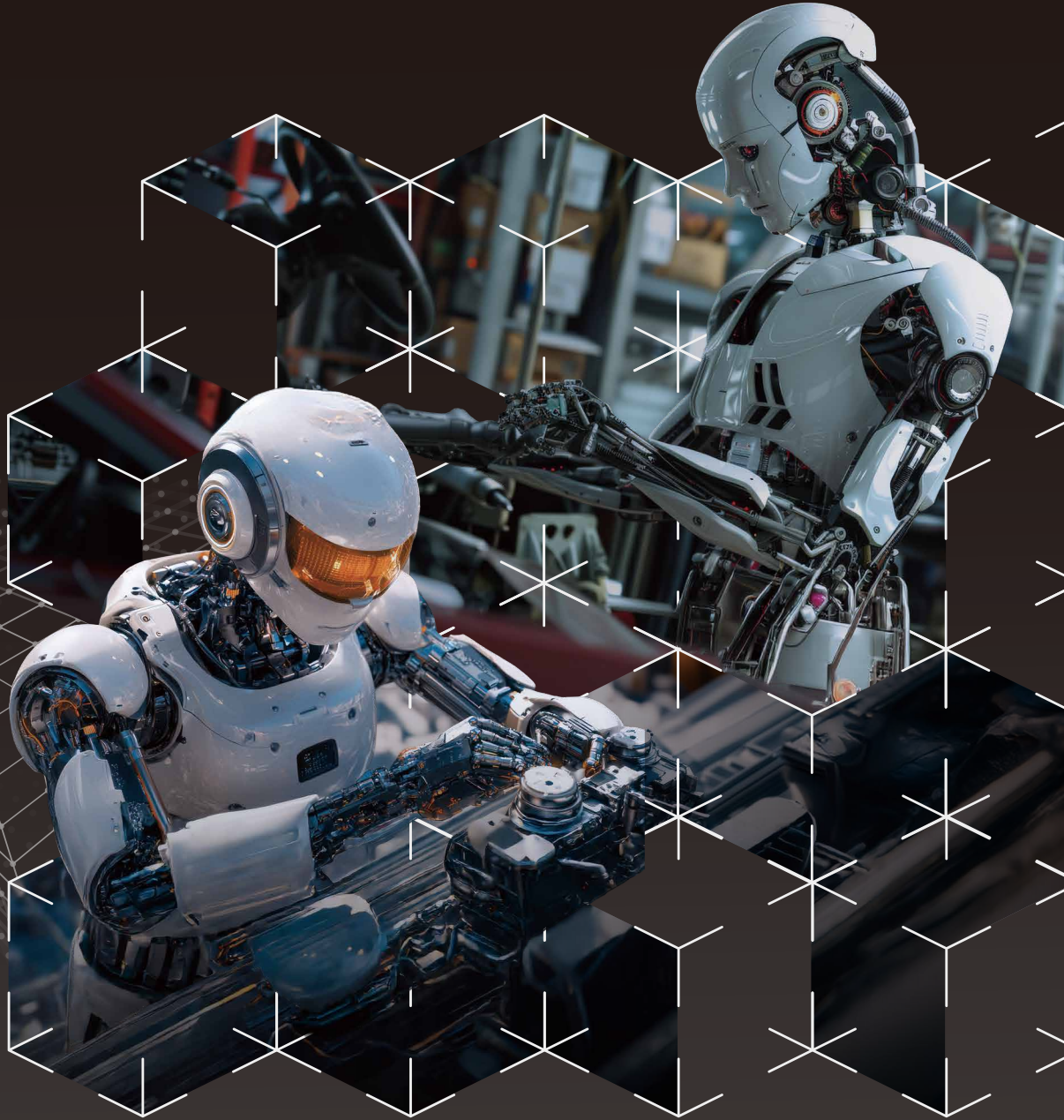


innodisk

APPLIED  
INTELLIGENCE



# EMPOWERING THE NEXT GENERATION OF HUMANOID ROBOTS

As labor costs rise and AI advances, humanoid robots are transforming industries with intelligent perception, precise control, and efficient data processing, addressing labor gaps and safety risks while driving next-generation automation. With comprehensive solutions across edge AI computing, sensing modules, memory and storage, and control modules, Innodisk empowers humanoid robots with speed, intelligence, and reliability.



