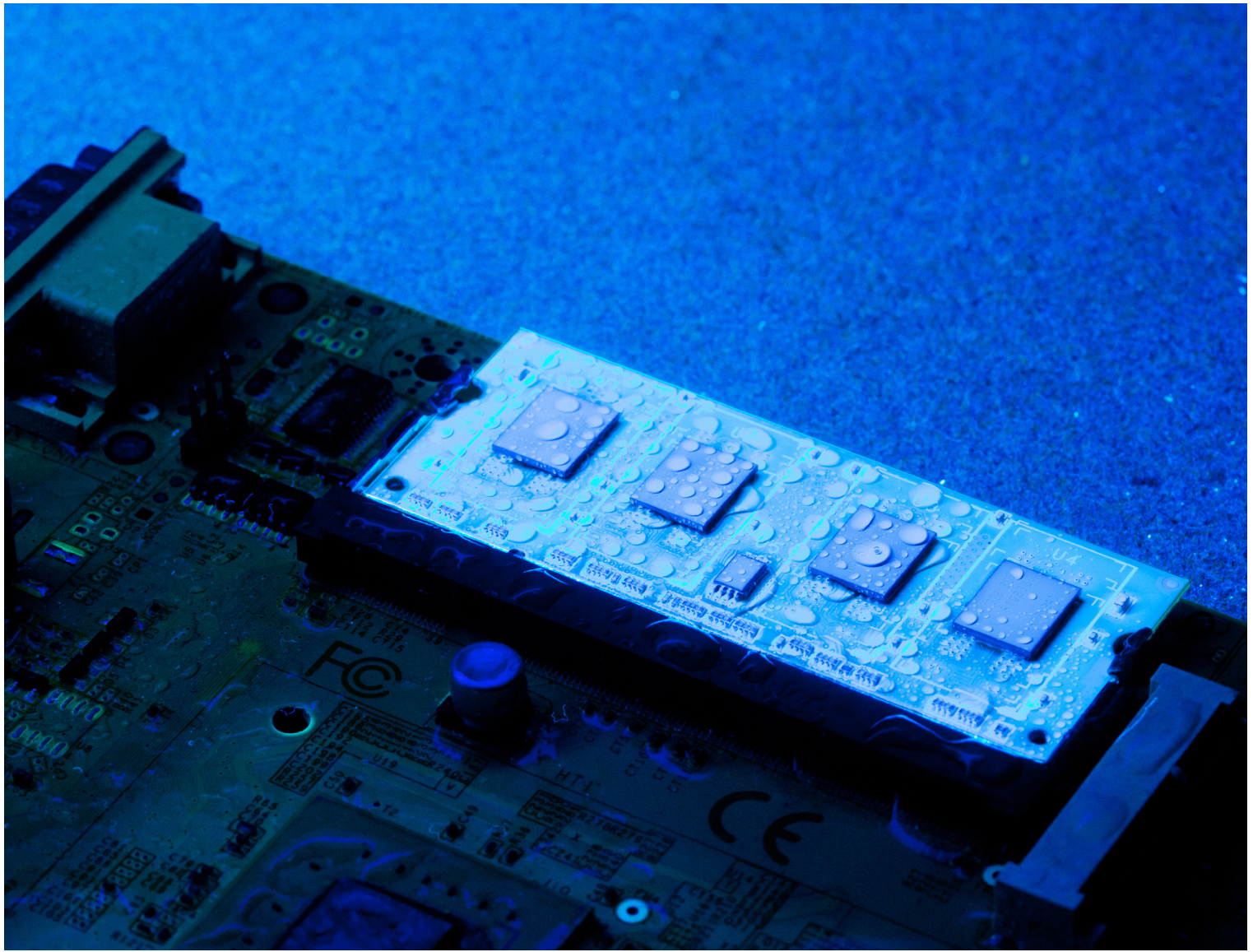




# Innodisk Conformal Coatings for DRAM Modules

Value-added DRAM Modules for Industrial Equipment in Harsh Environments



# Introduction

Innodisk provides complete DRAM product lines to meet strict industrial equipment requirements. As a value-add service, we include conformal coatings applied onto DRAM modules to protect the modules from moisture, dust and chemical contaminants. This allows our DRAM to maintain their normal operation even in extreme environments.

Innodisk conformal coatings refer to chemical materials applied in layers as thin as 0.03mm, and up to 0.13 mm thick onto the surface of the DRAM modules, to create a protective film for components. The coatings on the modules protect against moisture, contaminants, dust and acid-or- alkaline materials, in line with IPC-A-610 standards for electronic components.

Innodisk conformal coatings use materials from the world's leading supplier, HumiSeal, and are processed completely in a clean environment within our own facility. This process of quality control eliminates the chances of contamination resulted from handling and transportation.

## ***A conformal coating can protect DRAM modules from***

- Heat
- Static electricity
- Moisture
- Electrical or thermal conduction
- Corrosion
- Dust
- Environmental contaminants

***You might have heard  
of conformal coating,  
but do you exactly  
know what benefits  
it can bring to system  
integrators?***



Some system integrators outsource DRAM conformal coating to save on equipment and human resources. However, most outsourced system integrators would still need to handle repair and maintenance over time, which would generate extra costs and hinder product competitiveness. This usually isn't feasible.

Innodisk provides a factory warranty for our conformal coated DRAM modules. In the event that the coatings are damaged in use, Innodisk is committed and responsible for resolving RMA issues. The system integrator can consider Innodisk a one-stop shop for their DRAM products, as the coating, repair and maintenance is taken care of under one roof.

