



## IMSAR Pinpoints Component Failures in Minutes, not Hours, using XJTAG

“Identifying a specific failed component on a board has long posed a challenge, especially if the board is assembled and is undergoing functional testing. IMSAR has been able to transform its testing process to find component level faults earlier and at a lower cost. What once required multiple engineers working for dozens of hours and costing tens of thousands of dollars can now be accomplished in under an hour by a single operator – often uncovering issues before final product assembly.”

Since 2004, IMSAR has been at the forefront of Synthetic Aperture Radar (SAR) technology, collaborating in the US with both the Department of Defense and the Department of Homeland Security. The company is committed to rapid technological innovation, enhancing radar system capabilities while minimizing their size. Their site in Utah gives their 100+ staff members excellent access to a diverse range of environmental conditions for testing, and beautiful scenery as a bonus!

Previously, IMSAR employed a testing system that assessed products only after assembly. This method could only indicate a unit's failure and was unable to identify the underlying cause, resulting in time-consuming and frustrating troubleshooting when tests failed. By integrating XJTAG's products into their testing framework, IMSAR not only streamlined the testing process but also significantly expanded test coverage with board level testing. Rather than receiving a simple pass/fail outcome, they can now pinpoint the specific components causing issues. Dan Gunyan, IMSAR's hardware lead, shared a notable example: “One of our system pods experienced a bad gimbal-ready signal issue, leading to 40 hours of troubleshooting and repairs by multiple employees. This issue would have been detected at the PCB level with XJTAG, saving considerable labor costs on high precision fault isolation.”

As Dan emphasizes, the ability to conduct thorough testing on individual PCBs prior to the final product assembly allows IMSAR to catch problems early on in the process, enabling faulty boards to be replaced and sent back for rework. This proactive approach not only saves engineering time spent disassembling and reassembling faulty systems but also eliminates the need for extensive fault analysis and debugging, as defective boards never reach the final product.

Additionally, Dan points out that boundary scan testing facilitates easy access to BGAs and densely populated boards where adding sufficient test points for traditional methods can be challenging. With XJTAG boundary scan, accessing pins beneath a BGA is as straightforward as reaching any other pins. He needs to test boards with a wide range of devices, including FPGAs, ADC and DACs, clock buffers, I/O expanders and chips interfacing with a variety of buses including I<sup>2</sup>C, SPI, serial, PCI-E and USB which means that XJTAG, with its support for a huge range of devices, is a perfect fit.

Dan further explained, “XJTAG was selected because it provides a comprehensive testing platform

without requiring extensive additional development for our manufacturing environment. It is a more complete solution than any other we've encountered.”

While IMSAR is still in the early stages of implementing XJTAG into their production systems, they are enthusiastic about integrating the test output files into their existing automated reporting systems, enhancing both coverage and detail in the testing process.

In summary, IMSAR is very happy to have adopted the XJTAG Suite, as it has significantly expanded their test coverage, enabling more thorough testing earlier in the production process, and yielded substantial savings in engineering time during debugging.

### opinion

Dan Gunyan  
RF Engineer and Hardware Lead  
IMSAR LLC

“We chose XJTAG as it is a more complete solution than any other we've seen on the market.”

“XJTAG saves hours of troubleshooting by pinpointing the faulty component causing the failure.”

“XJTAG was selected for its comprehensive PCB assembly testing platform which doesn't need significant extra development to deploy into our manufacturing area.”



Company	IMSAR LLC HQ USA
Nature of business	Development and manufacturing of security and intelligence products
Main product	Synthetic Aperture Radar systems
Customers	Defense, border security, geospatial mapping
Founded	2004
Employees	100+
Location	Springville, Utah, USA
Web site	<a href="http://www.imsar.com">www.imsar.com</a>