

# Q10: TALKING HEADS

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Ben Fountain poses the questions to Simon Payne, CEO at XJTAG

## 1. What is JTAG? Who is it used by and why?

JTAG stands for Joint Test Action Group and is the usual name for the IEEE 1149.1 standard entitled Standard Test Access Port and Boundary-Scan Architecture. JTAG or boundary scan testing allows a high proportion of populated printed circuit boards - particularly those featuring ball grid array (BGA) chips - to be tested without using test probes. JTAG or boundary scan testing is used predominantly by design, test and manufacturing engineers.

XJTAG is the name of our IEEE 1149.1 boundary scan development system which provides a test solution across the whole product life cycle from design to manufacture and servicing.

## 2. What differentiates XJTAG from its competition?

The cost of test in development is now becoming a critical factor and needs to be considered earlier in the design cycle - even before any hardware is produced. XJTAG provides a test solution across the whole product life cycle, and by providing reusable code and the ability to test JTAG-enabled and non-JTAG devices, the test development time and cost is reduced. There are very few solutions on the market that take this approach.

XJTAG also offers customers a 30-day FREE evaluation of the full XJTAG boundary scan development system (apply online at: [www.xjtag.com](http://www.xjtag.com)) which enables engineers to try out the system on their own printed circuit boards before deciding to make a purchase.

## 3. Is the market for boundary scan technology growing?

The increased density of boards and the trend towards ball grid array (BGA) packages is driving a worldwide demand for boundary scan systems. This market growth is backed up by Frost and Sullivan researchers who analysed the world market for printed circuit automatic test equipment, and found that boundary scan test solutions would be an important factor driving growth from US\$970.1 million in 2004 to US\$1.55 billion by 2011.

## 4. Does boundary scan always spot problems with component circuitry?

No test solution can test all of a design but as XJTAG tests both JTAG and



non-JTAG devices, it is often possible - with a well designed board - to see test coverage very close to 100%. However, some designs will need a number of test solutions to achieve an acceptable level of test which is why XJTAG has a Technology Partner programme.

## 5. What role has being situated in Silicon Fen played in growing the company?

It is clearly a benefit to be based in Silicon Fen and many of our early customers are leading-edge technology

companies and contract manufacturers in the region.

For example, the XJTAG system is used by ARM to improve and speed up the process of debugging and testing its range of ARM RealView development hardware tools, which include high-density, multi-layer development boards.

XJTAG is also used by many other Silicon Fen companies including Briton EMS, Cambridge Broadband Networks, Curtiss-Wright (formerly Primagraphics), nCipher, PartnerTech, Prism Electronics, Solarflare Communications and TTPCom (now Motorola).

## About XJTAG

XJTAG is a global supplier of IEEE Std. 1149.x compliant boundary scan development tools. Its JTAG (Joint Test Action Group) development system offers a highly competitive solution for designers and developers of electronic printed circuit boards and systems. Utilising XJTAG allows the circuit development and manufacturing 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 use the same devices.

XJTAG is based in Dry Drayton, Cambridge, and is part of the Cambridge Technology Group. For further information, please visit [www.xjtag.com](http://www.xjtag.com)

## 6. What are XJTAG's expansion plans?

XJTAG will continue to grow organically and to enhance its boundary scan development system to further abstract engineers from the complexity of the IEEE 1149.1 standard. We will continue to expand our distributor network - we are already represented in over 30 countries - and plan to extend our 'XJTAG-Inside' programme by integrating XJTAG with other test solution providers' systems through our Technology Partner programme.

## 7. XJTAG is part of the Cambridge Technology Group. What are the other companies in the group?

In addition to XJTAG, the group consists of two other companies. Cambridge Technology Consultants and Adiabatic Logic.

Cambridge Technology Consultants (CTC) is an electronics design company which specialises in real-time embedded software and hardware design. CTC provides high quality and innovative custom electronic product and system design services. Its multi-disciplinary team of hardware and embedded software engineers deliver cost-effective solutions from concept design through to volume production.

Adiabatic Logic offers mixed signal ASIC design services and has a portfolio of IP energy recycling solutions which can help reduce the power used by electronics systems. Adiabatic Logic works with customers to help develop everything from logic blocks through to semiconductors.

## 8. Is there an IPO on the horizon for XJTAG?

XJTAG is privately-owned and we have no plans to seek venture or market funding in the short term. Over the last decade we have a built up a very

talented engineering team within the group - many of whom have a stake in the company - and we plan to expand this team organically and grow the business steadily from cash generated from within the group.

## 9. Will XJTAG be unveiling anything special at this year's APEX Show in Las Vegas?

XJTAG will be demonstrating the new version of its boundary scan system at APEX. New features - including automated JTAG chain discovery and set-up, a built-in netlist explorer, optimised memory test, real-time DFT coverage tracking, a library of device-centric test scripts, LabVIEW integration, and support for Xilinx's Virtex-5 FPGA System Monitor - will enable engineers to get their boards up and running in minutes and hours not days and weeks as is the case with some competitive systems.

## 10. What's the motivation behind XJTAG's three-year sponsorship of the National Electronics Week exhibition at Earls Court in June?

The UK electronics industry is the fifth largest in the world yet we lack a single international event in this country at which to showcase our considerable talents. We attend the major electronics exhibitions in the US, Japan, and in Germany and we strongly believe that that the UK needs a dedicated international event that unites the industry and brings together everyone in the electronics supply chain from PLCs, SMEs and government agencies to trade associations, universities and the VC community.

We are hopeful that, over time, National Electronics Week ([www.nationalelectronicsweek.co.uk](http://www.nationalelectronicsweek.co.uk)) will become such an event, which is why we have made a three-year commitment to the show.

## XJTAG makes important breakthrough

XJTAG has made what it is describing as an important breakthrough in the consumer electronics segment.

TVonics Solutions, the British digital television device manufacturer, has selected the XJTAG boundary scan development system to debug, test and programme its range of energy efficient digital TV products.

TVonics holds a significant share of the UK set top box market

selling devices under its own brand, as well as making products for retailers including DSGi, Tesco, Argos and Marks & Spencer. TVonics was founded in late 2004 by a former Sony design team.

The XJTAG development system is being used by engineers at TVonics' design facility in Bridgend, South Wales to speed up debug and test of ball grid array (BGA) populated printed circuits boards containing a wide range of elec-

tronic devices including MPEG source decoder chips, Flash memory, Ethernet controllers, I2C devices, and termination resistors.

TVonics has also integrated XJTAG with the production JIG tester at its contract manufacturing partner's site (Sony Manufacturing in Pencoed, South Wales) to enable products to be tested and programmed in-line in one single process.

Mike Jones, hardware man-

ager at TVonics Solutions, said: "The XJTAG Professional system is helping us to further shorten our already challenging development cycles, which is so critical in the fast-changing consumer electronics market."

"Having floating licences has also been a major benefit as it means the system is not tied to one computer and can be moved around the lab or to another site as and when required," he added.



Mike Jones, hardware manager at TVonics Solutions