

# **Multiple programming problems ? We have *THE* solution !**



## **With the JTAGMaster, you can:**

- Program devices/PLDs in-system (Altera, Xilinx, Lattice...)
- Program EEPROMs out-of-circuit (SPI, I<sup>2</sup>C,  $\mu$ Wire)
- Program multiple boards at the same time
- Write foolproof programming procedures

## **JTAGMaster**

### ***In-System and Standalone Programmer***

The ABI JTAGMaster is a fully integrated and powerful solution for the in-system programming of Programmable Logic Devices (PLDs) and memory devices. Standalone programming is also supported by the JTAGMaster for serial EEPROMs.

With direct applications in Electronics Production (End-of-Line) and Research & Development, the JTAGMaster is the only tool required to cover all your programming needs.



[www.abielectronics.co.uk](http://www.abielectronics.co.uk)

# What is the JTAGMaster?

JTAG (*Joint Test Action Group*) is a standard protocol which provides an access port to printed circuit boards (PCBs) and is regulated by the industry standard IEEE1149.1. One of the purposes of JTAG is to allow hardware interfaces to transfer data into the internal memory of devices whilst they are already on the PCB. Commonly, this is known as In-System Programming.

The JTAGMaster provides In-System Programming (ISP) via two standard headers based on the Altera and Xilinx models. However, a wide variety of devices can be programmed using the JTAGMaster thanks to the configurable cable provided.

The JTAGMaster is not limited to ISP and is also capable of programming serial EEPROMs out-of-circuit. The protocols supported by the JTAGMaster are SPI, I<sup>2</sup>C and Microwire.

## JTAGMaster - versatile programmer

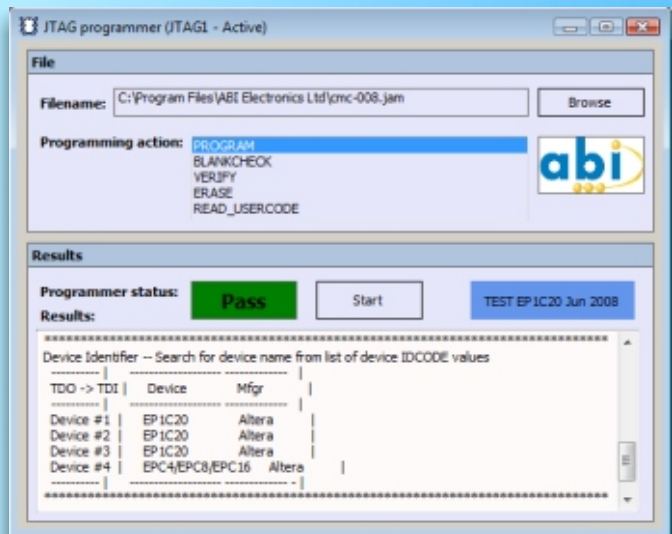
In-System Programming provided by the JTAGMaster uses the JTAG protocol to send programming, erasing and other testing instructions to ICs on the printed circuit board. The JTAGMaster supports all the devices released by Altera, Xilinx, Lattice, Cypress, Atmel and other manufacturers of devices that can be configured in-system using JTAG.

The JTAGMaster supports the file formats used as industry standards by PLD suppliers such as **SVF** (*Serial Vector Format*) and **JAM STAPL** (*Standard Test and Programming Language*).

Two interface headers are provided to allow ease of connection to a wide range of standard applications. Custom connectors can also be accessed with the configurable cable.

### Integration with your existing system

The programming capabilities of the JTAGMaster can be easily transferred to an existing setup for seamless and central operation. Individual programming applications can be called up using a standard command line tool.

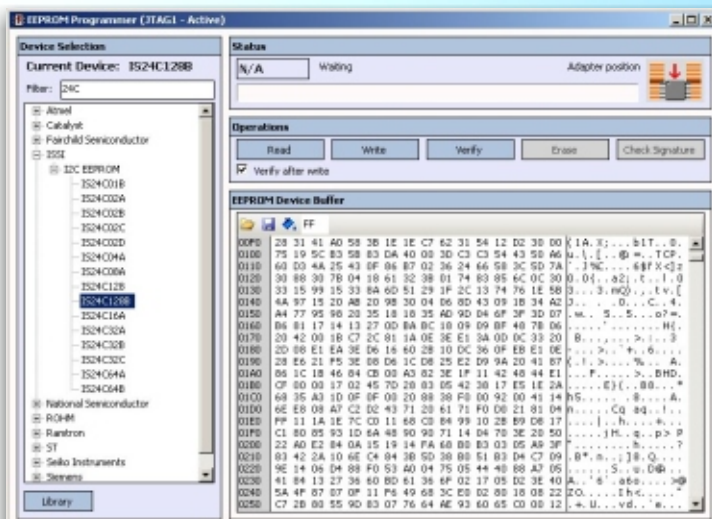
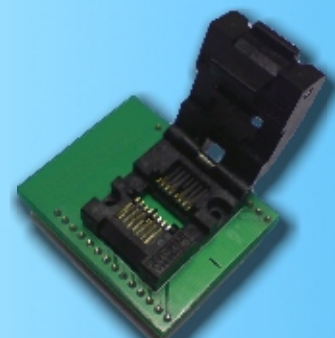


### SPI, I<sup>2</sup>C and Microwire programming

The JTAGMaster unit is also capable of programming EEPROM devices using external adapters. Standard binary files are supported and can also be modified in the device buffer window. A wide range of EEPROM devices are present in the library which can be easily updated by users.

