

# AIC Helps Western Digital Enhance SSD Testing and Validation Efficiency

Western Digital's AIC-based SSD testing and validation chamber for strict quality and reliability assurance leveraging AMD EPYC™ processors



## CUSTOMER

# AIC

## APPLICATION

Test & Quality Assurance for Solid-State Drives (SSDs)

## CHALLENGES

When designing a new SSD test and validation chamber for Western Digital, AIC sought a highly flexible processing platform it could leverage to test more drives faster – in an extremely compact space – to improve overall QA testing efficiency and throughput.

## SOLUTION

The custom-designed AIC servers underpinning Western Digital's sophisticated SSD testing chamber leverage AMD EPYC™ processors to provide formidable I/O per socket – up to 128 lanes of PCIe® Gen4 – and tremendous price/performance to accelerate batch processing speeds and future proof the infrastructure.

## RESULTS

Western Digital's new AIC-based SSD test and validation chamber is optimized to put Western Digital SSDs through the rigors of extreme usage while testing their reliability, giving customers the confidence that their critical data is well protected from damage and/or loss.

## AMD TECHNOLOGY AT A GLANCE

AMD EPYC™ Processors

### Providing 128 lanes of PCIe® Gen4 connectivity and extreme compute performance, the AMD EPYC™ processors in AIC's SSD testing chamber enable Western Digital to test more drives faster

From consumer laptops to cloud datacenter infrastructure, we depend on computing hardware every day to perform countless essential tasks. Reliability is therefore a major consideration for any system or device servicing our critical data, but it's an especially crucial consideration for the makers and users of data storage devices – the hard disk drives (HDDs) and solid-state drives (SSDs) we count on to secure and protect this data. A single lapse in data storage device reliability could render highly valuable data irretrievably damaged or lost forever.

Western Digital ([westerndigital.com](http://westerndigital.com), San Jose, CA) has earned its reputation as an industry leading provider of data storage systems and devices in part by helping to ensure the highest levels of quality and reliability across its broad portfolio of devices, including HDDs, SSDs and other storage and memory devices. Western Digital's loyal customers depend on it for seamlessly reliable data protection, and Western Digital goes through extreme lengths to ensure that the storage devices it manufacturers adhere to stringent testing and validation protocols to enable the highest levels of quality assurance (QA).

AIC Inc. ([aicipc.com](http://aicipc.com), Taiwan), a leading provider in enterprise storage and server solutions, is enhancing Western Digital's exacting QA protocols by helping to provide Western Digital with custom designed SSD testing and validation systems.

These sophisticated testing 'chambers' are outfitted with custom designed and configured AIC servers optimized to test SSD batches off the manufacturing line in order to confirm reliable read/write operations under extreme heat (up to 85 degrees C) and voltage load variations, mimicking the harshest operating conditions the SSDs might reasonably be expected to encounter out in the field.

By improving the capacity and speed at which SSDs can be tested and validated in Western Digital's testing chambers, AIC could help Western Digital further strengthen its QA processes and accelerate batch throughput with the ultimate goal of ensuring product reliability that's worthy of the prestigious Western Digital name. For the custom servers built into Western Digital's SSD testing chambers, AIC sought a high-performance processing solution with the expansive I/O agility to help Western Digital test more drives faster.

### MORE CONNECTIVITY, MORE TESTING CAPACITY

At the heart of AIC's Auriga motherboards underpinning the chamber's testing/validation servers, single-socket AMD EPYC™ processors provide the extreme I/O connectivity and processing performance needed to accelerate Western Digital's QA testing output. At the time of the chamber's design, AMD processors were the only x86 CPUs on the market to support PCIe® Gen4 connectivity. AMD EPYC™ 7002 Series SOCs provide support for up to 128 PCIe® Gen4 lanes.

## HIGH PERFORMANCE FOR THE LONG HAUL

The AMD EPYC™ SOCs powering AIC's SSD testing chamber for Western Digital provide ample processing headroom to run the requisite SSD test scripts efficiently.

The faster the script performs the SSD read/write tests and the resulting test data is analyzed, the faster the SSD batch can be processed through Western Digital's QA protocols.

AMD EPYC™ SOCs meet the most demanding throughput requirements for storage applications. Among their many achievements, AMD EPYC™ processors have set over 200 world records and counting for integer and floating-point speeds

(SPEC®), and TPC-H benchmarks®. Performance attributes like these are in part what make AMD EPYC™ SOCs so well suited to accelerate SSD pass/fail assessments within Western Digital's testing chamber.

Aligned to AMD's lengthy support lifecycles for select processor solutions, AIC's new-generation of SSD test and validation chambers designed for Western Digital are slated for a seven-year supply period. This helps ensure that AIC can confidently support Western Digital in its QA initiatives while precluding the need to redesign its Auriga motherboard to accommodate a new processing platform in the short term.

### About AIC Inc.

AIC is a leading provider of both standard OTS (off-the-shelf) and OEM/ODM server and storage solutions. With expert in-house design, manufacturing and validation capabilities, AIC's products are highly flexible and configurable to any form factor, standard or custom. AIC leads the industry with over 25 years of experience in mechanical, electronic, system-level engineering as well as a dedication to innovation and customer satisfaction. Headquartered in Taiwan, AIC has offices and operations throughout the United States, Asia, and Europe. For more information, please visit: [aicipc.com](http://aicipc.com)

### About AMD

For over 50 years AMD has driven innovation in high-performance computing, graphics, and visualization technologies—the building blocks for gaming, immersive platforms, and the data center. Hundreds of millions of consumers, leading Fortune 500 businesses, and cutting-edge scientific research facilities around the world rely on AMD technology daily to improve how they live, work, and play. AMD employees around the world are focused on building great products that push the boundaries of what is possible. For more information about how AMD is enabling today and inspiring tomorrow, visit [amd.com](http://amd.com)

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