

Corelis' Boundary-Scan Test Products Solve Difficult Prototype Problems at Vanguard Managed Solutions



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Vanguard Managed Solutions (VanguardMS) has been designing, developing, and deploying innovative and cost-effective networking solutions for over 40 years. During that period, VanguardMS has established an enviable track record by focusing on "time-to-market" as the most critical element in successfully delivering complete managed-network solutions to meet the needs of its hundreds of customers around the world. In recent years, VanguardMS has relied on Corelis' ScanPlus Boundary-Scan test systems to shorten its development cycles and bring new products to market sooner by improving the productivity of its engineers in the development and debugging of prototype units.

Scott Dextrateur is an MS Production Test Engineer at VanguardMS whose responsibilities include the testing of production-run assemblies. An exceptional case was recently presented to Scott when a group of R&D engineers came to him urgently requesting help to "bring-up" a CPU-based prototype board.

The initial problem with the bring-up of the prototype board was that the CPU would not properly boot. As all test and development engineers know from first-hand experience, this phase of board prototyping can be both frustrating and time consuming. Scott immediately connected the prototype to his Corelis ScanPlus system and ran Corelis' Boundary-Scan tests. Immediately, the ScanPlus found a pull-down resistor net shorted to power. When Scott informed the R&D engineers of the short, they attempted to inspect the board with a microscope but were unable to visually identify the short. Trusting that the Corelis ScanPlus system is able to detect electrical faults that are not visible to the trained eye, even under a microscope, the engineers decided to replace the resistor. The prototype booted, the error was corrected, and the R&D engineers were able to quickly move forward with their development work.

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Later, the R&D engineers returned to Scott with another difficult problem. This time the SDRAM on the prototype was functioning erratically. Using his Corelis' ScanPlus tools, Scott quickly ran a memory cluster test that located a bad memory cell. In this case, the results of the test indicated that the failure was due not to an assembly defect but to a bad memory component. Initially, Scott was reluctant to replace the critical memory component and decided first to contact the Corelis Customer Support group to gain a better understanding of exactly how a memory cluster test is accomplished. After receiving a timely and unambiguous response, Scott realized that the only probable cause for the failure was the bad memory component, as indicated by the ScanPlus system. When the failing memory component was replaced, the failure disappeared. Once again the timely use of Corelis tools removed a roadblock that was preventing the R&D engineers from moving forward with their prototype development.

"Once our R&D engineers had experienced the success of using the Corelis tools to find quick solutions to tough problems that blocked their development progress, they became very enthusiastic about utilizing boundary-scan to an even greater extent in future designs", said Scott. "The real clincher for us was when we were able to use the ScanPlus to detect a solder short under a BGA device which our contract manufacture had earlier examined with an x-ray but failed to find. Only after we detected the exact location of the fault using boundary-scan was the CM able to retest the board with x-ray and confirm the solder smear."

"It's foreseen that the development schedules at VanguardMS will remain tight throughout the end of the year," continued Dextrateur. "The R&D engineers are more than happy to discover a tool, such as the Corelis ScanPlus system, that can help keep them from spending nights and weekends tracking down these kinds of difficult board bring-up problems. Our engineers confirmed that the defects they found on this prototype board are exactly the kinds of faults that are extremely difficult and time-consuming to find by traditional means. The added cost and time incurred from testing with conventional tools could mean missing a narrow window-of-opportunity to market a new and leading product, something that Vanguard Managed Solutions cannot concede to."

About Corelis

Corelis, Inc., a subsidiary of Electronic Warfare Associates, Inc., offers bus analysis tools, embedded test tools, and the industry's broadest line of JTAG/boundary-scan software and hardware products combining exceptional ease-of-use with advanced technical innovation and unmatched customer service. Corelis' development and test tools are used by companies such as Agilent, Dell, IBM, Intel, Microsoft, Lockheed Martin, Rockwell Collins, Hewlett-Packard, Motorola, Qualcomm, Nokia, Panasonic, TI, Ford, Broadcom, Ericsson, and many others. Corelis products are found globally in every industry developing or manufacturing electronic products.



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