The signals and power connections are automatically mapped by the software depending on the protocol used:

- Serial Peripheral Interface (SPI)
- Inter-Integrated Circuit (I<sup>2</sup>C)
- Microwire ( $\mu$ Wire)

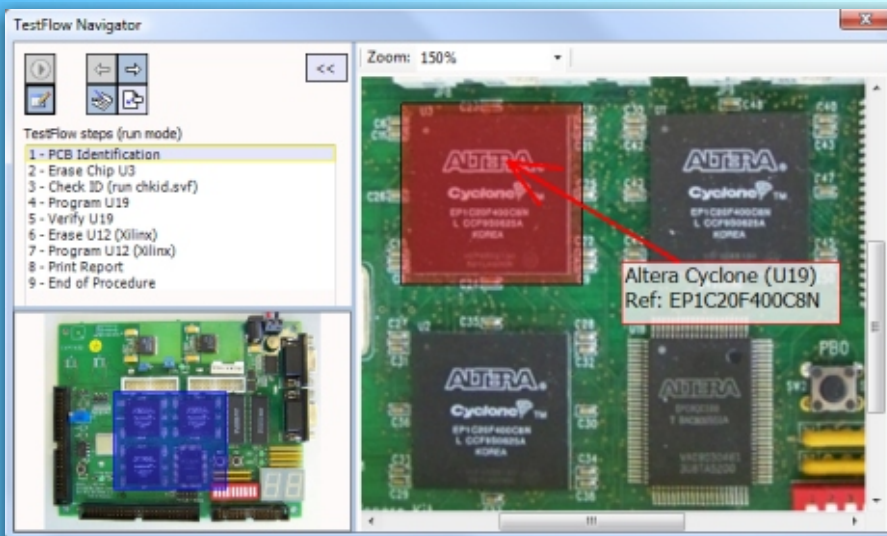


# ABI Interface Manager software (AIMs)

AIMs is a powerful and flexible platform designed for the control and operation of ABI products, including the JTAGMaster.

## Customise this software yourself!

Application windows can be redesigned to suit particular needs and levels of operators. Layouts can be rearranged and instructions, photos or schematics can be added (including PDFs and web content). Access levels can be easily managed through usernames and passwords.

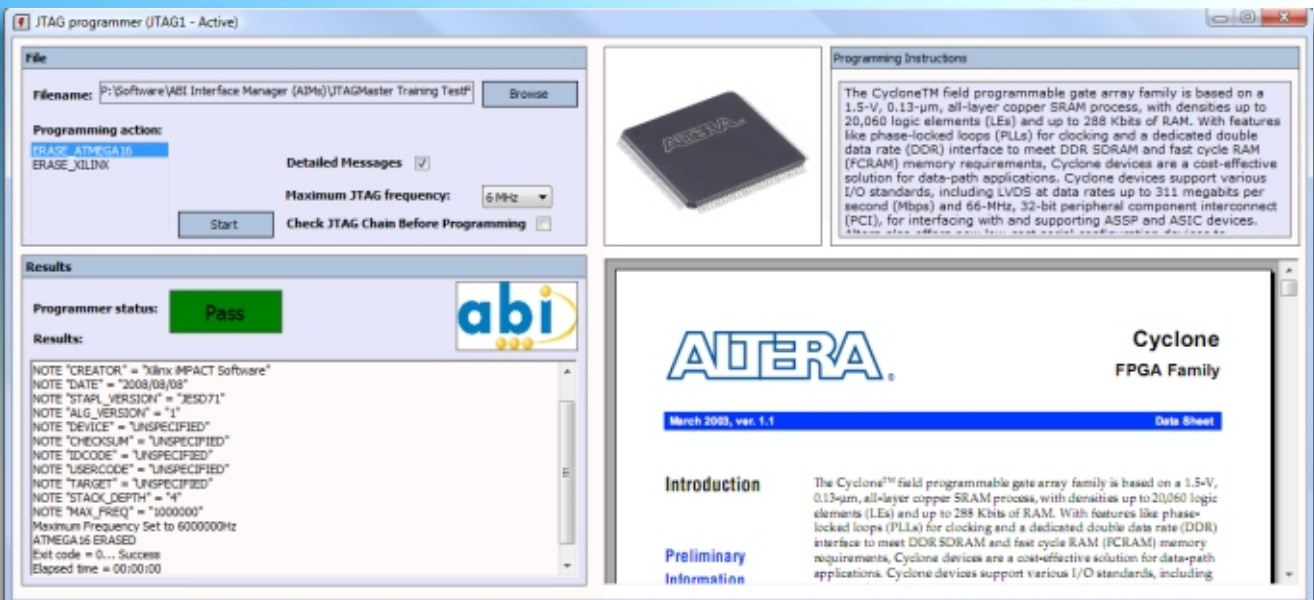


## What is TestFlow?

A core feature of the software, the TestFlow Manager, allows users to create automated programming sequences in a simple, step by step structure. Each step may be customised with photos, schematics or instructions and can be set up to carry out tasks as simple or as complex as required.

