

# Scaling with Confidence: Enhancing Autonomous Vehicle Operations through a Robust Serve Infrastructure



**Innodisk's DDR4 3200 16GB RDIMM Wide Temperature module is a perfect solution for Autonomous Vehicle Server, providing high-speed transmission and withstand extreme temperatures in a harsh environment. Moreover, adding Conformal Coating Technology provides reliability under a moisture-based liquid cooling system.**

## Introduction

Innodisk collaborates with a global leader in automated driving systems for its AI training server. The server is aim to build a reliable, fully automatic vehicle for Level 4 high autonomy. Innodisk addresses fast access and humidity challenge with the DDR4 3200 16GB RDIMM Wide Temperature Module with Coating Technology, ensuring stability and high-speed real-time analysis. The solution delivers top performance, safety, and efficiency, and drives advancements in automated driving technology, creating a safer and more efficient transportation landscape.

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# Our Roadmap to Success

## DDR4 3200 16GB RDIMM

### Wide Temperature + Coating

- High data rate module with register function supporting AI system operation.
  - Wide temperature module that operates under -40°C to 85°C.
  - Operates under 95%RH and protected with conformal coating protects against the moisture of the liquid cooling system.
  - The coating technology can also protect the module from dirt, dust, moisture, corrosion, and electrical and thermal conduction.
  - Well-tested with 1,000 times reboot test and S3 cycling test, and 48 hours of functional test.
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## Challenges

- **High-Performance AI Training Server:** The system needs to operate at a high level of performance since it serves as a data logger for collecting and analyzing road conditions and traffic flow, as well as conducting AI machine learning. Additionally, it can be utilized in Advanced Driver Assistance Systems (ADAS).
- **Data-Intensive Processing:** Self-driving systems encounter the challenge of efficiently handling massive volumes of data generated by sensors and AI algorithms.
- **Sustained Performance:** The system must maintain consistent performance over extended periods during training process and in autonomous vehicles.
- **Harsh Environment Endurance:** The system exposes potential moisture inside the liquid cooling system.

## Solutions

- **DDR4 3200 16GB RDIMM Module**  
The module is ideal for automated driving systems due to low latency and high bandwidth, facilitating rapid data access and processing. It ensures consistent and reliable performance, which is crucial for uninterrupted data analysis. DDR4's sustained performance handles demanding workloads, maintaining efficiency and supporting the continuous operation.
- **Wide Temperature and Coating Technology**  
Additional advantages through Wide Temperature technology ensure reliable performance even in extreme temperatures. Coating Technology adds a protective layer to the memory modules, safeguarding them against moisture, dust, and other potential contaminants. These features combine to make the DDR4 memory module highly reliable and well-suited for self-driving systems' demanding and unpredictable nature.

## Conclusion

Autonomous Vehicle technology stands out as one of the most groundbreaking applications in the modern era of AI. At the heart of these vehicles, a resilient server serves as a crucial infrastructure, enabling the realization of self-driving capabilities.

Innodisk DDR4 3200 16GB RDIMM Wide Temperature memory modules offer a solution to the challenges faced by self-driving systems. Low latency and high bandwidth enable rapid data access and processing, ensuring consistent and reliable performance. The modules are also designed to withstand harsh environments with the Wide Temperature technology and Coating Technology.

The module achieves a high-performing AI training server and will enhance the precision and reliability of the self-driving system through the process of AI machine learning.

## Our Promise

At Innodisk, we believe that any challenge can be overcome through cooperation. By maintaining a strong line of communication all the way from inquiry to implementation, we ensure a tailor-made solution that fits your application. We remain committed to innovation with our continual focus on total hardware, firmware, and software integration.