



Innodisk Case Study

Complete storage solutions in diverse vertical markets

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About Innodisk

Innodisk is a service driven provider of flash and DRAM products for the industrial and enterprise applications. With satisfied customers across the embedded, military, enterprise computing markets and more, we have set ourselves apart with a commitment to dependable products and unparalleled service. This has resulted in products including embedded peripherals designed to supplement existing industrial solutions and the high IOPS flash arrays for industrial and enterprise applications. The new business lines are leading our next step in being a comprehensive industrial system service provider and flash storage solution provider.

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Customized Testing Saves Time and Money for Defense Application

professional service



Innodisk can offer a tailored testing process to meet specific requirements, such as extreme environments. In the case of our partner, they needed a strict thermal cycling test. Our standard procedure mandates that our wide temperature products are tested within a specialized chamber. The temperature is lowered to -40°C. We turn off the product, reboot and check the amount of later bad blocks. The same process is repeated while the temperature rises to 85°C.

The Situation

A valued Innodisk partner adopted our Evergreen 128GB 2.5" SSD and 64GB MLC SATA Slim with wide temperature and coating features in their land vehicle system for Defense Applications. They chose Innodisk Evergreen SSD for its longer endurance, performance, stability and warranty.

For our partner's application, they required some additional steps. Our product needed to not only reboot while at the lowest and highest temperatures, but it needed to stay both -40°C and 85°C for fifteen minutes, then reboot and run for twenty minutes. With our in-house engineering team, we were able to complete the project successfully with drives that met their rigorous requirements.

The Solution

Innodisk developed the Evergreen-series MLC SSDs with our L² architecture to have a longer lifespan compared to traditional MLC SSDs. Innodisk SSDs offer a wide range of advantages over commercial technologies, while keeping prices competitive. Among them are better performance, lower power consumption, and extreme shock resistance. Innodisk SSDs are able to work in a wide temperature range, from -40°C up to 85°C, deeming them ideal for the defense markets.

We provide customized testing for our clients, based on application requirements. To meet Defense certification requirements, we are capable of sophisticated and in-house system level testing, to support our partners.

The Payoff

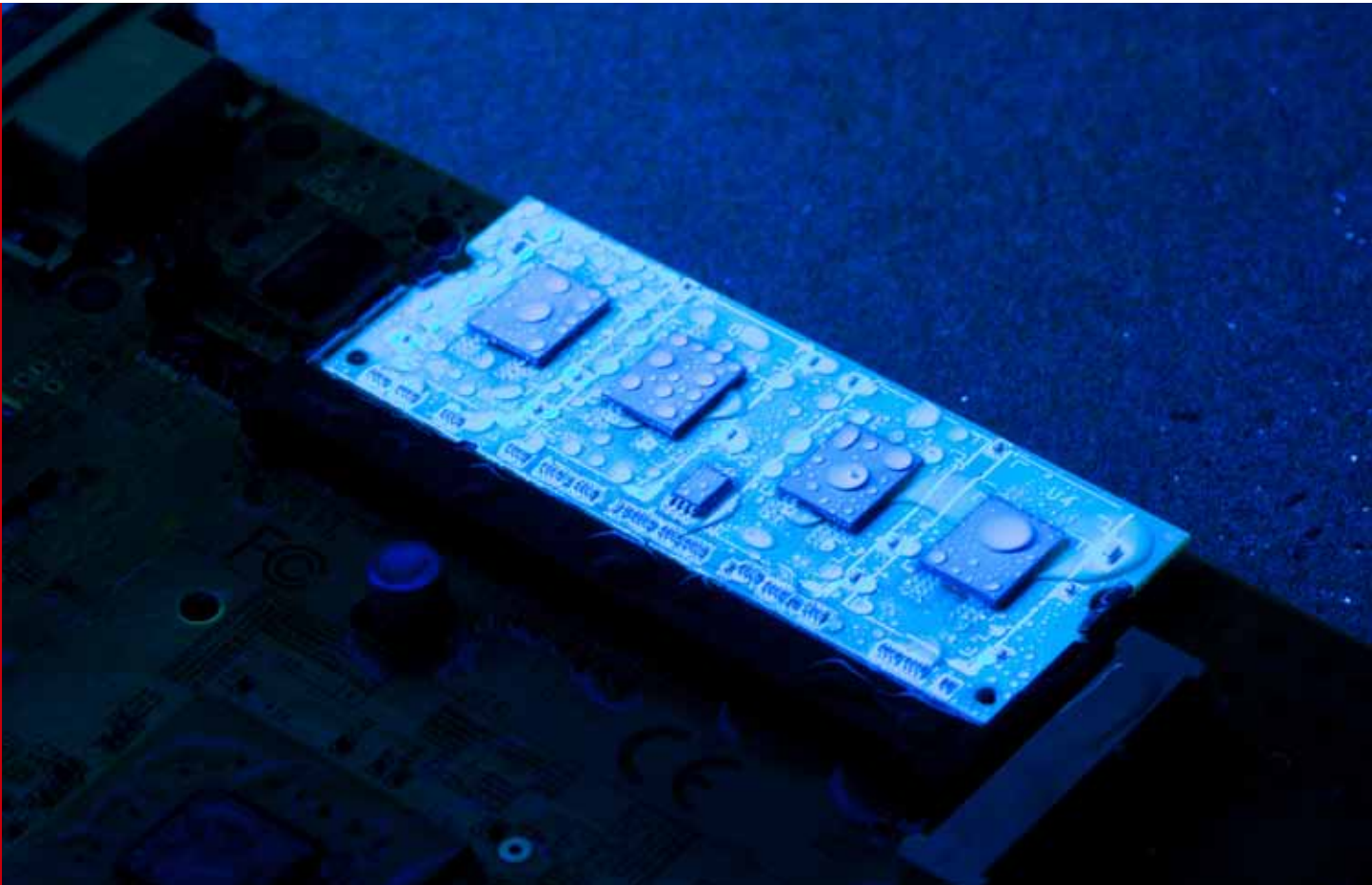
Innodisk's customized testing takes the pressure off of our partners. They not only save time and money, they have peace of mind that our product will meet strict government requirements in a timely fashion. With guaranteed BOM control, Innodisk products have a longevity and stability that is unrivaled in the industry.

