XJTAG SLASHES DESIGN COSTS AND SHORTENS DEVELOPMENT CYCLES

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Wednesday, 2 July 2003

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* XJTAG's powerful and easy-to-use Development System can cut costs through the product life cycle from pre-design to field support and repair

* XJTAG provides the design engineer with early prototype testing of a circuit that includes BGAs, SDRAMs, Ethernet controllers, video interfaces etc. XJTAG also enables In-System Programming of FPGAs, CPLDs, flash memories etc.

* XJTAG scripts are re-usable and portable across different boards due to XJTAG's device-centric approach enabling a 'fast track' development and prototyping process

* Early adopters of XJTAG include, among others, ARM, Cambridge Broadband, IPWireless, Pandora International, Thales Communications UK, and TTPCom.

CAMBRIDGE, England, July 2, 2003 - XJTAG Limited (www.xjtag.com), a specialist design and test tool developer and part of the Cambridge Technology Group, has released version 1.0 of its highly acclaimed XJTAG Development System, designed to cut the cost and shorten the development cycle of electronic products.

"With the continuing trend towards smaller, more tightly packed circuit boards and the widespread use of BGA (Ball Grid Array) and chip scale packaging, design verification and circuit test is becoming a greater and greater challenge," said Dominic Plunkett, chief technology officer, XJTAG Limited.

"Traditional methods of fault location become impossible when many tracks are inaccessible to oscilloscope probes and logic analysers. Even getting a processor running might require a large part of the circuit to be operational before test software can be executed. XJTAG solves this by utilising the often underused JTAG port allowing the circuit to be tested with only power and a handful of connections operational."

The XJTAG Development System provides a unique solution that can test JTAG as well as non-JTAG devices. XJTAG can test a high proportion of the circuit including BGA and chip scale devices, SDRAMs, Ethernet controllers, video interfaces, flash memories, FPGAs (Field Programmable Gate Arrays),

microprocessors and many other devices. XJTAG also enables In-System Programming of FPGAs, CPLDs (Complex Programmable Logic Devices) and flash memories.

The powerful and easy-to-use XJTAG Development System provides a fully-integrated environment which can migrate seamlessly through the product life cycle from early design to field support and repair. XJTAG enables circuit designers to shorten the development cycle and prototyping process by facilitating early test development, early design validation of CAD netlists, fast generation of highly functional tests and test re-use across circuits that utilise the same devices.

XJTAG test scripts are also re-usable and portable across different boards due to the novel device-centric approach that the designers have adopted. Re-usable device tests and the abstraction of device tests from both circuit detail and complexity of JTAG (Joint Test Action Group), mean that designers can quickly develop systems to debug elements of their designs and to functionally test early prototypes. The test systems developed can then be taken forward seamlessly to production testing and through into field support and repair.

"Our XJTAG Development System is designed by engineers for engineers and represents a major advance in testing techniques bringing unparalleled integration, test re-usability and programming flexibility to circuit developers," added Dominic Plunkett. "Our tools are designed to help circuit designers, particularly those using BGAs, to minimise the time it takes to move from a concept to a design that is tested and ready for production."

The XJTAG Development System includes - XJAnalyser, XJEase, XJLink and XJDemo.

XJAnalyser is a powerful tool for circuit visualisation that provides a simple graphical view of the state of all JTAG pins. Its 'plug and play' configuration provides instant JTAG chain verification and allows a developer to interact with the circuit and view and set the values of pins or buses on devices in the JTAG chain. It also identifies the correct Boundary Scan Description Language (BSDL) files from its library ahead of running tests.

XJEase is the high-level, BASIC-like test description language for

manipulating non-JTAG devices. Unlike other JTAG tools it is device rather than board-centric. This enables circuit developers to re-use XJEase scripts in different projects. XJEase also allows the use of loops, jumps and variables to adapt test sequences to the current state of the circuit.

XJLink is a USB 2.0 hardware module used to connect the computer with the unit under test and supports multiple JTAG chains. Finally, XJDemo is a fully populated demonstrator board with tutorial designed to provide the developer with a rapid understanding of the XJTAG system and how to simulate faults.

Version 1.0 of the XJTAG Development System is available from July 2003 and is priced extremely competitively. "Our strategy is to price the XJTAG Development System to encourage multiple sales per company," said Dr Gordon Hollingworth, head of XJTAG development. "We want developers to share test scripts and that will only happen when XJTAG is ubiquitous and available on every hardware and software developer's computer and not just restricted to specialist workstations."

Feedback from developers with access to a pre-release version of the new Development System has been very positive. One example, ARM in Cambridge, invested in XJTAG for use in the design and testing of future Integrator development boards and reduced the board development cycle significantly due to the ability to re-use existing test scripts. Other early adopters of XJTAG include Alphamosaic, Cambridge Broadband, IPWireless, Pandora International, Thales Communications UK and TTPCom.

"Whilst XJTAG offers huge potential benefits to product designers, test and field engineers, there has also been significant interest from manufacturers of non-JTAG devices keen to build design for test (DFT) capability into their components," added Plunkett. "Just as JTAG device manufacturers provide BSDL files for developers, it is possible, and much more cost effective than redesigning a device to make it JTAG-enabled, that non-JTAG device manufacturers could provide a XJTAG script with their components. This would be attractive to developers and a good selling point for a device manufacturer."

For more information about Version 1.0 of the XJTAG Development System, please contact XJTAG Limited, The Irwin Centre, Scotland Road, Dry Drayton, Cambridge CB3 8AR, U.K. Telephone +44 (0) 1954 211244, facsimile +44 (0)

1954 211565 or email info@xjtag.com. Alternatively visit www.xjtag.com.

About XJTAG (www.xjtag.com)

XJTAG Limited is a specialist design and test tool developer. Its JTAG (Joint Test Action Group) development system offers a competitive solution for designers and developers of electronic circuits. Utilising XJTAG allows circuit development and prototyping process to be shortened significantly by facilitating early test development, early design validation, fast development of functional tests and test re-use across circuits that utilise the same devices. The company is based in the U.K. at The Irwin Centre, Dry Drayton, Cambridge, U.K.

About the Cambridge Technology Group (www.cambridgetechgroup.com)

Cambridge Technology Group is a holding company with three wholly owned subsidiaries - Adiabatic Logic Limited, Cambridge Technology Consultants Limited and XJTAG Limited. Adiabatic Logic (www.adiabaticlogic.com) was set up to exploit a portfolio of secured patents in the low power technology arena. Adiabatic Logic's patented Intelligent Output Driver (IOD), launched in May 2003, delivers significant (up to 75%) power savings in chip I/O for portable devices such as laptop computers, personal digital assistants (PDAs), MP3 players and smartphones.

Cambridge Technology Consultants (www.camtechconsultants.com) offers its clients - companies such as ARM, AT&T, BOC Edwards, Celoxica, Co-operative Group, Fujitsu, Marconi, Mitsubishi Electric and IPWireless - a broad range of services from high-end applications to innovative product development and technical consultancy skills. For ten years, its multi disciplinary team of hardware and software engineers have provided cost-effective solutions from concept through to pre-production.

What is JTAG?

Advances in silicon design, such as increasing device density and, more recently, ball grid array (BGA) and chip scale packaging, have reduced the efficacy of traditional electronic circuit testing methods. In order to overcome these problems and others; some of the world's leading silicon manufacturers combined to form the Joint Test Action Group (JTAG). The findings of this group were used as the basis for the Institute of Electrical and Electronic Engineers (IEEE) standard 1149.1: Standard Test Access Port and Boundary Scan Architecture and subsequently the standard

became known as JTAG.

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