Vision Systems Innovator Programs Flash Faster with XJTAG Boundary Scan

Active Silicon tests its ranges of high-performance frame grabbers and camera interface products using XJTAG boundary scan. In addition to saving time by performing high-speed flash programming, XJTAG quickly achieves high test coverage enabling functional tests to be shorter and simpler for greater overall speed and efficiency.

Active Silicon, based on the western edge of London, UK, creates advanced imaging products including frame grabbers, camera interface boards, and other custom embedded systems for applications such as medical imaging, surveillance, video streaming, and industrial automation.

Founded in 1988, the company uses high-density FPGAs such as the latest Xilinx® devices at the heart of its latest products. The engineering team is highly experienced in using XJTAG boundary scan to minimise the time spent testing PCB assemblies and programming the FPGAs. Chief Technical Officer Chris Beynon explains, "We first began working with XJTAG several years ago and were among the first users of XJFlash, XJTAG's highly accelerated programmer module. We achieved tremendously valuable time savings, cutting the time to program large FPGAs from several minutes to just 35 seconds."

"XJTAG also provides access to the SYSMON (System Monitor) and XADC blocks of Xilinx FPGAs, which allows us to check on the temperature, power-supply output, and analogue interfaces," he adds.

XJTAG boundary scan now forms the frontline of Active Silicon's production-test capability. "We like the ease with which we can use devices on the boundary scan chain to communicate with non-JTAG components such as I^2C devices and DDR memory. XJTAG achieves high test coverage relatively easily, which saves time and lets us simplify functional test routines."

He continues, "By running the functional test application from within the XJTAG environment after boundary scan tests, we can save plugging the board into a different test setup for functional test. And because we can program the flash devices while the board is connected, the result is a very fast and efficient process."

In addition to programming flash quickly with XJFlash, XJTAG can program devices such as CPLDs and EEPROM in various ways including running SVF or STAPL / JAM files. This versatility can save owners needing to buy additional, dedicated programmers.

XJTAG has many other features that help save time in production and relieve labour-intensive tasks. The advanced Connection Test automatically checks that all components are soldered correctly, identifies any short circuits and, with on-the-fly Automatic Test Pattern Generation (ATPG), handles board-design changes without requiring a complete new set of tests to be developed. Active Silicon's

Chris Beynon adds that the fault reporting capabilities of XJTAG's automatic tests are very good, which can help if any boards need rework. XJTAG generates detailed test logs, which make it easy to review the history of any board in the future, if required.

"We also use XJAnalyser in the initial R&D for new products because it is such a quick way of checking some of the functionality," adds Chris Beynon. XJAnalyser is a powerful tool for circuit visualisation and debugging, allowing easy plug-and-play use and control of JTAG devices on a pin-by-pin basis. He sums up, "Whether it's a development or production scenario, XJTAG allows high test coverage in a very quick test."

opinion
Chris Beynon
CTO
Active Silicon

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Data Bank

Active Silicon
COMPUTER IMAGING PRODUCTS

Company	Active Silicon, HQ United Kingdom
Nature of business	Specialist manufacturer of imaging products and embedded vision systems
Main products	Frame grabbers for data acquisition, embedded vision systems for image processing and machine control, and camera-end interface boards
Customers	Manufacturing, medical imaging, life sciences, security & defense
Founded	1988
Locations	Iver & Langley (UK), Maryland (USA)
Web site	www.activesilicon.com