***We provide  
professional repairs  
and maintenance***



***We help reduce the total  
cost of the system***



Industrial computers have a higher demand for system reliability because they are often installed in harsh environments. When dealing with dust and water prevention requirements from their customers, system integrators often require protection for products with IP (International Protection) ratings. This may or may not be necessary for the end user. In an environment where direct contact with water is not likely, using protection products with IP ratings increases the costs of the DRAM module and reduces their market competitiveness. In a dustproof environment, Innodisk can offer the right coating solution to reduce the total cost of the DRAM module.

Innodisk has the team and knowledge to provide additional options to system integrators, with conformal coatings tailored to meet specific applications while being cost conscious.

Reliability is an absolute requirement for industrial computers used in mission-critical applications. Innodisk conformal coatings are applied to completely cover the surface of the DRAM modules, except the gold fingers. The coatings shield the DRAM modules from environmental factors and increase the lifespan and reliability of the system.

***We help extend the  
life of DRAM modules  
in system***



# Read-World Applications



## ***Outdoor Signage***

The increasing needs of outdoor signage installations that provide real-time information ensure requirements for conformal-coated DRAM modules to help systems withstand wind, rain and/or direct sunlight.



## ***Embedded Vehicle System***

DRAM modules with conformal coating enable automotive embedded systems to collect and record event data while the vehicle is in operation. Protection from dust and the elements ensures that the user is constantly connected to the Internet of Things (IoT).



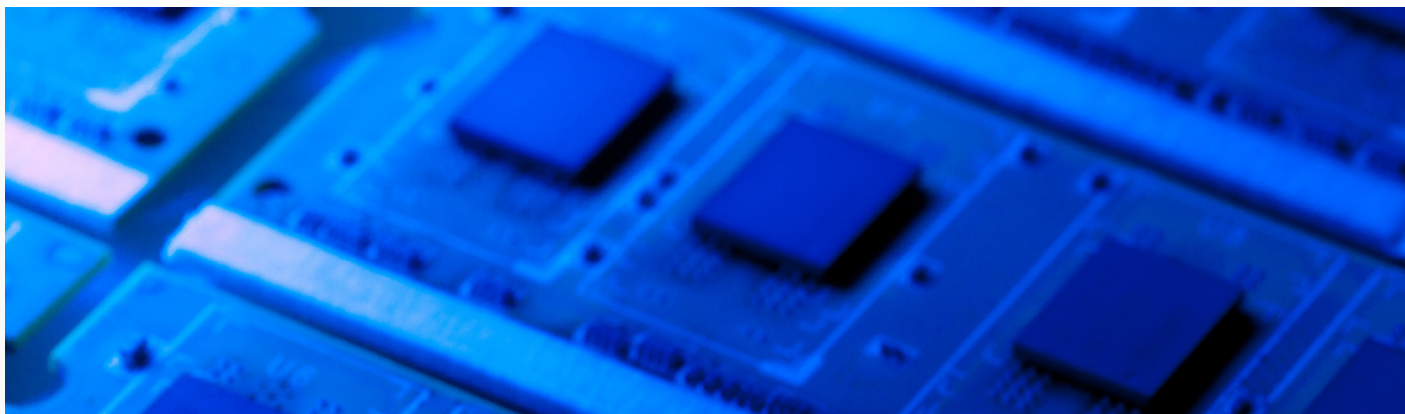
## ***Factory Automation***

Conformal coatings for DRAM modules applied in an automated production facility can protect the system from water sprays, airborne dust and acidic materials.

## ***Defense & Aerospace***

Conformal coatings that observe MIL-I-46058C standards can ensure the normal operation of a system in critical situations, while under extreme temperature variations, moisture and vibrations.

# The Advantages of Our Products



## Top quality materials from our supplier

Innodisk standard conformal coating for DRAM modules is composed of acrylics supplied by HumiSeal, a partner who is among the world's top three manufacturers of conformal coating materials. Innodisk uses the fast-drying type of acrylics HumiSeal 1B73™ to speed up the process and reduce the influence of dust, which is compliant with IPC, UL and MIL standards. This process also provides excellent moisture protection and electric insulation, can be easily repaired, does not shrink during cure, and contains fluorescents for easy inspection under UV light.

## Integrated production in our own facilities

Innodisk's conformal coatings adopt spray method and are completed entirely in-house, to avoid negative effects brought by dust in an outer environment. 100% inspection under UV light is employed to guarantee coating quality.

## Optional coating materials and methods

Innodisk DRAM module conformal coatings typically use acrylics to achieve better conformity. Acrylics are superior to other materials in reparability and curing, which helps ensure consistent quality of our standard products.

However, options for other coating materials and methods are provided to cater for specific end-application needs.

| Coating method | Advantage                              | Material  | Advantage                                                                    |
|----------------|----------------------------------------|-----------|------------------------------------------------------------------------------|
| Dipping        | Quick process with less smell          | Acrylics  | Higher reparability and easier curing                                        |
| Spray          | Better conformity of applied thickness | Silicones | Higher durability at extreme temperatures and other environmental conditions |

# About Innodisk

Innodisk is a service driven provider of flash and DRAM products for the industrial and enterprise applications. Our team has the experience and expertise that comes directly from our focus on the industrial segment, and is bolstered by having our own firmware team and factory. With satisfied customers across the embedded, aerospace and defense, in-vehicle computing 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. The expanded business lines are leading our next step in being a comprehensive solution and service provider in industrial storage industry.

## Absolute Service

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

*Innodisk is a service-driven provider of flash and DRAM storage products and technologies that provide mission critical memory solutions for Industrial/Embedded, Server and Cloud Computing, Aerospace and Defense applications.*

*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.*

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

**[www.innodisk.com](http://www.innodisk.com)**

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