KOZIO™

Automated Hardware Diagnostics

Case Study: Jetter AG

Kozio Helps Jetter AG Overcome DDR Memory Configuration Challenges

Background/Overview

For more than 25 years, Jetter AG, based in Ludwigsburg, Germany, has been a world leader in automation technology for mechanical and plant engineering and building automation, creating thousands of control solutions for customers. The company is the first to provide a complete Ethernet and Web based automation solution through its JetWeb system. Jetter's integrated approach reduces programming and engineering times, makes service and maintenance easier, and makes complex functions much simpler to create.

The Challenge

Jetter was working to get a PowerPC™ 440EP based proprietary board up and running and was experiencing delays. Specifically, they were having trouble determining optimal settings and configuring the board's DDR SDRAM controller using a legacy open source boot loader called PIBs. The board's operating system was crashing due to memory exceptions when the application was loaded, slowing down the board bring up process and the entire product development cycle. The 440EP uses a DDR controller that was new to Jetter. The debug process had led to some delay and frustration.

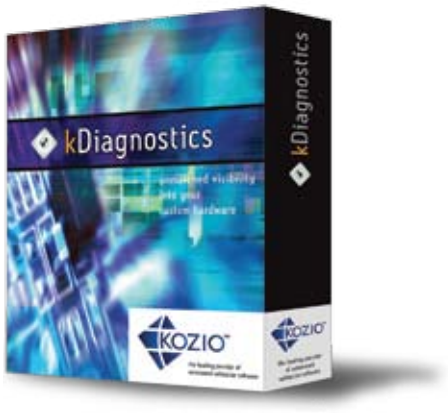
Jetter was able to get the board working to a certain extent, but the memory exceptions were difficult to debug. Jetter chose a commercial OS to save time, but debugging issues in an OS is very time consuming unless you are an expert with the intricacies of the OS source code.

Richard Zenkert, an AMCC FAE who was working closely with Jetter to help them through the board bring up process, introduced his customers at Jetter to Kozio to help resolve the problem. AMCC regularly partners with Kozio, and provides information on Kozio products to its customers to help them speed up the board validation process.

Kozio's Solution

Working under a non disclosure agreement to protect Jetter's intellectual property, Kozio received a block diagram and schematics of the product. Using this, Kozio engineers configured kDiagnostics, customizing it to provide Jetter with the information they needed to tackle the test challenges they were facing. In just four days, Kozio sent a turnkey, standalone version of kDiagnostics to Jetter in Germany, as a binary image ready for execution on the board.

After receiving kDiagnostics, Jetter started by using the software's auto tuning algorithms, developed with help from AMCC, which run out of SRAM memory. SRAM was stable on the Jetter platform, and simpler to configure and use than DDR SDRAM. Running kDiagnostics from SRAM let the user alter



DDR controller settings live, and allowed Jetter to quickly try different DDR timings without having to edit, compile and download new software to the board. At each timing setting, they were then able to auto configure, auto tune and then execute a full DDR SDRAM validation suite.

Once SDRAM was validated, Jetter was able to use kDiagnostics to validate other areas of the board, including Ethernet and USB. They were able to test all of their interfaces without debugging their OS stack, and then use kDiagnostics for full board testing and validation.

Benefits & Savings

In just days, Kozio successfully provided support from overseas, without ever seeing or working with the actual Jetter board. Jetter was able to debug their SDRAM memory in less than two weeks, get the board up and running, and continue on with the product development process.

About Kozio

Kozio provides high performance automated hardware diagnostics for today's complex computing devices. Kozio software improves and streamlines current test methodologies and processes with proven, turnkey diagnostics for custom boards implementing processors from AMCC, Freescale, or Intel. Kozio diagnostics can help you throughout your product lifecycle, from validating new hardware in the lab to streamlining production test, shipping power on self test and automated returns testing. Kozio software reduces project schedule risk and development costs while increasing test coverage and end product reliability. Kozio products are used by technology companies around the globe.

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