



Martec Improves Pass Rate with Boundary Scan

“Originally, Martec started using XJTAG to diagnose a number of faulty boards that had proven uneconomical to diagnose using other methods, however they have since implemented it into their main production flow and it was so successful they have also introduced it to one of their customers.”

Martec’s Pisa branch specialises in the design and production of underwater defence systems, concentrating particularly on test systems for torpedoes and marine countermeasures, including safety systems for naval vessels, cruise ships and mega yachts. The group as a whole employs around 150 people, mostly across Italy, with an additional satellite office in the USA.

Enrico Rossi, technical director at Martec, explained how the company had a number of faulty high-value boards which had proven uneconomical to diagnose with their previous test systems, but still represented a significant investment of resources. “We had eleven faulty boards in stock which we had investigated and replaced some components with no success. With XJTAG, we were able to recover eight of these eleven through a straightforward investigation that completed in minutes.” The diagnosis from XJTAG was precise, leading the engineers directly to the offending components, allowing them to make the necessary repairs very quickly and easily. This process transformed non-working boards destined for scrap into valuable stock, improving pass rates, saving money, reducing environmental impact, and contributing to profitability.

The speed and ease of use continued to impress: “Creating new projects is intuitive and XJTAG support is fast and efficient.” XJDeveloper, the XJTAG IDE, includes built-in diagnostic tools to help visualise the circuit: “Speed of

testing and precise error identification with the ability to directly view components and signals on the layout viewer or on the schematic with one click was invaluable.” The comprehensive access that boundary scan gives to BGA devices and other fine-pitch components was also extremely useful, along with the depth of testing that can be performed on memories and other active devices.

Mr Rossi was also pleased with the ease of integrating XJTAG with other existing hardware and tests,

such as using loopback connectors to test input/output signals, and very importantly, to test their very dense daughterboards whilst connected in situ to the motherboard. With these internal connections, boundary scan removed the need for external test rigs or custom mounting solutions. Implementing XJTAG allowed Martec to go further than just testing – the board’s flash memory is now being programmed through XJTAG, an extremely fortuitous discovery as the probes previously used for connecting to the microcontroller are no longer available for purchase.

To ensure that the final products are hardened against the harsh environments that they will encounter during their life, Martec use thermal chambers during testing. To protect the XJLink and

controlling computer from the harsh conditions, an XJExtender system was used to carry the signals from outside, giving full control of the boards from a safe distance.

Overall, while Martec’s initial priority was to use XJTAG for their core test and programming requirements, the team soon discovered that the system could solve a much wider range of engineering challenges than expected. Its flexibility and impact have given Martec’s engineers real confidence in the solution so much so that they have recommended XJTAG to their own customers and supported them with training. For XJTAG, this endorsement is a powerful reflection of the trust, value and practical results its products deliver.

opinion

Enrico Rossi
Technical Director
Martec SpA

“Creating new projects is intuitive and XJTAG support is fast and efficient.”

“Speed of testing and precise error identification with the ability to directly view components and signals on the layout viewer or on the schematic with one click was invaluable.”

“With XJTAG, we were able to recover eight of eleven faulty boards through a straightforward investigation that completed in minutes.”

“One of our customers now uses XJTAG thanks to our recommendation and the training we provided.”

Data Bank



Company	Martec SpA
Nature of business	Marine defence systems
Main products	Hardware (damage control, fire detection/suppression, shutdown systems) and software solutions (stability, decision support, tracking, and security)
Customers	Navy, cruise lines, mega yachts
Founded	1994
Employees	150
Location	Pisa, Italy
Web site	www.martec.it