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More than a DRAM Manufacturer:
One-on-One Professional Service to Deliver
Value-Added Coating DRAM

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Our industrial customers are always in need of equipment that can sustain through harsh conditions, wear and tear, and rugged applications. Innodisk is proud to provide advanced in-house technical services, and acts as a trusted advisor to support our customers as they reach their goals. The Innodisk DRAM team is able to deliver one-on-one, value-added services to our customers, including DRAM coating for harsh conditions.

The Situation

A world-class manufacturer of computer control machine tools, located in Japan, was looking for a robust memory solution that could withstand unique environmental challenges. Their CNC machine operates in a space with high levels of heat and a counter-active water cooling method. Extremely high temperature and instant cooling lead to mist and water droplets laced with acidic materials on their motherboard. These types of environmental impacts speed up the degradation of the entire system. System error occurs. They may lose lots of their end customers.

The customer was using standard DRAM modules, which only contributed to the issues.

The Solution

The customer ultimately sought Innodisk SO-DIMM with conformal coating to prevent moisture, mist, corrosion, and acidic materials. Our conformal coating enables the DRAM modules to stay in normal operation in extreme environments.

There were two additional reasons as to why they chose to work with Innodisk. First, our strong commitment to locking BOM for our products eased their manufacturing process. With locked BOM and unique part numbers, ease of support is inherently built in as component changes are needed.

The second reason is a point of pride for us: we are committed to excellent technical support from our on-staff engineers. As we built our relationship with the customer, we brought research on coating materials analysis, testing patterns, environments, and tools to the table. We provide our customer design-in support and quick response and feedback when in need. Our attention to detail and commitment to technical thought leadership earned our customers' trust and solidified the working relationship.

The Payoff

Innodisk, a value-added service provider, provides complete DRAM product lines to meet strict industrial equipment requirements, including DRAM with conformal coating. The coating shields our DRAM modules from environmental factors and increase the life and reliability of the system. We also offer our tailored technical support for the entire process of design to build, including research of suitable coating materials and testing patterns, for our clients.

