

Technical Insights | Complete Disassembly of FANUC A61L-0001-0093 CRT to LCD Upgrade Process

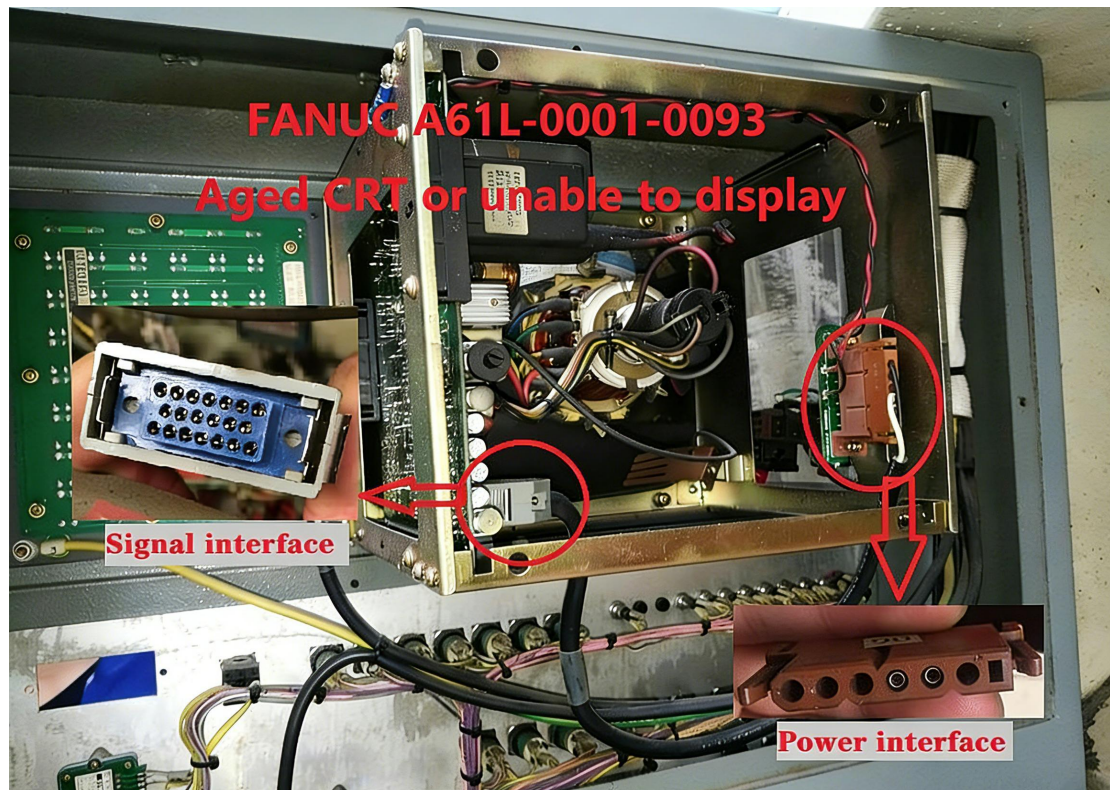
Recently, we upgraded the display of an old CNC machine in the factory, which is the classic FANUC A61L-0001-0093 CRT display. Today, I will share the complete upgrade process and actual test results with everyone, hoping to help friends who have the same trouble.

Why Upgrade Is Necessary?

This CRT display has been in service for nearly 20 years, and all typical "aging issues" have emerged:

- **Display Aging:** The screen turns yellow and characters are blurred. Workers have to lean close and squint to read coordinates, which even affects machining accuracy.
- **Safety Hazards:** The high-voltage transformer occasionally sparks, and an ozone smell can be detected in the workshop, which may burn the circuit board at any time.
- **Hard-to-Find Spare Parts:** The original manufacturer has long been out of production. The price of second-hand CRTs has soared to nearly several thousand yuan, and there is no quality guarantee.

First, let's take a look at the internal structure of this "veteran" CRT. First, confirm the model and locate the power interface and signal interface:

