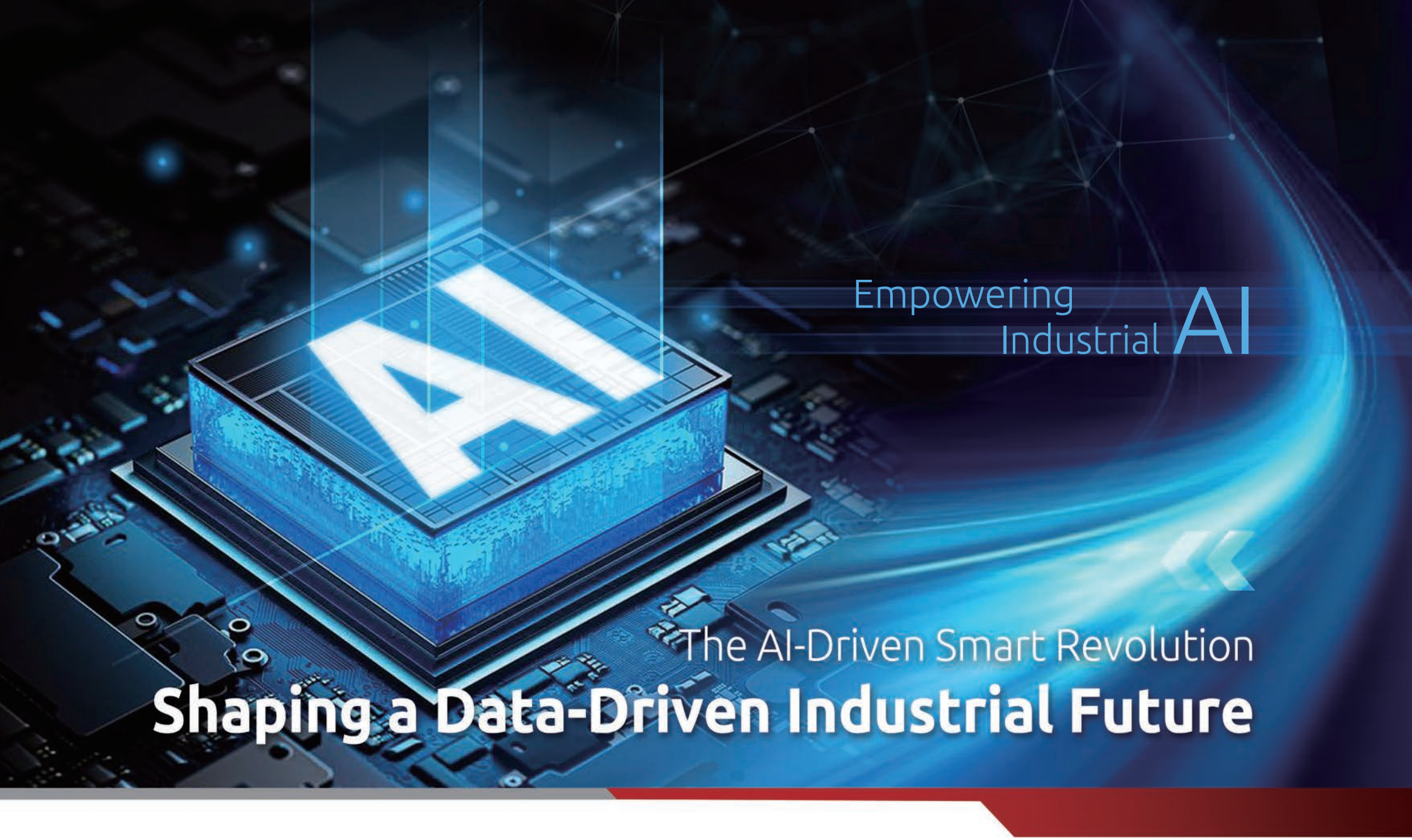


Empowering
Industrial AI

The AI-Driven Smart Revolution

Shaping a Data-Driven Industrial Future

ADLINK®

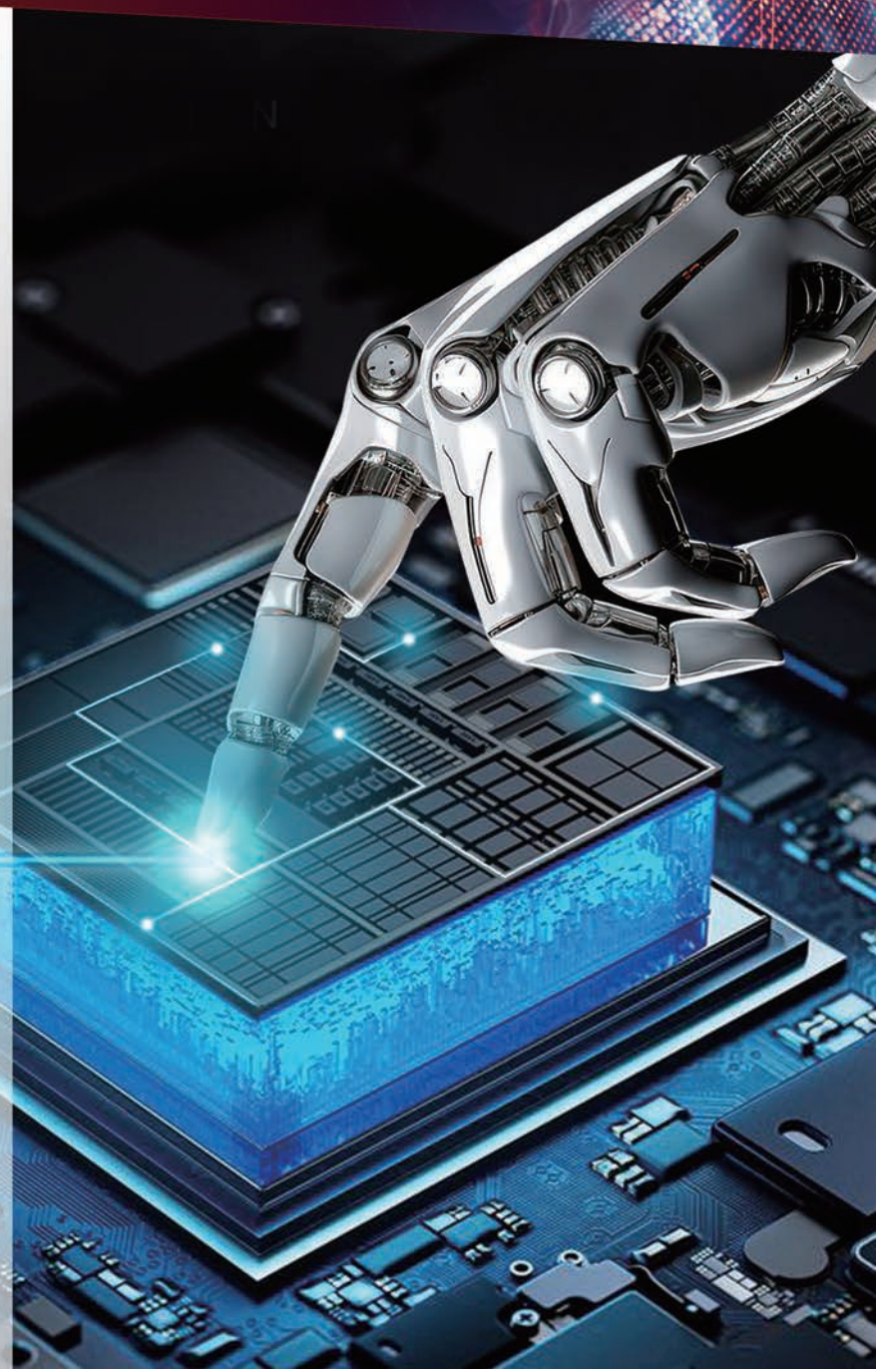
LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

The Future of AI and IPC in Industrial Applications

Industry 4.0 is accelerating worldwide. In the post-pandemic era, businesses are fast-tracking digital transformation, driving strong demands for automation. This shift is fueled by the rapid growth of IoT, which lowers the barriers between AI and Industrial PCs (IPC).

