blue side up.
    b. See FPC cable section for how to operate FPC connectors.
9. Mount the fan & fan bracket to the provided dummy analog board
10. Strip fan wires (if required) and insert into the FAN_PWR terminal block on the replacement analog board, matching polarity to markings on the PCB.
    a. You will need to desolder or cut fan wires from original analog board.
    b. ⚠ Colored wire is positive (**+**)
    c. Tighten top screws with a flat blade screwdriver to clamp wires.



11. Secure the power supply to the dummy analog board with 4 screws and connect the PSU connector **P3**
12. Install the dummy analog board into the chassis and secure with 4 screws.
    a. You may need to gently flex the chassis to align holes.
13. Connect the PSU ground jumper to the chassis and secure with a screw.
14. Connect the HDD Power (**P5**) and Logic Board (**P4**) cables to the analog board.
15. Connect the LCD Power cable to the Berg connector (**P2**, above P3)
16. Connect the LCD Data cable to **LCD** connector on the rear of 30Video HC card.
    a. See FPC cable section for how to operate FPC connectors.
17. Plug the VGA cable into the **VGA** connector on the 30Video HC card.
    a. ⚠ Connector only fits one way!
18. Seat the card **carefully** into the PDS slot on the motherboard.
    a. It may take some force, but it should seat smoothly.
    b. Ensure the logic board is entirely forward in the chassis rails if the card does not seem to be seating. Verify that no pins have become bent and nothing is stuck in your PDS slot.



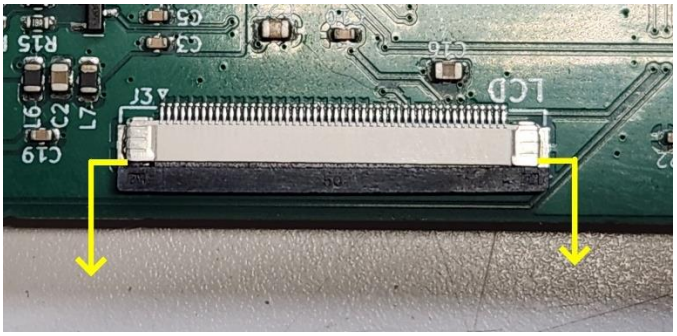
19. Install the VGA cable into the IO cover
20. Attach IO cover to expansion port bracket using provided M3 screws.
21. Attach the expansion port bracket to the chassis.
22. If present, remove the plastic IO port blank from the rear case by carefully pressing on it.
23. Reinstall the rear case, and secure with the 4 Torx screws.
24. **Enjoy your new LCD upgraded SE/30!**

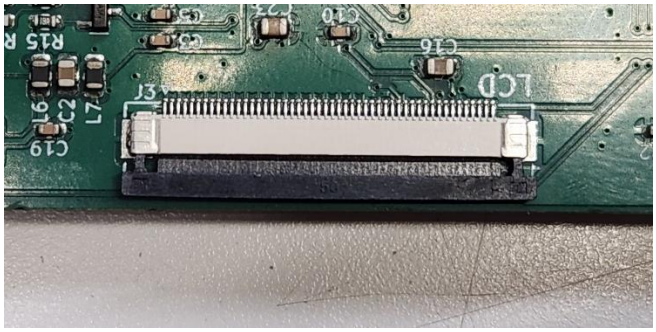


No drivers are required. See final page for detailed usage of the video card.

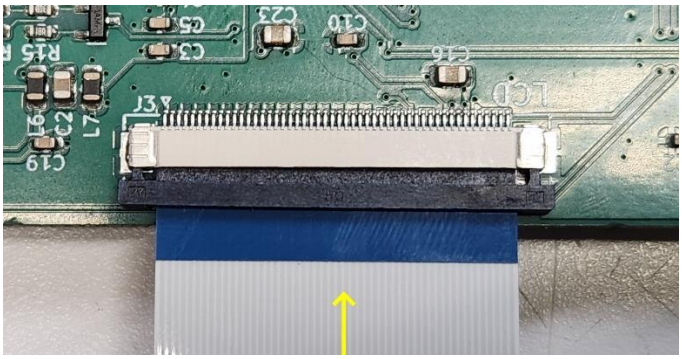
Connecting FPC Cables

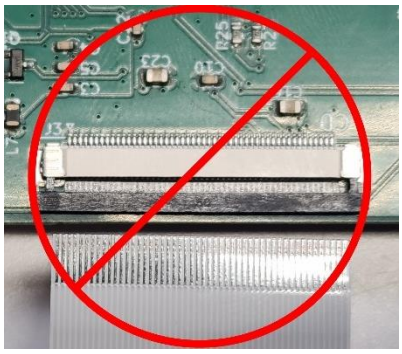
1) Grip the dark colored latch mechanism by the edges and gently slide it straight down, away from the white body.



