Rancore Technologies Pvt. Ltd.

Broadband equipment innovator gains competitive edge with XJTAG

"Markets for advanced communications, such as wireless broadband and IPTV, demand rapid delivery of high-quality solutions. Equipment developer Rancore Technologies Private Limited of Navi Mumbai is using XJTAG to help meet these goals, benefiting from rigorous screening of boards, rapid test and repair, and increased manufacturing efficiency using the production-optimised XJRunner system."

Rancore Technologies Private Limited of Navi Mumbai, India, develops boards for leading-edge communication equipment such as Base Stations for 4G-LTE mobile technology, IP Set-Top Boxes, LTE Devices such as USB Dongles, Personal Routers, Outdoor CPE, Indoor CPE, Home Gateway etc. To succeed in providing innovative solutions and products for the next generation technology, the company prioritises rapid delivery of cost-effective solutions.

Most of Rancore's board designs are densely populated with ICs such as network processors, DSPs, FPGAs, DDR2 SDRAMs, and custom System-on-Chip (SoC) devices. The boards also include LEDs, switches, buffers and other general-purpose devices. In production, all units are inspected before functional testing, using optical and X-ray equipment. This has helped to overcome some of the test coverage challenges arising from difficult physical access to I/O pins of densely spaced, high-pin-count devices. BGA packages, in particular, prevent in-circuit test fixtures or manual probes from making contact with I/Os to verify the correct signal. However, neither X-ray nor AOI can identify every potential manufacturing fault.

"Boundary scan is the single most effective technique for identifying faults with BGA devices," concurs Brijesh Shah of Rancore Technologies. To maximise test coverage and speed up board checks to isolate failed boards ahead of functional test, Rancore has recently added boundary scan to its test and inspection flow. "XJTAG delivers the performance and features we need at the most competitive price. We have also received extremely good technical support, to help us get the best from our investment in XJTAG."

Rancore's engineers have found the system easy to learn and use. Tests are created rapidly using XJTAG's high-level programming language, XJEase. Built-in features such as automatic scan chain detection and a powerful proprietary connection test provide additional help to start testing boards quickly. XJTAG also displays the locations of any faults found, which helps to speed up repair.

XJEase scripts to test non-JTAG devices can be custom written or downloaded from XJTAG's online library containing scripts for a wide variety of commonly used components. Among the devices supported are generic memory ICs such as DDR2 DRAMs and Flash chips, as well as ADCs, Ethernet PHYs, and real-time clocks. The tests are device-centric, and can be re-used without modification in different circuits. There are also scripts to test LEDs, switches and temperature sensors, and to exercise the System Monitor circuitry of Xilinx FPGAs.

To incorporate XJTAG into production, Rancore has helped its manufacturing partner to implement the run-time XJTAG environment, XJRunner, on several production lines. "We can develop tests in our own labs, send them directly to our manufacturer, and have them working in production very quickly," explains Vishal Abrol. "Since we began using it, XJTAG has enabled us to increase test coverage for our boards, find and fix any faults quickly, and work even more closely and efficiently with our manufacturer."

opinion

PK Bhatnagar
Managing Director
Rancore Technologies Private Limited

"Boundary scan is the single most effective technique for identifying faults with BGA devices. XJTAG delivers the performance and features we need to use boundary scan for our boards, at the most competitive price. We have also received extremely good technical support, to help us get the best from our investment."

"Since we began using it, XJTAG has enabled us to increase test coverage for our boards, find and fix any faults quickly, and work closely and efficiently with our manufacturer by sending tests that can be run immediately using XJRunner on the factory floor."

Data Bank

RANCORE TECHNOLOGIES

Company	Rancore Technologies Pvt. Ltd. HQ India
Nature of business	Developer of end-to-end 4G technology solutions
Main product	TD-LTE Base Stations, LTE Devices such as indoor and outdoor CPE, USB dongle, IP STB, Home Gateway
Customers	Telecom Operators
Locations	Navi Mumbai, India. Offices in Gurgaon, Bangalore, Kolkata
Incorporated	2007
Employees	250+
Web site	www.rancoretech.com