Each step of the TestFlow retains the information and the settings to guide the user through the operations. At any point during a TestFlow run, users can enter their own comments which will be included in a final report.

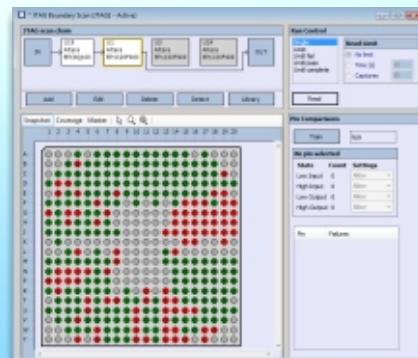
Example: Customised window for a programming application, including picture, instructions and a PDF datasheet. The JTAGMaster also includes detailed messages with a status report (Pass / Fail / Busy).



# Need more? JTAGMaster Boundary Scan Tester (Optional)

The JTAGMaster *Boundary Scan Tester* is aimed at the diagnosis and debugging of complex PCB assemblies containing single or multiple embedded devices. Using the JTAG test protocol (boundary scan), pins of each device can be individually and safely monitored to determine their functionality. This operation can be carried out on static or active boards over a pre-defined period of time. The JTAGMaster Boundary Scan Tester allows the detection of:

- Manufacturing defects  
(eg. open circuit/shorted pins)
- Logic errors  
(eg. pin failing to toggle/ faulty device)
- Programme errors  
(eg. incorrect/corrupted programme)
- Faults in external circuitry  
(eg. missing or stuck input signal)



The JTAGMaster Boundary Scan Tester is an option provided by ABI Electronics Ltd. For more information, please visit [www.abielectronics.co.uk](http://www.abielectronics.co.uk).

ABI Electronics also offers a complete training package for the full JTAGMaster range.

## Technical Specifications

### Electrical Requirements

Operating voltage: 5V (powered by USB port)  
Power consumption: 500mW  
CE approved & RoHS compliant

### Environmental Requirements

Operating temperature: 0°C to 50°C  
Storage temperature: 0°C to 70°C  
Humidity: up to 80% non-condensing

### Computer Requirements

Microsoft Windows XP™ or Vista™  
Pentium 4 or above  
Minimum RAM: 512 MB  
Hard disk space: 50MB  
USB interface port (x2)  
Mouse, keyboard & monitor

### Physical Specifications

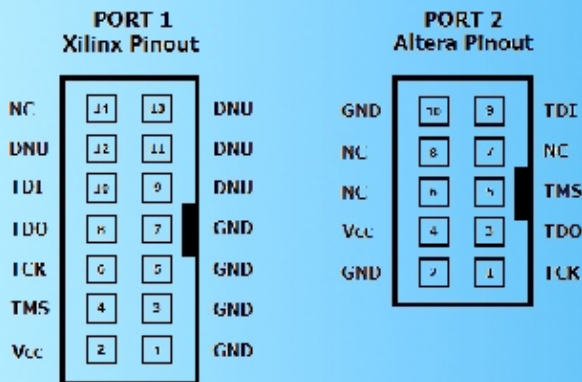
Dimensions: 83 x 52 x 16mm  
Weight: 200g

### Specifications

USB 2.0 compatible interface with PC  
Built-in power supply (1.8V to 3.3V)  
JTAG signals tolerance: 1.8V to 5V  
JTAG Baud rate up to 6 Mbits/sec

### Included Accessories

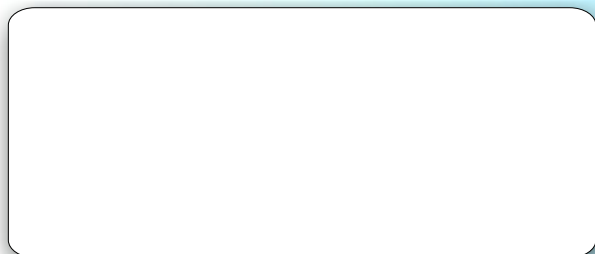
10-pin and 14-pin ISP interface cable assembly  
14-pin configurable ISP interface cable assembly  
USB cable  
Software CD (AIMs, drivers, manual)  
Activation dongle



TDI - Data to device  
TDO - Data from device  
TCK - Clock signal  
TMS - JTAG stage machine control  
Vcc - Target power supply  
NC - Not connected  
DNU - Do not use



Your Local Distributor:



**ABI Electronics Ltd**  
Dodworth Business Park  
Barnsley S75 3SP  
South Yorkshire  
United Kingdom  
Tel: +44 (0) 1226 207420  
Fax: +44 (0) 1226 207620  
[www.abielectronics.co.uk](http://www.abielectronics.co.uk)