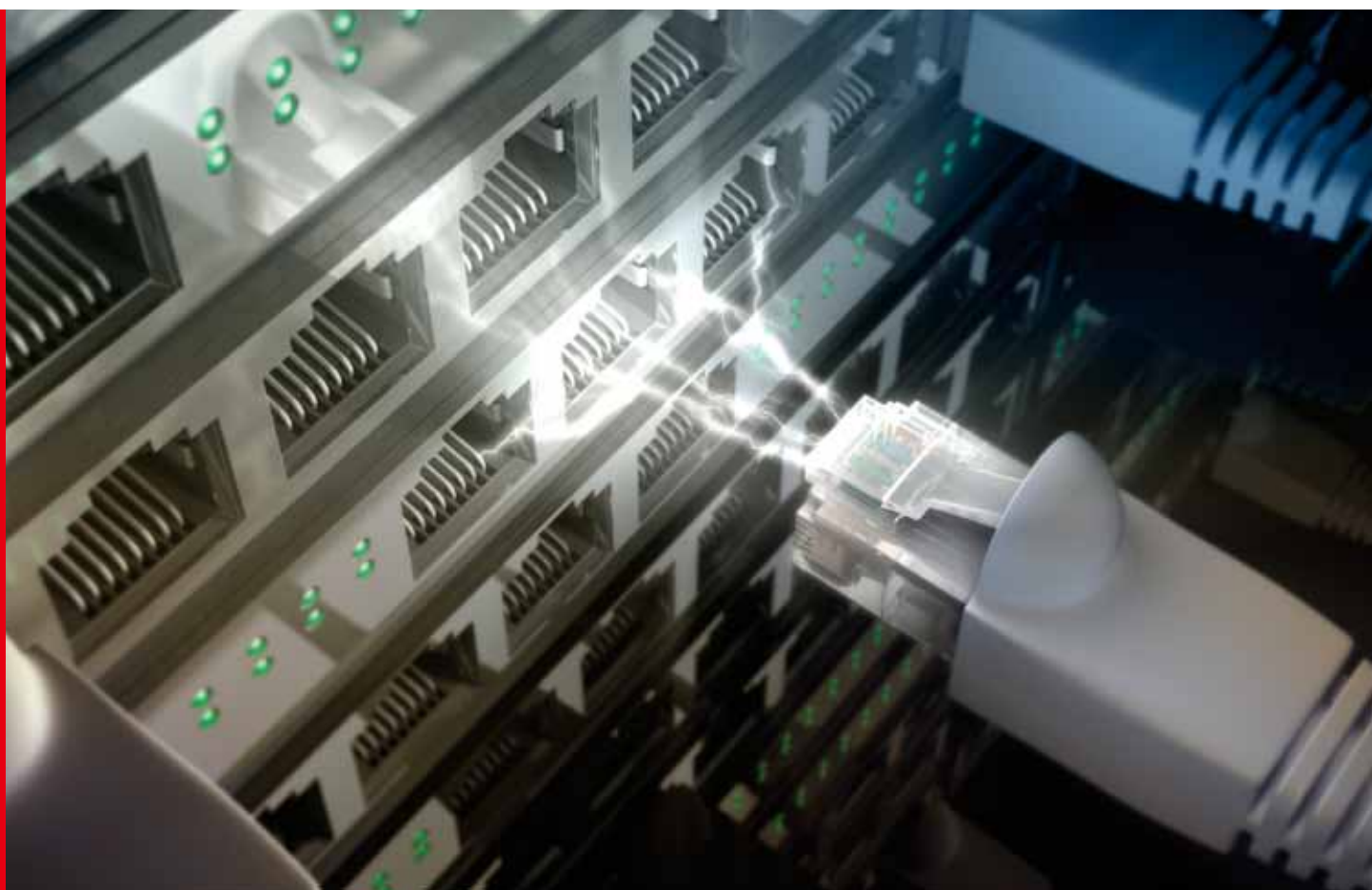
Our DRAM with conformal coating aids in reliability of our customer's system, providing non-stop operation in extreme environment, and thus avoiding interruption in equipment processes. This ultimately saves our customers a lot of money and time. And that is always our end goal.

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Innodisk's Complete Line Up of Industrial Products Helps Partner Use Board Space Efficiently and Easily

professional products



Innodisk offers a very unique Mini PCIeDOM series of products that comes with standard Mini PCI Express interface, and transfers the PCIe signal to SATA signal without any circuit modification. Our Mini PCIe can operate perfectly without an extra driver, making it the easiest way for motherboard makers or system integrators to design in.

The Situation

As handheld devices continue to shrink, motherboard makers and system integrators are increasingly challenged with space limitations. Recently, a worldwide provider of network security appliances adopted our Mini PCIeDOM series to transfer PCIe signal to SATA signal on their firewall server board without a SATA slot.

