ABI Electronics

Test & Measurement Systems

EXTENDING THE LIFE OF YOUR PCBs SINCE 1983

WELCOME TO ABI

ABI Electronics offers unique time-saving and flexible products which are used by companies operating in a wide range of sectors. ABI's fully integrated hardware and software solutions allow our customers to take control over their electronic maintenance requirements, automate quality tests on new products and generate schematics for legacy equipment.
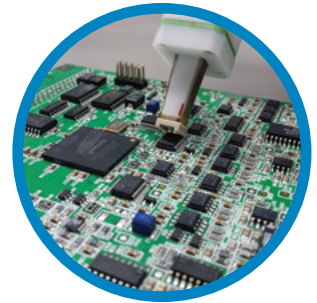
MANUFACTURING

MASS TRANSIT

ARMED FORCES

MAINTENANCE

AEROSPACE

OIL & GAS

AUTOMOTIVE

EDUCATION

ABOUT
US

ABI Electronics has designed and manufactured high quality test, diagnostic and measurement instrumentation in the UK since 1983. ABI's range of products are commonly used in the test and maintenance of highly complex systems across a variety of industries and applications worldwide. Customers choose ABI products for their flexibility, affordability and time-saving features.

The company founders developed the world's first low cost test solution for integrated circuits that turned into a great success amongst engineers in the UK and abroad.

ABI has now over 40 years experience of developing the highest quality testing and fault-finding equipment, backed by a global reputation for quality and service. It is also certified in accordance with ISO 9001-2018.

Over all these years, ABI has remained loyal to its principle of full design and build high quality products in the UK.

CHANGING VALUES & BEHAVIOUR IN THE INDUSTRY

Created in 2015, ABI's initiative 'Repair, don't waste' has become a global movement aimed at increasing awareness to the benefits of industrial electronics repair over replace across the business spectrum. The "Repair, don't waste" movement has reduced waste, downtime and created quality job opportunities around the world.

WHAT CUSTOMERS SAY

"We are proud to join the #RepairDontWaste community." The whole world stands to profit massively from industrial electronics being kept going for longer.
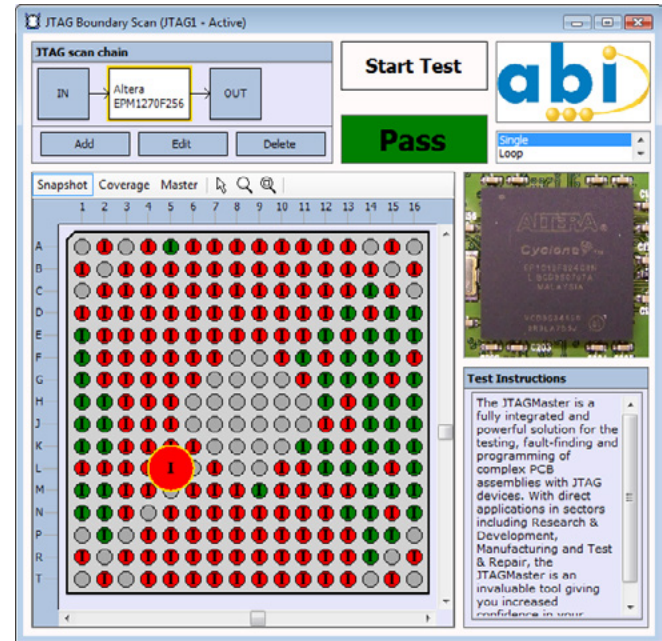
Collins Aerospace

Join the **#RepairDontWaste** community and keep up to date with our latest news.

Find out more at **RepairDontWaste.com**

THE
EQUIPMENT | **JTAGMaster**

Complete and powerful solution for the testing, fault finding and in-system programming of complex PCB assemblies featuring JTAG-enabled devices.

User Interface

APPLICATIONS

- Field Service Engineering
- Production Engineering
- Design Engineering
- End of Line Testing
- Test Engineering

KEY FEATURES

- INDIVIDUAL PIN MONITORING WITH GRAPHICAL INTERFACE
- NON INTRUSIVE TESTING DURING NORMAL PCB OPERATION
- EXTEST MODE FOR THE MANUAL CONTROL OF PINS
- RECORD AND COMPARE DATA ON COMPLETE JTAG CHAINS
- GENERATE DOCUMENTED TEST SEQUENCES

