



Comprehensive PCBA Testing

XJTAG

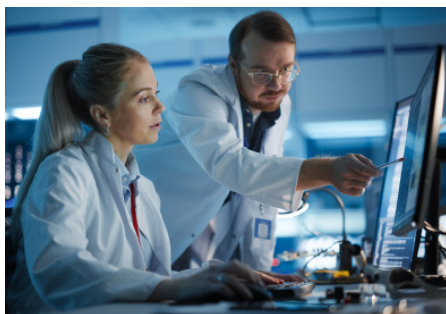
Fault Finding

Diagnosis

In-System Programming



XJTAG Boundary-Scan Software



XJTAG offers a range of software packages to meet your company's needs.

Test Developer Pro contains XJTAG's full suite of boundary scan applications – XJDeveloper, XJInvestigator, XJRunner and XJAnalyser.

Test Developer Pro + XJIO has all these software applications plus an XJIO board. This allows you to improve coverage by testing all the way through the connectors on your board.



XJDeveloper

Test and Programming Development & Debug Environment

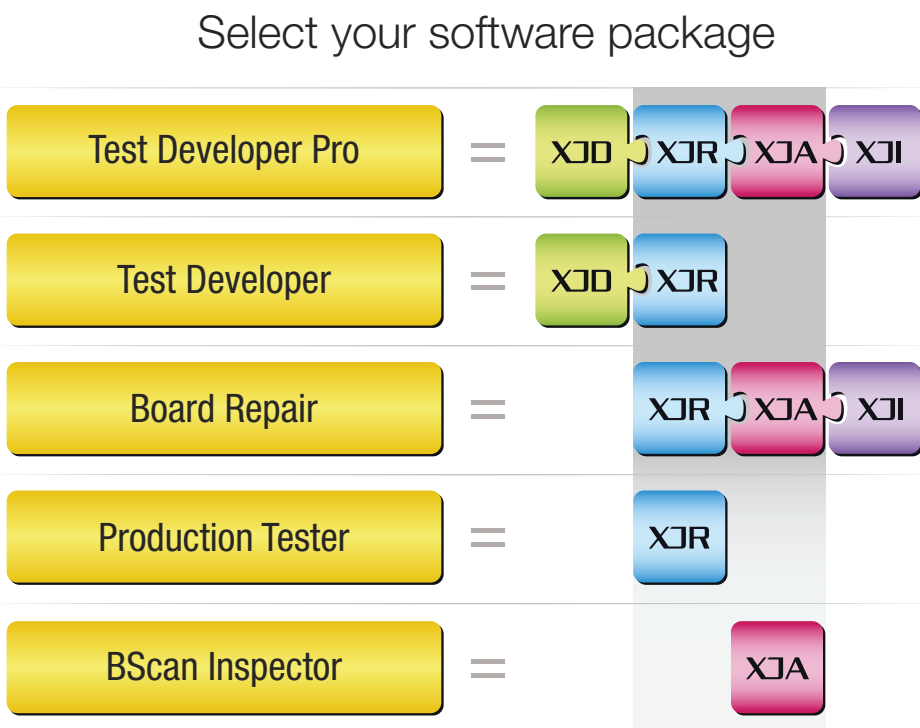
XJDeveloper's intuitive IDE makes it quick and easy to set up your tests for a circuit board.

An automatically generated connection test will check for short circuit faults between accessible nets, stuck-at faults, pull resistor faults and some open circuit faults.

You can add further test coverage by using the built-in library of test models to interact with non-JTAG devices such as Flash, RAM, Ethernet, A/D, Logic, I²C, SPI, PCI, etc.

Tests can be set up as soon as board design is complete, and a test coverage report produced. This process highlights certain design issues when they are still easily fixed, before building prototypes.

The integrated XJRunner allows you to run the full test system during board bring-up. A standalone XJRunner license is also included so you can test deployment before sending to production.



Standalone versions of XJRunner and/or XJAnalyser are also included with your integrated environment's license



XJInvestigator

Manufacturing Repair/Rework Station

Much more than a production line test tool, XJInvestigator is a repair focused, integrated test and debug environment for fault analysis, helping you efficiently recover failing boards.