They needed higher capacity SATA flash modules, but there was no space to increase number of drives used, and there was only one Mini PCIe slot left.

The Solution

Our partner's application focused on store log files, which are smaller data with higher writing frequency. Predicting the expiration date of SSD could help them monitor the endurance of their SSDs. With the Innodisk iSMART tool, they were able to track disk usage and separate read/writes into sequential and random categories, making it easier to detect any issues with the SSDs, and better predict lifespan based on usage patterns.

The Payoff

Innodisk's complete line up of industrial storage products in a variety of form factors and interfaces, including 2.5-inch SSD, SATADOM, SATA Slim, mSATA, CFast, and many more. Innodisk is pleased to provide customization and flexibility to all of our customers with unique applications and challenges.

We help our partner use their system board space efficiently and easily.

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AdvanPOS Opens New Markets for POS, Thanks to Innodisk SSD Technology

Professional products



"Hard drive failure has always been the biggest reason for product malfunctions, and now that we have Innodisk EverGreen SSDs, which have more long life nearly 3 times of a traditional hard drive .This is not even mentioning that our clients are happier too, as their system now last longer."

Alcott Huang, supervisor of AdvanPOS' R&D division.

The Situation

With a rising demand for POS systems to be used in environments traditionally thought too exposed to the elements, AdvanPOS needed a solution to allow their systems to work in a wider variety of harsh environments as well as to increase overall product reliability.

The Solution

The implementation of Innodisk's EverGreen SSDs, which have a wide operating temperature range and no moving parts, allowed AdvanPOS to offer POS systems that are reliable in extreme environments. Additionally, their disk monitoring software, iSMART, helped to prevent AdvanPOS' customers from losing valuable data.

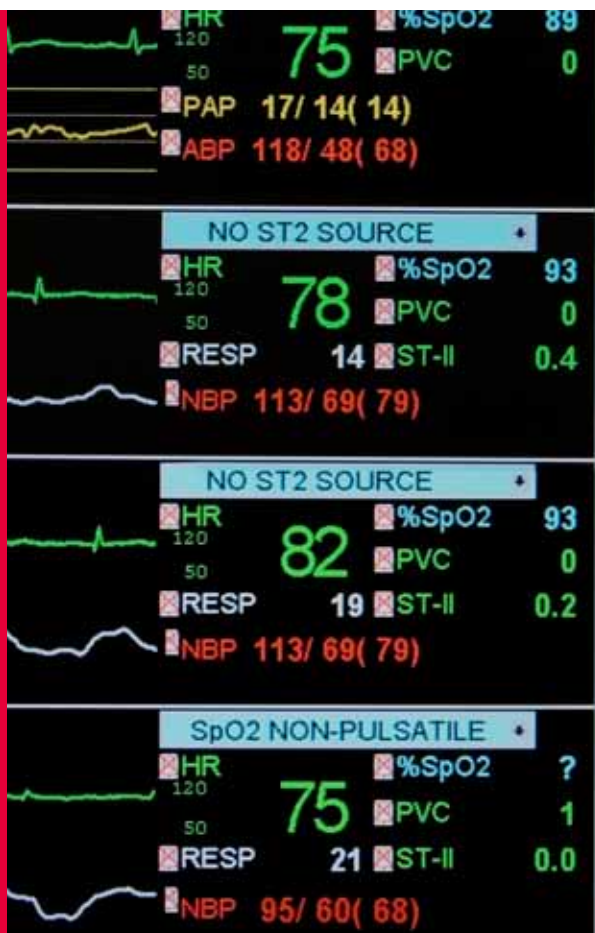
The Payoff

Innodisk works together with its partners to help them bring innovative POS technology to new environments, new markets, and new customers. With the reliability of SSDs, backed by Innodisk's quality control and monitoring software, POS technology comes closer to customers, wherever they are.

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Professional Technical Support Benefits Long-term Project Cooperation

professional longevity support



Longevity of support is a major concern for the industrial market. Innodisk's reputation for industrial grade quality means buyers can be assured of reliability, top-notch warranty, and excellent technical support. Our in-house firmware team's experiences, along with well-established relationships with motherboard Suppliers in Taiwan, help us to provide long term technical support. These advantages are especially helpful for applications with dynamic requirements over a longer period of time, such as the medical industries need to lock BOM.