IoT generates massive data, forming the foundation for AI analytics. The rise of edge computing further deepens AI and IPC integration.

After a decade of development, Industry 4.0 has matured. Manufacturers now widely accept intelligent production. Combined with breakthroughs in AI and GPU technologies, this creates a prime opportunity for industrial upgrades—moving from proof-of-concept to full deployment.



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

AI-Driven Intelligence: Key Demands Amid the Industrial AI Wave

As AI technology becomes more integrated with industrial PCs, vertical markets are uncovering new and unique application value.



AI Accelerates Manufacturing Transformation

In manufacturing, AI leverages machine vision and Industrial IoT (IIoT) to boost productivity and quality control.
Smart vision systems with deep learning detect product defects in real time and continuously refine inspection standards. On the maintenance front, AI-driven predictive diagnostics use sensor data to monitor equipment performance and anticipate failures.
These edge AI solutions not only ensure product quality but also reduce unplanned downtime and improve overall efficiency.

AI Enables Smarter Operations Across Sectors

Retail: AI systems with 3D body scanning technology capture customer body profiles to enable hyper-personalized shopping experiences and product recommendations.

Logistics: Autonomous Mobile Robots (AMRs) equipped with AI navigate dynamically using real-time sensing, greatly enhancing warehouse automation and operational efficiency.

Healthcare: High-performance GPUs accelerate medical image analysis, improving diagnostic speed and accuracy for devices like mobile CT scanners.



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Three Core Requirements of the Industrial AI Market

As AI adoption grows across industries, three key market needs have emerged:

High Customizability

AI applications vary widely across environments, each with distinct hardware and performance demands. This is especially critical for mobile and embedded systems, which require an optimal balance of size, power efficiency, and processing capability. System integrators must deliver tailored solutions that align with specific operational needs.

Long-Term Product Stability

Industrial-grade systems must operate reliably over extended periods—far beyond the lifespan of consumer products. For enterprises implementing AI, product stability is essential, with a typical lifecycle expectation of at least 8 years to ensure consistent, long-term performance.

Real-Time Computing at the Edge

Edge AI is becoming the standard in industrial applications. By processing and analyzing data on-site, it eliminates the latency challenges of cloud computing. This real-time capability is critical in environments where immediate decision-making and responsiveness are essential.



Three core AI demands across edge environments.



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Strategic Approaches to AI-Driven Smart Transformation

Successfully adopting AI for intelligent transformation requires careful planning and a phased approach. Key strategies include:

Comprehensive Evaluation

Every enterprise has unique processes. Assess the real value AI can bring to your operations to avoid blindly chasing market trends.

Tailored System Design

AI solutions must be customized to fit the specific characteristics of each production line to maximize effectiveness and ROI.

Phased Implementation

Begin with high-impact applications such as:

- Machine vision for improved quality control
- Predictive maintenance to minimize downtime
- Safety monitoring to enhance operational safety Gradually expand adoption to optimize workflows and achieve full-scale smart transformation.



Industrial PCs: The Foundation of Digital Transformation

Industrial PCs play a critical role with their high customizability, long-term stability, and reliability. Their flexibility allows enterprises to meet diverse industrial needs while ensuring smooth, scalable digital transformation through clear, targeted deployment strategies.



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Leading Intelligent Transformation

ADLINK's Core Technologies and Solutions



As Industry 4.0 and AI technologies accelerate, enterprises face rising demands for intelligence and automation. Yet, success in digital transformation hinges on more than adoption—it requires selecting the right industrial PC architecture, ensuring long-term system stability, and balancing flexibility with scalability.

ADLINK delivers on all fronts. With a comprehensive portfolio of industrial computing products, cutting-edge AI integration, and a global service network, ADLINK empowers enterprises across smart manufacturing, intelligent logistics, medical AI, and more. By combining innovation with industry expertise, ADLINK helps customers build intelligent, efficient, and future-ready solutions. Our mission is to enhance enterprise competitiveness through reliable, scalable technologies—enabling long-term growth, operational sustainability, and success in an evolving market.