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^2C and Microwire.
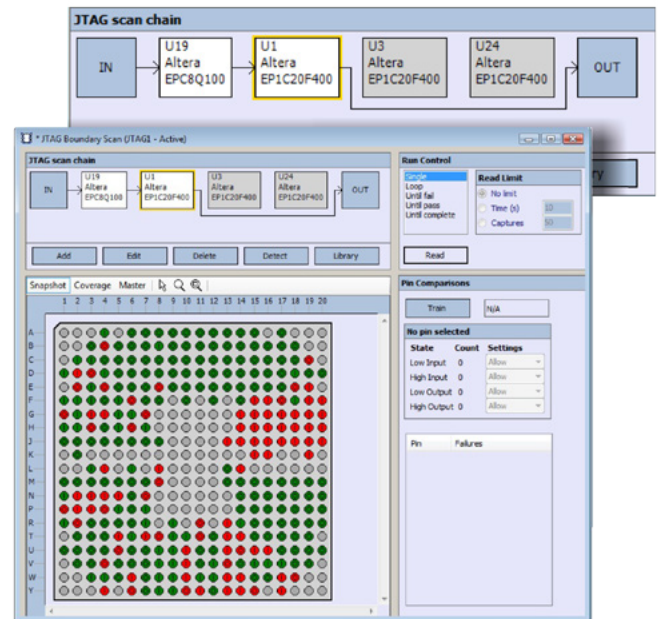
QUICK AND EASY BOUNDARY SCAN TESTING

The JTAGMaster is aimed at the diagnosis and debugging of complex PCB assemblies containing single or multiple embedded devices.

Using the boundary scan test protocol, 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.

Devices in the chain can be bypassed

TEST COVERAGE

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

Increase test coverage
by accessing components
that cannot be probed

· PROGRAM DEVICES IN-SYSTEM IRRESPECTIVE OF THE MANUFACTURER
· INTEGRATE THE JTAGMASTER EASILY INTO YOUR EXISTING SETUP
· IMPLEMENT THIS SOLUTION AT ALL LEVELS, FROM R&D TO PRODUCTION

Automatic Functionality

Various automatic functions and access levels are available with JTAGMaster :

Automatic Chain Detection reduces the time consuming process of identifying devices.

Automatic Training lets the software learn the status of the board by itself although manual intervention is also possible.

Automatic Data Comparison for quick evaluation with pass or fail results.

TestFlow Manager for easy to follow test sequences with data capture and report facility.

EXTEST Mode

This mode of testing, supported by the JTAGMaster, allows users to gain control of the pins of devices on the chain. The state of individual pins can be changed between output high or low and the resulting effect can be traced and monitored on other pins. The effect of changing pin states may be checked on the same device or on other devices on the chain.
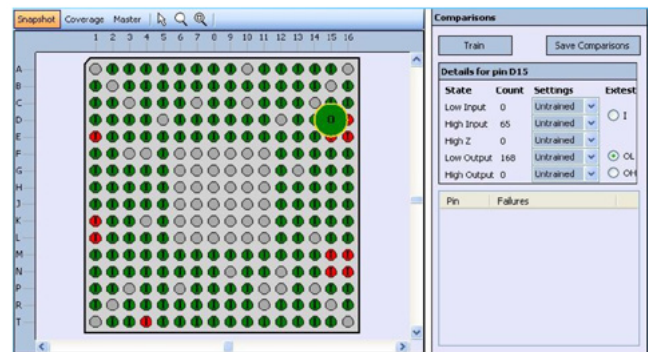
In-system programming (ISP) is provided with the JTAGMaster which uses the JTAG interface to send programming and testing instructions to the device on the board. The JTAGMaster supports all the devices released by Altera, Xilinx, Lattice, Cypress, Atmel and all other manufacturers of devices that can be configured insystem using boundary scan (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).
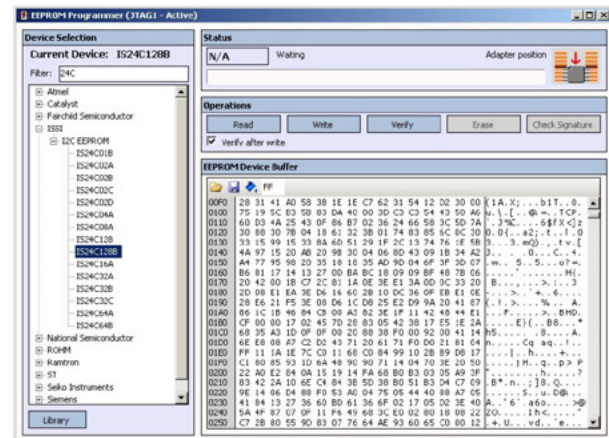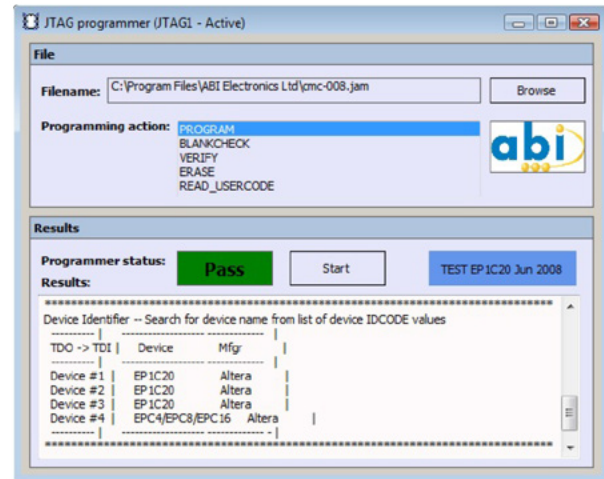
Integration with your existing system