XJInvestigator has all of the features of XJRunner and XJAnalyser plus extra debug features from XJDeveloper (see the XJInvestigator product sheet for more details).



XJAnalyser

Prototype Board Bring-up & Real-time Graphical Board Debug

Using the graphical interface you can interact with devices in your JTAG chain to debug your boards. You simply click on a pin to control its state – no code required.



XJRunner

Run-time Manufacturing Test & Programming Environment

XJRunner allows you to execute XJDeveloper tests. Provides high precision fault information, including integrated Layout and Schematic Viewers, to help you with easy fault-finding.

Privilege levels ensure that users see a suitable interface, and can prevent tests being skipped. Log files are produced for audit/QA purposes.

You can use XJRunner for parallel testing and programming using auxiliary controllers or an XJQuad.



JTAG Chain Debugger

Helps you troubleshoot a faulty JTAG chain. Checks JTAG signal integrity, calculates max. JTAG clock speed. Included with all packages.



XJFlash

Using the optional XJFlash module you can improve flash programming speeds up to 50-fold with certain flash/FPGA configurations.

XJTAG Boundary-Scan Hardware



Select your hardware features

XJTAG is easy to use on multiple machines. Licenses are not locked to a PC; they can be stored in the hardware interface or taken from a network license server, while any of these portable hardware options allow you to connect your computer with your circuit.

- Frequency measurements
- Voltage banks
- Voltage measurements
- Number of JTAG controllers
- TAPs per JTAG controller
- GPIO on pins
- TCK frequencies up to (MHz)
- Digital Oscilloscope
- Spectrum Analyser
- Waveform & Function Generator
- Serial Protocols Analyser

Hardware features												Connection		
XJLink2	Benchtop development and test	✓	✓	✓	1	4	✓	166						USB
XJQuad	Production	✓	✓	✓	4	4	✓	166						USB
PXI-XJLink2	LabVIEW integration	✓	✓	✓	1	4	✓	166						PXI
XJLink2-3030	High volume / test integration	✓	✓	✓	1	4	✓	166						SPEA 3030
XJLink2-3070	High volume / test integration	✓	✓	✓	1	4	✓	166						Keysight Utility Card
XJLink2-CFM	High volume / test integration	✓	✓	✓	1	4	✓	166						Teradyne TestStation
Expert ADF-2	Legacy project support	✓	✓	✓	1	4	✓	166	✓	✓	✓	✓		USB
XJLink	Legacy project support				1	1		50						USB



XJLink2

XJLink2 is an enhanced, portable USB JTAG controller with configurable pin-out.

The small, lightweight design means an XJLink2 can easily be taken to the Unit Under Test (UUT), while a number of advanced features make it easy to connect to a wide range of circuit boards.



XJQuad

XJQuad is a 4-port version of the XJLink2 USB-to-JTAG controller. It is particularly suitable for volume production testing.

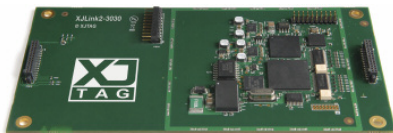
XJQuad can be used for testing four boards simultaneously or independently. It is supplied with XJRunner software.



PXI-XJLink2

PXI-XJLink2 allows you to easily use XJTAG in PXI-based test systems.

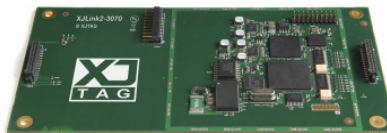
A full set of integration interfaces and examples are installed with XJTAG to allow easy integration into test executives such as LabVIEW™ and LabWindows™ or bespoke .NET applications.



XJLink2-3030

XJLink2-3030, approved by SPEA, allows you to easily use XJTAG in SPEA 3030™ ICT bed-of-nails board testers.

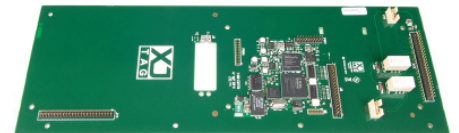
It fits into one slot on the SPEA 3030 XJLink2 Carrier Board and is fully integrated into the SPEA Leonardo environment.