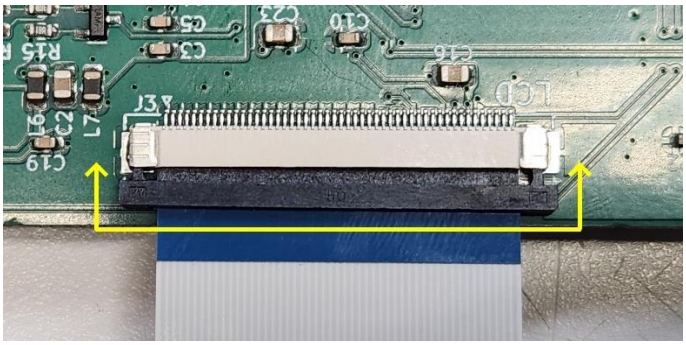


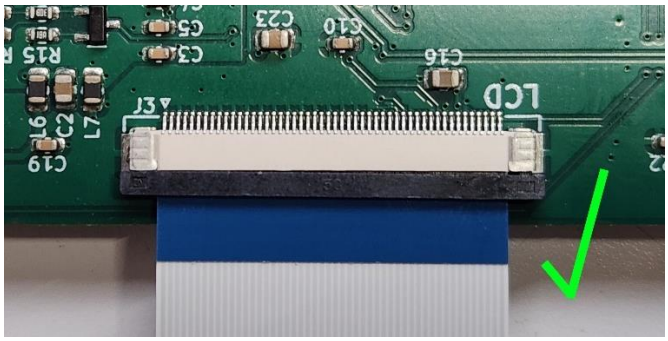
2) Insert the cable beneath the latch mechanism. Blue side goes up, shiny side down.



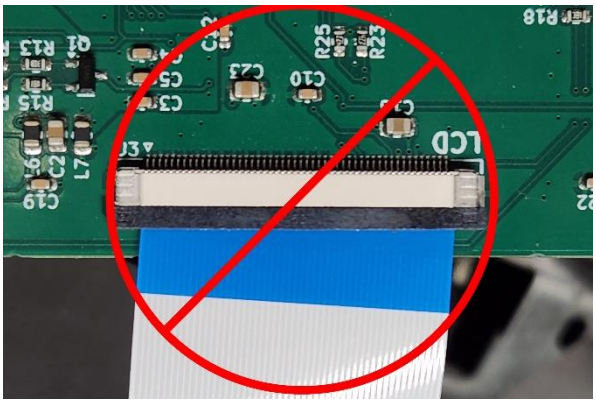


3) Slide the latch forward into the latch body evenly. This will take a small amount of force.





4) Ensure the cable is fully seated, lined up straight, and latch fully latch closed, as seen above.



FPC CABLE CARE

FPC cables are flexible and may be moderately twisted and bent to ease routing.

Please avoid hard folds as this may cause the cable to stop working.

Do not yank on the cable or try to remove it from connectors without first unlatching it.

Avoid tightly twisting the cable or pinching / cutting it.

Continued on rear

Usage

No software is required to use the card – it's plug-and-play!

The internal LCD supports a resolution of 640x480 in up to thousands of colors. The built-in CRT video will always be disabled if the LCD is installed; there is no need to remove the video ROM from the logic board.

You may connect an external monitor to the VGA connector prior to turning system power on. Do not plug VGA in while the system is powered. **To change the resolution of the external display**, open the Monitors control panel, select the 30Video monitor icon, and click the Options button. Pick the new resolution, then reboot your system.

If the selected resolution is 640x480, both the internal LCD and external monitor will have the same display contents (Mirroring). **If a higher resolution is selected, the internal LCD will turn off.**

> If your external monitor is not displaying anything or is unable to display the higher resolution, reset the PRAM (hold Command+Option+P+R while powering on) to reset monitor resolution back to default.

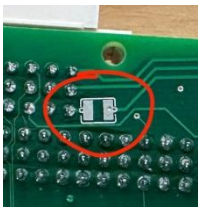
Brightness may be adjusted using the potentiometer on the rear of the LCD. An optional 10kilohm external potentiometer may be connected to the EXT_BRIGHT header on the rear of the LCD. The onboard potentiometer should be adjusted fully counterclockwise (max brightness) if using an external control.

Gamma correction will default to a linear gamma appropriate for **LCD** monitors

> You may change the active gamma table by opening the Monitors control panel, hold the option key, then click the Options button. Additional gamma tables can be created using third party software. Gamma correction is not available in Thousands of color mode, linear gamma will be used (suitable for LCD).

Other Notes

- While 256 shades of grays are supported on external VGA monitors, only 16 shades of gray will display due to hardware limitations. Thousands of grays is also a color mode due to limitations of Mac OS.
- Thousands of colors are available at 800x600 resolution, however, it is much slower than 256 color mode.
- For coexistence with other PDS cards, you may select between slot ID 9 and A using the switch on the card.
- **Users of Bolle's ethernet riser:** You **must** solder the 12V jumper on the rear of the riser, or you will not get video output from the 30Video card. See picture to right.



Compatibility notes

No compatibility issues are known at the time of writing this document.

- Supports System 6 - 8.1, A/UX (3.0, maybe others), netBSD
- Compatible with IIsi, SE/30, and third party ROMs in 24 bit and 32 bit modes.
- **Highly** recommended to have recapped logic board and recapped / retrofitted power supply.

Reporting issues

I've done the best I can to test this card thoroughly, but bugs are always possible. Please report any issues through this github repository. Updated firmware and other resources will be posted here as well, and please feel free to ask questions.

https://github.com/ZigZagJoe/30Video-Support

Happy Macing!! :)