

image WriterTM300

AT A GLANCE

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

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

Installs within test fixture for programming at ATE or test stations

Typical installation: One programmer per target device

Can be configured for standalone, push-button operation

Device Support from top manufacturers:

Altera (EEPROM) Atmel

Microchip Technologies NEC Renesas

ST Microelectronics Texas Instruments

Rapid Programming Times approach manufacturer's theoretical minimums

Examples:

MCT PIC16F684	3.5 sec
ATMega 128	4.5 sec
STM M95640	1.4 sec

Networked Communications

Auto-addressing enables communication to all units in a networked group

Once configured, programming is initiated by a signal from ATE.

Open Software Interface

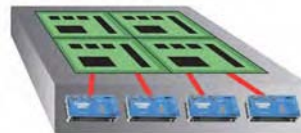
Easily integrate programming process via signals from ATE system

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

Modular In-System Programming Solutions

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



The ImageWriter-300 programmer can mount inside a test fixture, and activate programming on a signal from your test equipment or software application

Leverage your investment in Test Equipment

The ImageWriter module easily installs in any ATE board tester, including Agilent, Teradyne, and Genrad. Rather than writing expensive and time-consuming vector code, install a pre-configured ImageWriter programmer, and control programming with ATE pin drivers. 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.

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. To program a multi-board panel, one module per board fits compactly into the fixture or may be mounted on the test station.

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.

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 (known as a "FLOW") stored on the same ImageWriter module. When operating standalone, the ImageWriter can store up to 16 programming FLOWS. With a PC controlled configuration the number of FLOWS is unlimited.

Open Software Interface gives you control

Data I/O's unique Computer Interface Language (CIL) provides a command set that simplifies programmer communication and control, interfacing easily with LabVIEWTM or other process control software applications. The CIL command set consists of a limited number of easy-to-learn commands for managing data files, memory, and programming events.

An open software interface gives Test Engineers the integration advantage – an ImageWriter module can be controlled directly via an ATE signal with a few hours of implementation effort. The command set enables flexible capture of programming results (pass/fail) to your database or toolsets.

Data I/O

SPECIFICATIONS

PC Operating Specifications

- Windows 2000/X P recommended
- USB Interface
- Microsoft .NET Framework 1.1

Programming Specifications

- Load, Program, Verify
- Supports Device Special Features
- Interfaces with 1.8V (and higher) device technology & High-Voltage), other/custom serial protocols.

Physical / Environmental

- Operating voltage 9-24v DC
- Physical measurement
- 101.6x152.4x25.4mm
- 5.5"W x 3"D x 1"H
- Operating temperature range: 55 to 95° F
- Operating humidity (non condensing) 0 to 70%
- Programmer Changeover time: 300 seconds
- Self-Test Time: <30 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
- Fully Optically Isolated

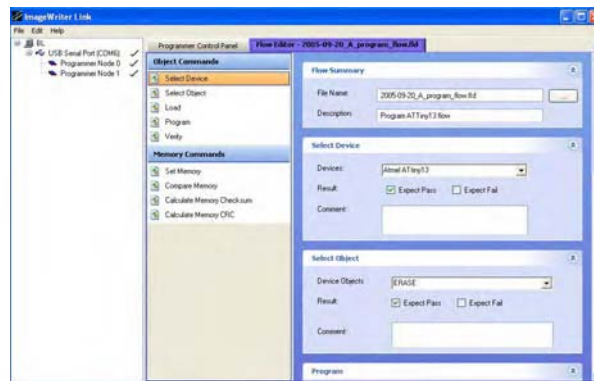
Regulatory Compliance



Fast flexible setup with ImageWriter Tool

The ImageWriter Tool is a Windows software program that provides status of all connected ImageWriter programmers, each with an assigned COM port. The ImageWriter Tool Handles 3 key functions:

- Algorithm Loading: the device algorithm may be selected and loaded to the programmer
- 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 stored on ImageWriter Compact Flash, eliminating the need for run-time PC download during programming.
- Creating "FLOWS" – object oriented precision programming control scripts.



"FLOW" – You script a Precision Programming Operation.

The ImageWriter software tool approaches device programming with the fine-grain control that a designer has when developing the firmware. The sequence of actions required to complete a programming operation – only the actions your project requires – are defined and assembled into a FLOW that resides on the ImageWriter programmer. The steps in a FLOW could include device operations (Program, Verify, Load), memory operations (Checksum, CRC-32), or system functions such as error code checking. A FLOW is created in the ImageWriter tool, then downloaded to the programmer.

A FLOW might, for example, erase the device, program the EE array with binary image #1, program the Flash array with image #2, and then program a serial number into a specific address in the device. These processes can be arranged in any sequence, and can affect a partial or full array, providing precision control and the ability to do partial programming and multi-step programming. Up to 16 FLOWS may be stored on the ImageWriter programmer, where they can be activated by a signal from the test system.

Visit www.dataio.com to read more about ImageWriter, and an application note on designing for production ISP.

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