The Situation

One of our European customers is focused on developing a solution for medical device integration, and has adopted our mSATA SLC 16GB product into their medical tablet. Since Governments often mandate regulations to protect patient privacy, data security functions are of the highest priority. These regulations often determine very specific requirements from our customers, such as designing commands to "erase data when a password fails over 5 times", or "lock the device when an unauthorized remove occurs".

When working with our firmware team, our customers feel like they have an exclusive technical support team on staff. Innodisk's ability to leverage our deep relationships with motherboard suppliers also aid our customers in achieving big wins for their business.

The Solution

Innodisk stands by our Absolute Service pledge, to provide professional engineering support to customers during their design, testing, and system support phases. Our team's support covers the entire system integration process, including firmware and hardware customization.

The Payoff

Exclusive technical support takes the stress off of our customers when they are faced with intricate Governmental regulations. Our ability to customize hardware and firmware make us an ideal collaborator, as solutions that fit precise specifications can lead to savings in money and time for the customer.

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Quick Response Aids Thin Client Suppliers, Increases Profits

professional factory



Our partners in the semi-industrial marketplace often have needs that rapidly change as a project progresses. Flexible lead time and responses from their vendors are crucial to achieving business goals.

The Situation

One such partner adopted the Innodisk mSATA SLC Flash as an OS system storage device, to be housed within their thin client product. From our collaboration, they hoped their chances to close major deals from calls to bid would increase.

The challenge for many of our customers in this industry is that their pricing and purchasing needs are not easily predicted. They must follow market trends as tightly as possible to ensure that their products are as competitive as those within the consumer market. Also, they often need to customize specific functions in their hardware for industrial grade needs.

The Solution

Flexible lead time: Our partner needed a counterpart that could support them when their order needed to be rushed; they had a tight deadline for shipment of their end-product. They needed our parts to be shipped within 3 days of ordering. Our factory, which operates 24 hours a day, 7 days a week, was confident that they could meet the tighter delivery deadline.

Professional customization: Innodisk's products are backed by our in-house firmware team, who can be trusted to tailor our products for thin client applications in a short amount of time. Our partner wanted for their thin client to delay a few seconds in response to the host's command. Our firmware team designed and executed the customized requirement in two weeks after we got enough information of partner's platform.

The Payoff

Semi-industrial partners need quick responses and products with customized requirements delivered under tight circumstances. Innodisk's team and facilities are flexible, and able to accommodate unexpected changes to a project. We are committed to meeting deadlines, even during the holidays. Our firmware team always provides professional support in a reasonable timeframe. We view our customer relationships as collaborative; we are happy to adjust our products to the scope of a client's project, pending their requirements and specifications.

With our flexibility and thought leadership in the technology field, Innodisk is able to aid our partners in closing deals, and positively affect their business growth.

Absolute Service

Service is not just what we do. It's who we are.

Absolute Service is our pledge and our guide. It infuses everything we do at Innodisk.

Absolute Service is our promise to deliver the most comprehensive service in every situation. It's the philosophy that guides us in all interactions with our customers and business partners. It's the spirit of friendliness and enthusiasm that fills each member of the Innodisk team.

Absolute Service is our absolute commitment to our customers.

For more warranty details, please contact the Innodisk Sales Department or visit our website:

www.innodisk.com

Headquarters

Innodisk Corporation

5F., No. 237, Sec. 1, Datong Rd., Xizhi
Dist., New Taipei City 221, Taiwan

T +886-2-7703-3000

F +886-2-7703-3555

E sales@innodisk.com

Branch Offices

USA

42996 Osgood Road, Fremont,
CA 94539, USA

T +1-510-770-9421

F +1-510-770-9424

E usasales@innodisk.com

Japan

9F, 2-7-4, Shin-Yokohama,
Kohoku-ku, Yokohama 222-0033, Japan

T +81-45-594-7581

F +81-45-594-7582

E jpsales@innodisk.com

China

602, 6 Floor, building A ,
Hengyue Center, No.19
Dengliang Road, Nanshan Dist.,
Shenzhen

T +86-755-2167-3689

+86-755-2167-3690

F +86-755-2167-3691

E sales_cn@innodisk.com

Europe

Telexweg 4,
5641 TL Eindhoven,
Netherlands

T +31-(0)40 282 1818

F +31-(0)40 282 1850

E eusales@innodisk.com