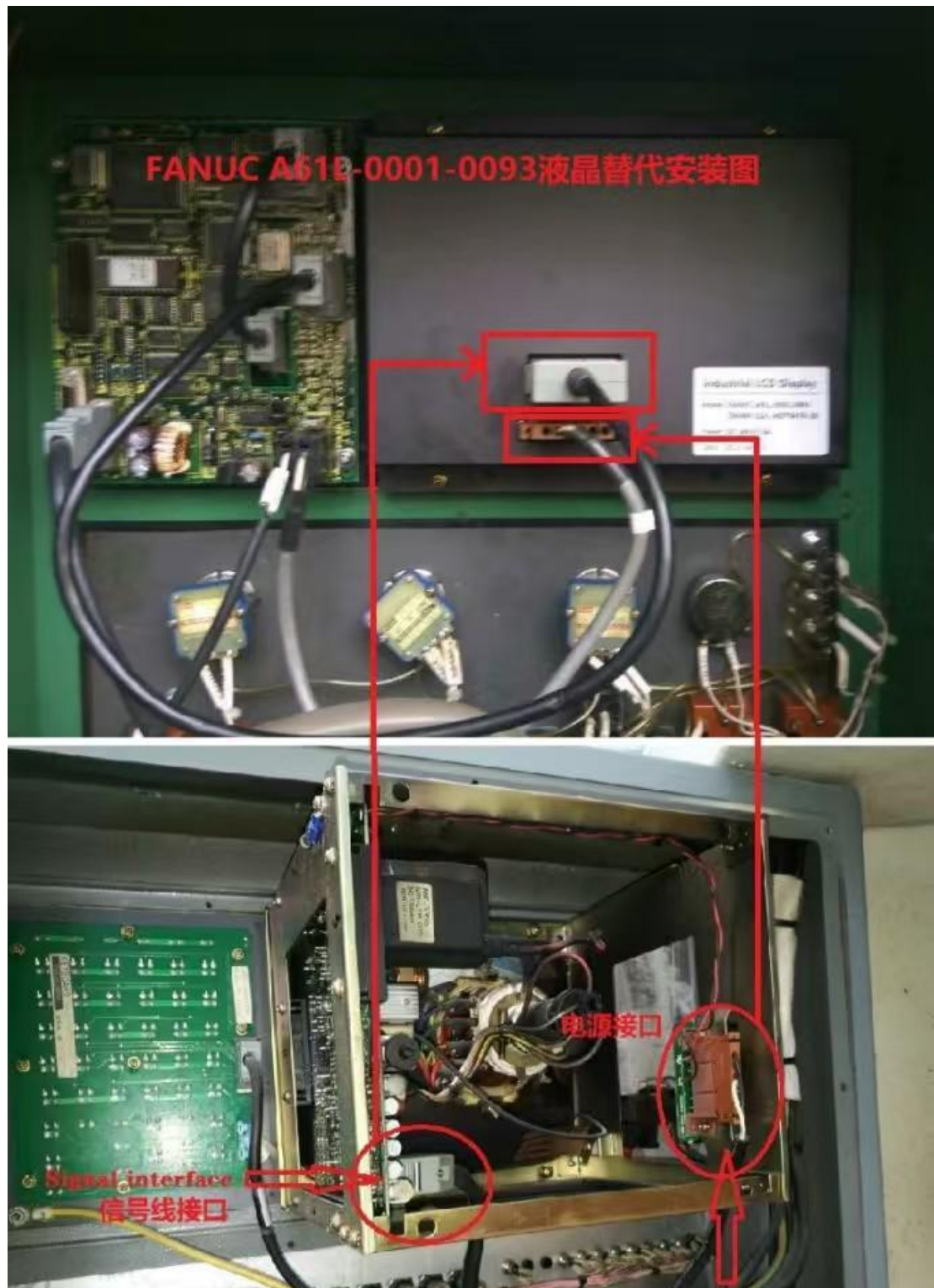


(The signal interface and power interface are marked in the figure, which are also the key connection points for the subsequent upgrade.)

✓ Upgrade Plan Selection

After comparing several plans, we finally chose the **in-situ plug-and-play LCD replacement module**, whose core advantages are very obvious:

1. **Wireless Modification Design:** The original signal interface (blue VGA) and power interface (brown) are directly connected, without modifying the equipment control circuit.
2. **Plug and Play:** It can be lit up immediately after installation, no need to re-debug system parameters, and will not affect the original program.



3. **Improved Display Effect:** Upgraded from blurred yellow characters to high-contrast clear images. For most systems, it can be directly upgraded from a monochrome yellow screen to a color screen, achieving a qualitative leap in effect. This is the LCD replacement module we selected, and its interface is completely compatible with the original CRT:

广泛用于FANUC Series 18-T,18-M,O-T,O-M,Oi-M,Oi Mate TB,Oi-MB等等系统当中



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Installation and Actual Test Effect

The entire installation process takes less than 30 minutes, and the effect after replacement can be described as "amazing":

- **Leap in Clarity:** Coordinate values, program numbers, and modal information are all clear and sharp, so workers no longer need to squint.
- **Maximum Stability:** It has been running continuously for 72 hours without screen blooming or black screen, which is much more reliable than the old CRT.
- **More Comfortable Vision:** There is no flicker of the CRT, and eyes are not easy to fatigue during long-term operation.

Let's take a look at the actual effect after the upgrade. The improvement compared with the previous blurred image is very intuitive:



We have also sorted out the actual photos of upgrade effects on different equipment, covering mainstream systems such as FANUC and Siemens:

Tips to Avoid Mistakes

4. **Check the Interface:** A61L-0001-0093 has different interface versions. Be sure to compare the pin definitions before purchasing.
5. **Keep the Original Shell:** Try to choose a module that can be installed into the original display shell to avoid damaging the overall structure of the equipment.
6. **Test Before Installation:** Power on and test the module after receiving it, and install it on the equipment only after confirming that the display is normal.
7. **Choose the Right Supplier:** Prioritize merchants that provide quality assurance to avoid buying refurbished screens.

If you also have the upgrade needs for the same old equipment, you can contact me. This plan is indeed the most worry-free choice at present.

| (注：文档部分内容可能由 AI 生成)