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, I²C 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.
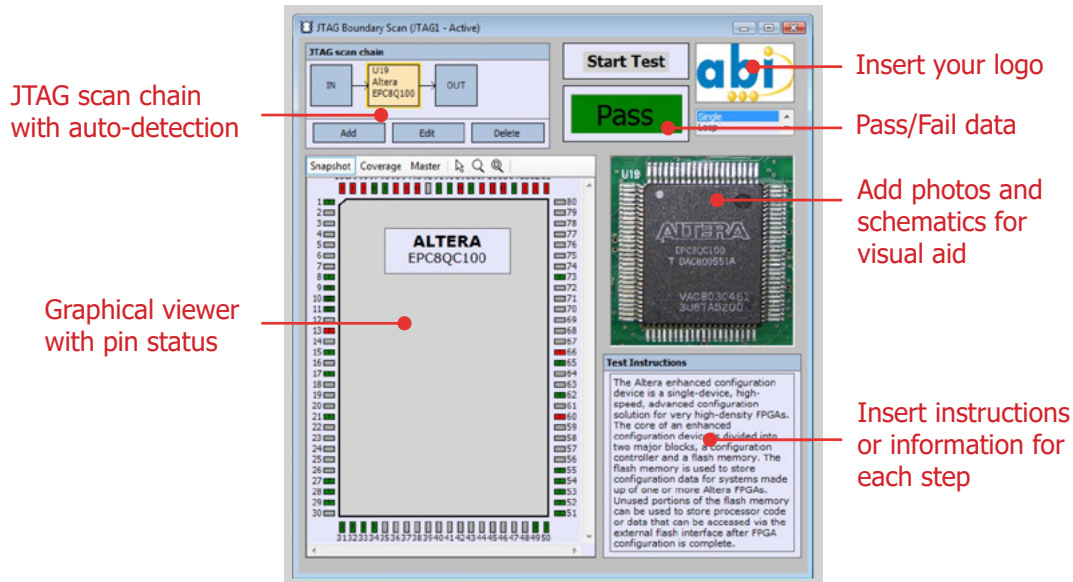
A wide range of EEPROM devices are present in the library which can be easily updated by users. The signals and power connections are automatically mapped by the software depending on the protocol used:

- Serial Peripheral Interface (SPI)
- Inter-Integrated Circuit (I² C)
- Microwire (μWire)

ABI Interface Manager Software **(AIMs)**

Customise this software yourself!

JTAG scan chain with auto-detection

Graphical viewer with pin status

Insert your logo

Pass/Fail data

Add photos and schematics for visual aid

Insert instructions or information for each step

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

- 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.

- Access levels can be easily managed through usernames and passwords. The internal library can be updated through BSDL files available from manufacturers' websites.

- AIMs also gives you the option to design custom packages for a better representation of your ICs in the graphical viewer.

Electrical Requirements

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

Physical Specifications

Dimensions	83 x 52 x 16 mm
Weight	200g

Environmental Requirements

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

Included Accessories

10-pin ISP interface cable assembly

14-pin configurable ISP interface cable assembly

USB cable

Software CD (with drivers and user manual)

Activation dongle (USB)

TECHNICAL

SPECIFICATIONS

*The ABI development team strive continually to improve their products for the benefit of the customer.
The specification of current products may therefore vary from that described in this flyer.

OUR
CLIENTS

ABI products are used all over the world by companies operating from railway, automotive, aerospace and heavy industry to armed forces, industrial maintenance and education.

SUPPORT

We are here to help!

Customer service is part of our commitment to continued quality and product development. We always strive to provide quick and efficient support to our customers worldwide. Service, maintenance and upgrades are available for our range of products as well as customised solutions to suit special requirements.

Tech Support

Direct access available to technical support from ABI's engineering team based in the UK and from our global distributors.

Upgrades

Stay current with free upgrades to software and maintenance releases.

Global reputation for quality and service

ABI Electronics is certified in accordance with ISO 9001-2018. The system is based on an ongoing commitment to quality, professional fulfillment of duties and constant expansion and development.

Certificate nº: 3133

ABI Training and Certification

We are also committed to meeting every customer's training needs. We offer a range of training courses, complete with hands-on opportunities, which can be delivered in house or on-site.

CONTACT US!

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