

# Image Writer™

## AT A GLANCE

Programs microcontrollers (Flash and EE) and serial memories on the board at any point in the manufacturing process

Programs via SPI, I2C, RS232, and other serial interfaces

Installs within test fixture for programming at ATE or test station

Can be configured as a standalone programming station

Typical implementation: one programmer per target device.

## OPEN ARCHITECTURE

Easily integrate programming process via signals from ATE system

Open architecture interfaces easily with LabView or other process control software

Flexible command set enables programming of dynamic data (serial numbers, MAC addresses etc.) in production

## DEVICE SUPPORT FROM LEADING MANUFACTURERS INCLUDING:

Altera (EEprom)    Atmel    Fujitsu  
Microchip Technologies    NEC    Renesas  
ST Microelectronics    Texas Instruments

## RAPID PROGRAMMING TIMES APPROACH MANUFACTURER'S THEORETICAL MINIMUMS

### Examples:

ATmega32	15.8 sec
MCT PIC16F684	3.5 sec
STM M95640	2.4 sec

## FILE TRANSLATION SUPPORT

All popular file formats, including:

Binary  
Intel HEX  
Motorola S-Record

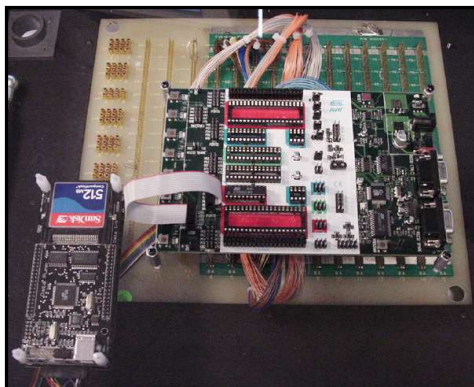
## PC OPERATING SPECIFICATIONS

Windows 2000/ME/XP recommended  
Microsoft .Net Framework 1.1  
USB Interface

**Data** *iO*

## Modular In-System Programming Solutions

**ImageWriter™** is a line of high-speed in-system programming hardware and software tools designed specifically for production environments. ImageWriter provides a fast, reliable method of programming flash-based microcontrollers and serial memory devices on a target board during the manufacturing process. With device support for the industry's most popular devices, ImageWriter provides a high throughput solution for manufacturers of automotive, consumer electronics, and industrial controls products.



ImageWriter modules can mount inside a test fixture, and activate programming on a signal from your test equipment or software application

## PROGRAM AT ANY POINT IN THE MANUFACTURING LINE

### In-Circuit Test

The ImageWriter module easily installs in any test system. Contact to target device (typically 3 to 5 pins) may be made via bed of nails, edge connector, cable and socket, or flying probe tester. To program a multi-board panel, one module per target device fits compactly into a test fixture or may be mounted into a test station.

### Program at a dedicated station

Up to 32 ImageWriter modules can be configured into a gang programming station when your process requires part or all of the programming to occur before or after board test. Board connection is made via a standard 0.1 inch, 20-pin connector.

### Scalable to meet any production volume

The ImageWriter solution is modular, serving small shops with a single programming workstation cost effectively, yet scales to provide multi-board panel programming support.

### High Speed Microcontroller and Serial Memory Programming

In volume production, programming speed is critical. ImageWriter programs target devices at high speed, made possible by unique "DataPump" technology for loading image files into target devices.

ImageWriter supports programming and special features for popular device families from leading manufacturers.

## SPECIFICATIONS

### PROGRAMMING SPECIFICATIONS

- Load, Program, Verify
- Supports Device Special Features
- Interfaces with 1.5V (and above) device technology
- Device protocols: I2C, SPI, JTAG, RS-232 (TTL & High-Voltage), other/custom serial protocols.

### PHYSICAL / ENVIRONMENTAL

- Operating voltage 9-24v DC
- Physical dimensions
  - 5" x 2.3" x 1"
  - 127mm x 58mm 25mm
- Operating temperature range: 55 to 95\* F
- Operating humidity (non condensing) 0 to 70%
- Programmer Changeout Time: 300 seconds

### FACILITIES SPECIFICATIONS

- DC Input Voltage requirements: 9-24V
- DC Input Power (max) 5 watts
- System Operating Features
- PC Interface: USB 2.0 Compliant
- System self-diagnostics

### REGULATORY COMPLIANCE



## One target board - Multiple Configurations

Many products offer varied feature sets based on a single board design with varying firmware and programmed content. With ImageWriter, multiple product configurations can be easily managed, making production line changeovers as simple as selecting a different job stored on the same ImageWriter module. When operating standalone, the ImageWriter can store up to 16 programming jobs for the selected target device. With a PC controlled configuration the number of jobs is unlimited.

## Flexible Job Management

Create a device programming job that defines one or more programming operations (erase, program, verify) on one or more arrays within a device, and the image file associated with each array. This flexibility is ideal for process optimization, and multi-step programming functions.

## Open Architecture gives you control

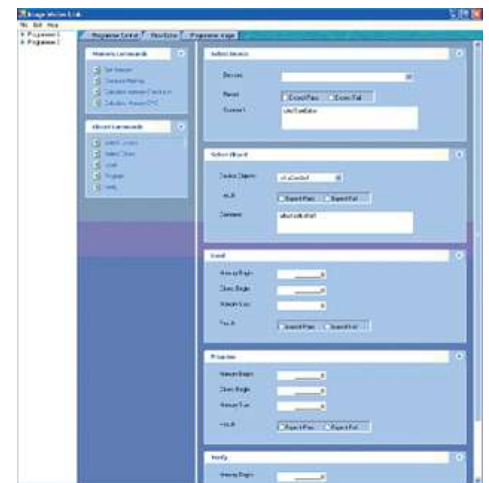
An open architecture and documented Computer Interface Language programming command set (CIL Commands) give Test Engineers the integration advantage – an ImageWriter module can be controlled directly via an ATE signal, or from any process control software such as Visual Basic, C++, or LabView, with a few hours of implementation effort. The command set enables flexible capture of programming results (pass/fail) to your database or toolsets.

## ImageWriter Tools

The ImageWriter Tool is a Windows™ Tray Application that, once installed, is easily available on the Windows Taskbar. The ISP Tray provides status of all connected ImageWriter programmers, each with an assigned COM Port. The ImageWriter Tray application handles 3 key functions:

- Algorithm loading: the device programming algorithm may be selected and loaded to the programmer using the ImageWriter Tool.
- File translation: when loading data files onto the ImageWriter Compact Flash card storage, the system auto-detect feature will recognize popular file formats (Intel HEX, Motorola S-Record, and other widely used formats) and convert them to binary images.
- Multiple binary images may be loaded on the ImageWriter flash card, up to the total size of the card.

Once the programmer is pre-loaded with algorithm and data file(s), the programmer is ready to operate. Your test program or signal from the ICT tester can initiate the programming process.



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