Fast and Accurate Vision



Low-Latency Control



Efficient Data Processing



## EDGE AI COMPUTING

- Image Processing
- AI Data Analytics
- AI Motion Planning



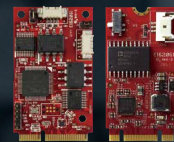
## SENSING MODULE

- Object Recognition
- Environmental Sensing
- Localization



## MEMORY AND STORAGE

- High-speed
- High-capacity
- Reliability

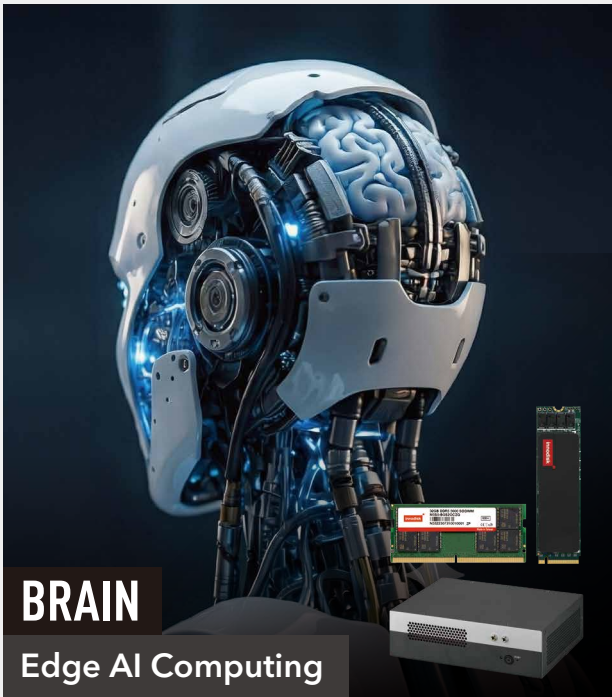


## CONTROL MODULE

- Tactile Feedback
- Actuator Control
- Motion and Joint Control



# INSIDE THE INTELLIGENCE OF HUMANOID ROBOTS



## BRAIN

Edge AI Computing

### HIGH-PERFORMANCE COMPUTING CORE

Serving as the robot's central intelligence, the computing platform acts as its "brain," processing sensory data, making decisions, and controlling motion. Innodisk's APEX Series powers complex AI workloads with high efficiency, available across multiple configurations and paired with customization services to meet the unique demands of each robotics application.

### EFFICIENT, LARGE-CAPACITY MEMORY AND STORAGE

Providing the capacity and stability needed to process massive volumes of visual, audio, and sensor data, memory and storage solutions ensure smooth system operation. Innodisk's DDR5 SODIMM and Flash Storage Series deliver high-speed access and reliable performance in a compact design.



## EYES

Camera Modules

### FAST AND ACCURATE VISION RECOGNITION

Acting as the robot's eyes, the camera module enables vision-based object detection, environmental sensing, and precise positioning. Innodisk's GMSL2™ cameras deliver 3MP resolution and 15-meter transmission range for clear, low-latency imaging in challenging lighting conditions.

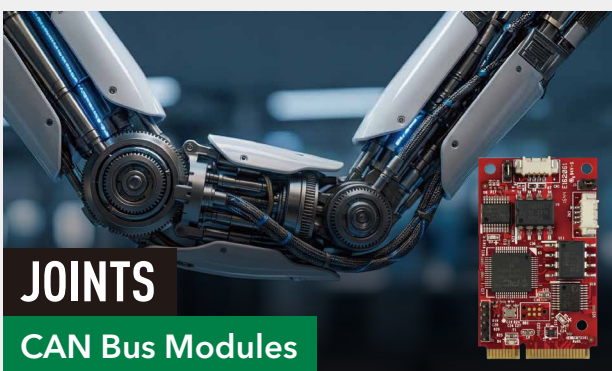


## HANDS

Serial Modules

### LOW-LATENCY COMMUNICATION AND CONTROL

In humanoid robots, hands often require real-time tactile feedback and fine-motion control. Innodisk's Serial Series provides stable, point-to-point transmission with industrial-grade reliability for demanding environments.



## JOINTS

CAN Bus Modules

### ROBUST MULTI-UNIT COORDINATION

Joints in humanoid robots often need synchronized control across multiple units. Innodisk's CAN Bus Series delivers real-time feedback and reliable performance for high-intensity robotic operations.

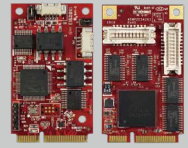
# REAL-WORLD INTELLIGENCE IN ACTION



## AUTOMOTIVE PRODUCTION LINE ROBOT

### INNODISK SOLUTION

- EMUC-B202 CAN Bus Module
- EMP2-X403 Serial Module



In this case, the customer needed to integrate high-speed joint control with RS-232 sensors while overcoming space constraints and ensuring system stability. Innodisk's **EMUC-B202 CAN Bus module** provides a dual-CAN and RS-232-synchronized communication framework, enabling multi-module collaboration and seamless data exchange. Without modifying the core system, the modules deliver **real-time, reliable communication**, accelerating smart production line automation.



## BED-MAKING ROBOT

### INNODISK SOLUTION

- EV3F-ZSM1-RXCF GMSL2™ Camera Module
- DDR5 SODIMM



Service robots for hospitality face challenges in long-distance wiring and stable, high-resolution image transmission. Equipped with **EV3F-ZSM1-RXCF GMSL2™ camera module** and high-speed **DDR5 SODIMM**, the system ensures **low-latency processing** of visual data. This combination enhances **environmental perception and object-recognition accuracy**, enabling precise, real-time collaboration for delicate tasks such as bed-making.



## WALL PAINTING ROBOT

### INNODISK SOLUTION

- EGPC-B1S1 CAN Bus Module



Outdoor coating applications require stable pressure feedback and synchronized control across multiple controllers. However, space constraints and signal interference make integration highly challenging. To overcome these obstacles, Innodisk's **EGPC-B1S1 CAN Bus module** supports **1 Mbps high-speed transmission** and features **2.5kV isolation** with a built-in terminal resistor switch, greatly enhancing **communication reliability and deployment efficiency**. This ensures superior coating quality and reduces long-term maintenance costs.



## SMART FACTORY ROBOT

### INNODISK SOLUTION

- APEX-E100
- M.2 (P80) 4TG2-P SSD



The **APEX-E100** features a heterogeneous CPU/GPU/NPU architecture designed for complex AI workloads in smart factory robotics. Paired with **M.2 4TG2-P NVMe SSDs with PLP (iCell) technology**, it ensures stable storage for critical operational data and system backups. Together, this combination enables **precise obstacle avoidance and fine operations** while maintaining **low power consumption** for extended uptime.



### ABOUT INNODISK

Founded in 2005, Innodisk is a global leader in industrial memory and storage, now advancing into edge AI. From reliable storage to intelligent edge solutions, we empower real-time data, computing, and decision-making to help architect a more intelligent world.

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