

Putting SSDs to the Test

A Micron/Flexstar Case Study

Flexstar Technology, Inc.

Before Flexstar began making the kind of testers that are considered “the gold standard of hard drive testing,” they were in the business of repairing floppy disk drives. Founded in 1981, Flexstar not only repaired floppy drives, but they built a lot of internal tools to test their repairs. In fact, it was their dedication to testing their own products and services that drove them to focus their business entirely on the development of data storage testing solutions.

Since introducing their first hard drive tester—and the storage industry’s first commercially available tester—in 1985, Flexstar’s mission has been to provide standardized and repeatable testing and qualification processes. Today, they’re the leading provider of advanced storage testing solutions for manufacturers of hard drives, solid state drives, optical drives, as well as PC OEMs, consumer electronics OEMs, and many other storage OEMs and users.

A New Opportunity With a Different Kind of Product

In 2007 the SSD market was in its infancy. Flexstar had a proven history with disk drives and had developed good customer relationships, but their experience with SSDs was limited to a few customers in a narrow target market. About this same time, Micron was developing their first-generation SSDs and realizing that test platforms for SSDs didn’t exist yet.

Micron naturally chose to contact Flexstar, the recognized leader in storage testing solutions, to discuss test platforms for SSDs. As the two sides started talking and exchanging information, the momentum began to build. They were part of an industry that was about to move rapidly from a stable HDD product to a disruptive

SSD solution, and both companies wanted to lead the way in their respective product areas.

It was opportunity and aspiration; and it was commitment. It was the right areas of expertise coming together at the right time—Flexstar knowing hard drives inside and out and Micron being able to offer extensive experience with the test methodology of NAND Flash memory. Both companies saw great potential in developing a collaborative relationship.

A New Kind of Partnership

As an industry leader with respect to quality, Micron had a reputation for taking a serious approach to testing, from the early development stages, through failure analysis, to end-user experiences. Micron also had valuable experience with NAND components and was able to identify what needed to be tested and how to connect that data to products and reliability.

Micron’s expertise and willingness to openly share data and provide feedback showed a strong commitment to both Flexstar’s and Micron’s SSDs goals, from the executive level down. And while several companies were talking to Flexstar about SSD testers at this point, Micron’s role as a key contact became more solid. According to Flexstar’s Vice President of Strategic Accounts Mark Meyer, “Micron took a very different approach with us. From the beginning, they treated us as more of a partner than a vendor—equally as willing to share data as they were demanding that we meet their requirements.”

Meyer responded by committing valuable resources—including some of his best people—to what had quickly become a joint effort to develop an industry-leading SSD testing platform. According to Meyer, “We saw a great partner in Micron. They were very consistent with what they said they’d do and they always delivered.”



A New Gold Standard for SSDs

Because of Flexstar's agility, they quickly came up to speed in evaluating different types of functionality in SSD products. They used Micron's feedback to fine-tune their products—address potential issues, add enhancements, and increase functionality—to essentially transform HDD testers into SSD-specific testers. Flexstar's Senior Technical Manager Kimito Sakata noted that "Micron came up to speed very quickly and asked a lot of questions and gave a lot of feedback. Their experience with test methodology definitely made a difference."

Flexstar launched its first in a series of SSD test solutions in late 2008. Since then, their ambient testers, burn-in ovens, and environmental chambers have given SSD customers and manufacturers a meaningful way to qualify solid state drives using standardized tests and hardware.

Ongoing Collaboration

The efforts of these two companies has resulted in increased efficiencies and expanded capabilities that are benefiting the entire industry. According to Chris Cooper, Micron's Engineering Manager for SSDs, "The

level of sophistication and volume of testing that we've achieved with Flexstar are something we're really proud of because we feel like we're addressing the complexities of the SSD market as a whole."

Micron continues to get early access to Flexstar's products so they can evaluate them and provide feedback. According to Tim Martin, Micron's NAND Section Manager, "Micron's whole SSD testing process is built around the Flexstar testing platform, which is great because we like to throw the kitchen sink at everything we test and this gives us a platform to do that." In turn, it also gives Flexstar a way to make their standardized SSD testing solutions as robust as possible. Robust, standardized tests provide measurable benchmark results that can demonstrate the performance gains that this revolutionary technology has to offer.

As the Flexstar/Micron relationship continues, both companies acknowledge that more important than what their collaboration has done (or will do) for their individual product lines is what it's doing to elevate the industry and unlock the potential of SSDs.

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