



Display Tune Firmware Flasher Features:

- Flash firmware for displays
- Minimum additional hardware or special cables needed
- Small footprint integrated application for fast download from the internet
- Fault tolerant logic to prevent corruption of firmware in the event of power disruption
- Supports Windows® XP, Windows Vista, Windows 7
- Supports chipsets capable of directly addressing memory
- Scalable architecture to add new product families
- Available in two implementations:
 - USB for high-end displays with a large software payload
 - Visual decoding process resident in firmware for entry- to mid-level displays

Simple, End-user Firmware Flashing

The experience of owning a personal computer, whether in the home or the office, has been greatly simplified with the advance of technology. An investment in a powerful personal computer, once a matter of 10s of thousands of dollars, is now easily achieved for an average week's wages. Beyond price drops, computers and computer-related devices have become "future proofed" and less prone to becoming antiquated immediately after purchase. One "future proofing" feature is the ability to flash the peripheral's embedded firmware, eliminating the necessity for either costly service calls or purchasing new equipment just to resolve bugs in previous models.

Until recently, displays are the single exception to this rule. Although display technology has progressed with computer technology to include large flat screens with HD capabilities, displays themselves are still released for shipment with many known issues in firmware and no means for the end user to update fixes without returning the display to the retailer or service center.

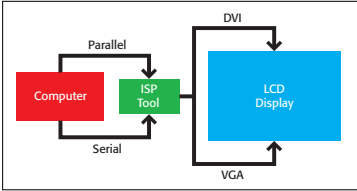
Enterprise customers are also burdened with maintenance costs associated with large purchases of displays. The corporation must deal with firmware failures on a larger scale as purchases are often done in volume for entire departments or locations. Logistics prevents the corporation from simply sending the displays back to the manufacturer for repair. Instead, the IT staff must work directly with the VAR or manufacturer to update the displays within the enterprise without impacting the day-to-day business.

The solution to resolving display software issues requires seamlessly updating firmware in the field. Firmware flashing should not require external hardware (ISP tool) or extra cables, but rather be a simple software application launched from the Operating System. The application must have fail-safe measures to prevent the process from damaging the hardware.

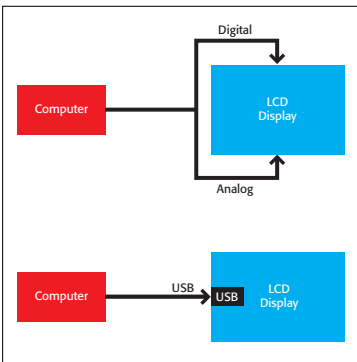
Display Tune Firmware Flasher is an application that updates the firmware of a display with minimal impact to the electrical and industrial design of the device. The application is capable of checking if the current firmware requires updating. The application has a small footprint making internet-based distribution easy and desirable. It can be made available to technical support or service department staff, or as an end-user application.



The Firmware Flasher's user interface.



Traditional firmware flashing is performed using ISP tools via a serial or parallel bus and connected via the VGA or DVI connectors to the LCD display.



With Display Tune Firmware Flasher, the end-user does not require special ISP tools connected to the LCD display, instead it directly uses the analog or digital cable, or USB, to upload the firmware to the display.

How Does Display Tune Firmware Flash Work?

Display Tune Firmware Flasher is a stand-alone/integrated application which includes the updated firmware file, Display Tune proprietary technology for communicating with the display, and a simple-to-use graphic interface to walk the user through the process. The firmware file is uploaded into the display's memory and then written directly into the flash memory.

What Hardware is needed?

Display Tune Firmware Flasher is an easy solution where the firmware of the LCD display can be flashed by the end-user at their home or office using their existing desktop or laptop Windows-based computer. No additional hardware, such as an ISP tool or special cables, is required. Integration for mass production requires only an existing USB bridge or and/or specified amount of addressable memory. In the absence of a USB bridge, specialized firmware and addressable memory are required.

How Can Display Tune Firmware Flasher Reduce Costs?

Display manufacturers can minimize return costs by providing an end-user application to update the display at the customer's site and not at the factory or service center. Service calls, shipping costs, and down time are eliminated. The user can download the application from the vendor's web site and within minutes have the display's latest firmware uploaded. In addition to lowering OEM costs, the user experiences a lower Total Cost of Ownership and a better product and brand experience.

How Does This Add Flexibility to A Display?

As with any software, updates may be required to remedy display failures in the field. Consumers are familiar with flashing devices and have come to expect it as a feature in most computer related products. They do not want to be burdened with down time due to imperfections in the display firmware. Once these failures are isolated to firmware issues, Display Tune Firmware Flasher can seamlessly resolve the issue. This "future proofing" provides an inexpensive upgrade path for the vendor, as well as peace of mind and better total product experience for the consumer.

Corporate Headquarters:

Portrait Displays, Inc.

6663 Owens Drive, Pleasanton, CA 94588

Phone: 925-227-2700 Fax: 925-227-2705

www.portrait.com

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