



IKOR Increases Value-Add for Customers by Choosing XJTAG Boundary Scan

“Investing in XJTAG boundary-scan test saved IKOR Group using X-ray inspection to verify connections in places such as beneath BGAs. XJTAG is now integral to IKOR’s test strategy, enabling the company’s engineers to achieve higher testability targets and to encourage customers to apply DFT rigorously in new board designs.”

IKOR Group is an international electronic design and manufacturing organisation, with business units in Spain, Mexico and China. Technical services include design validation, test, and pre-certification for innovative products targeting sectors such as automotive, energy, transport, household appliances, access control, lifts and cranes, metering, etc.

The company’s manufacturing and test activities prioritise speed, efficiency and high product quality for customers. A combination of Automatic Optical Inspection (AOI), In-Circuit Testing (ICT) and functional tests are usually applied, to achieve optimal test coverage for each product type. AOI can identify obvious defects such as missing or incorrectly placed components, or poor solder joints, to avoid forwarding defective boards to ICT and functional testing. However, components in packages such as BGAs, which have hidden I/O pins, cannot be inspected with AOI or tested using a bed-of-nails ICT fixture.

To overcome this, IKOR has an X-ray machine allowing defects such as short circuits or open circuits at BGA I/O pins to be identified. However, X-ray equipment is relatively expensive and there can be legal restrictions governing its use. Programming the machine and analysing the images can also be time consuming. IKOR’s engineers needed a faster and easier way to identify these hard-to-find faults.

“Boundary scan testing does not require access to individual device

I/O pins, and test gear is available at relatively low cost compared to X-ray equipment” explains Cristina Jaureguibeitia, Test Engineer at IKOR’s technical centre in San Sebastián, Northern Spain.

“We evaluated a number of alternative boundary scan systems, and found XJTAG to be the most user friendly. It also offers the features we need at the best price.”

XJTAG provides a graphical view of

boundary scan chains, showing I/O pins and connections on a pin-by-pin basis to enhance circuit visualisation and speed-up debugging. Features such as golden board comparison, pin watch, zoom/split screen and single stepping help designers debug boards quickly. Compiling tests is also straightforward, using a high-level programming language to create device-centric tests. These can be stored and re-used to test any future boards containing the same device.

Using XJTAG has solved IKOR’s BGA test challenges. In addition, Cristina Jaureguibeitia and the technical centre team are also now using XJTAG to further improve test services. “Boundary scan can test a high percentage of all components and

interconnects, and XJTAG has many added features for testing components not connected to the scan chain. There is also an easy to use Design For Test (DFT) feature, which helps us set and achieve high targets for test coverage.

“Proper circuit design, taking testability into consideration early in the product lifecycle, can greatly increase the test coverage achievable with boundary scan. We are encouraging our customers to use the same principles in their original designs.”



opinion

Cristina Jaureguibeitia
Test Engineer
IKOR

“We evaluated a number of boundary scan systems, and found XJTAG to be the most user friendly system offering the capabilities we needed at the best price. It has many added features for testing components not connected to the scan chain, and the easy to use Design For Test feature helps us set and achieve high targets for test coverage.”

“We are now encouraging our customers to apply proper DFT principles in their original designs.”

Data Bank

GRUPO iKOR

Company	IKOR Group, HQ Spain
Nature of business	EMS Solutions
Main product	Design, manufacturing, testing and after-sales service
Customers	Markets include Automotive, Home Appliances, Access Management, Lifts and Cranes, Industrial Applications
Locations	Production plants in San Sebastián, (Spain), Guadalajara (Mexico) and Suzhou (Shanghai, China)
Incorporated	1981
Web site	www.grupoikor.com