XJLink2-3070

XJLink2-3070, approved by Keysight Technologies, allows you to easily use XJTAG in Keysight i3070™ ICT machines.

It fits into one slot on the Keysight (Agilent) i3070 utility card and is fully integrated into the BTBasic environment.



XJLink2-CFM

XJLink2-CFM allows you to easily use XJTAG in Teradyne TestStation™ ICT machines.

XJLink2-CFM fits into one slot on the Teradyne Multi-Function Application Board.

XJIO is a test expansion board with 208 digital I/Os, 8 ADC, 8 DAC, RS232 / UART, buttons and LEDs. It allows you to improve fault isolation, verify power rail levels, and replace costly custom test jigs – even for non-JTAG boards.



Seven reasons why you should use XJTAG to test your boards

Three simple letters – BGA

An increasing number of devices are supplied in Ball Grid Array (BGA) packaging. Each BGA device on a board imposes severe restrictions on the testing that can be done using traditional bed-of-nails or flying probe machines.

Using a simple four-pin interface, JTAG boundary scan allows the signals on enabled devices to be controlled and monitored without any direct physical access.

Lower test development / NRE costs

As different processors and FPGAs interact with peripherals in different ways, traditional functional test requires costly custom development for each board. JTAG boundary scan significantly reduces such development costs because it provides a simplified interface to control the I/O pins used for peripheral interactions. This standard interface is the same for all JTAG-enabled devices, allowing the use of a generic set of reusable test models when building test systems.

The non-recurring engineering (NRE) expenses of building test fixtures can be prohibitively high. In many cases, using JTAG boundary scan will remove the need for such a fixture, in other cases the fixture can be dramatically simplified resulting in significant cost savings.

Shorter test times

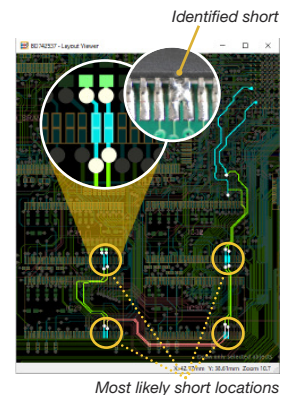
For boards with low production volumes it has always been difficult to justify the cost of test fixture development. Flying probe testing can be one alternative, however, the test cycle times tend to be high. JTAG boundary scan testing gives fast test times with no need for a costly fixture.

Production-level benchtop tests for prototypes

Traditional test technologies require very large and expensive equipment. The only test equipment required for JTAG boundary scan testing is a JTAG controller – XJTAG's XJLink2 controller is a similar size to a PC mouse.

Excellent fault diagnostics

JTAG boundary scan, unlike functional test, provides high precision fault information to help with rapid repair. XJTAG also provides the capability to view both the physical location of a fault on the layout of the board and the logical design of the area of the circuit in which the fault exists on the schematic.



One tool for test and programming

JTAG is often already used as one step in production: programming. By also using JTAG for boundary scan test it is possible to reduce the number of steps and handling operations in the production process.

Recover boards that are 'dead' to functional test

XJTAG boundary scan tests can be run on any board with a working JTAG interface. Traditional functional tests cannot be run if the board does not boot; simple faults on key peripherals, such as RAM or clocks, would be found using JTAG but would prevent functional tests from providing any diagnostic information.

“XJTAG offers incredible power, performance and versatility...”

ARM – Andy Evans,
Sr Product Engineer, Platforms,
Development Systems

“We selected the XJTAG system due to its price, the speed and accuracy of fault diagnosis...”

Curtiss-Wright – Alan McCormick,
MD, Video and Graphics Group

“XJTAG has features that are vastly superior to other systems I know...”

Eaton – James Diem,
Test Engineering Manager

“XJTAG is easy to use, highly effective and flexible... The reuse of tests is a big time-saver.”

Saab – Eduard Stander, Controllers
Group, Electronic Defence Systems