Industrial Computers



Fanless Embedded Computers | IIoT Gateways | Robotics Controllers | Edge AI Platforms



Thermal Optimization Design | Complete AI Modules Support | Configuration to Order Services | Function Modules Design | SSD, Wireless Modules

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Flexible Solutions to Meet Diverse Application Needs

ADLINK's AFM Technology Enables Standardized and Customized Expansion

ADLINK addresses both standardized and highly customized application requirements with its innovative **AFM (ADLINK Flexible Module) expansion** technology, designed for:

- **SBC-FM Modules** for 3.5" single board computers (SBCs)
- **AFM Modules** for fanless embedded PCs

SBC-FM Modules provide versatile I/O expansion, supporting interfaces such as PCIe, USB, and LPC/eSPI. Featuring flexible FPC ribbon cable connections, these modules support both vertical and horizontal installation—streamlining integration and enhancing thermal performance in demanding environments. They are ideal for sectors such as industrial automation, transportation, healthcare, and smart cities. ADLINK also offers full design consultation to support custom module development.

For **fanless embedded systems** like the MVP-5200 and MVP-6200, AFM modules enable extensive customization—including tailored connectors, circuit layouts, expansion slots, and industrial-grade I/O interfaces—allowing system integrators to build optimized solutions based on specific application needs.

Key Advantages of AFM Architecture

- Scalable functionality for diverse use cases
- Highly customizable system configurations
- Dedicated technical support to accelerate development

This flexible, high-performance design ensures system stability, reduces development time, and delivers reliable, adaptable industrial PC solutions for mission-critical environments.



Limitless Expansion, Flexible Integration — AFM Modular Design



Flexible Expansion, Infinite Possibilities — SBC35-FM Integration

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Technical Capability and System Adaptability

With a comprehensive industrial computing portfolio, ADLINK delivers intelligent automation solutions tailored to diverse application needs. As a leading industrial PC manufacturer, ADLINK offers a wide range of motherboard form factors, compatible chassis options, and support for multiple processor architectures—including x86 and ARM—enabling customers to configure hardware optimally for specific scenarios.

At the system integration level, ADLINK ensures full system compatibility and seamless functionality. Beyond its core industrial platforms, ADLINK has developed specialized modules such as motion control cards, image capture cards, GPU acceleration cards, and proprietary I/O expansion solutions to enhance performance for AI and automation applications.

A key differentiator is **ADLINK's system pre-validation mechanism:** all peripheral components—including GPU, digital I/O, and data acquisition cards—undergo rigorous compatibility and stress testing. This ensures stable system performance post-integration and helps customers accelerate deployment while reducing integration risks.

Product Reliability and Long-Term Lifecycle Support

ADLINK adheres to stringent industrial-grade quality standards. All products undergo extensive testing—including long-duration operation and vibration resistance—to ensure durability in demanding environments.

Product specifications are tailored by application segment. For mission-critical industries such as automotive and defense, ADLINK offers high-grade designs with specialized I/O, certifications, and custom connectors to meet elevated performance requirements.

ADLINK's long-term supply strategy supports:

- **Standard product availability for 5+ years**
- **Average lifecycle support of 8 years**
- **Up to 10 years for select models**

This extended support, backed by a robust component lifecycle management system, minimizes the cost of maintenance and replacement, protecting customer investment and ensuring operational continuity.

Solution Expertise and Global Service Excellence

ADLINK's global service network delivers localized business engagement and on-site technical support through regional branches and subsidiaries. Local teams, fluent in both language and cultural context, provide tailored, accurate solutions—eliminating cross-cultural barriers and ensuring rapid, precise communication.

To further enhance its ecosystem, ADLINK builds strategic partnerships with local system integrators and software developers. This collaborative model ensures optimal integration of technologies and market responsiveness, allowing customers to receive solutions that reflect both global expertise and local relevance.

This **local-global service synergy** gives ADLINK direct access to market insights, driving continuous product innovation and service improvement. From off-the-shelf products to fully customized solutions, ADLINK's system-level approach ensures each component delivers maximum performance. This customer-centric, integrated service model has become a core competitive advantage in the industrial computing space.



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



Smart Logistics

Innovative Barcode Recognition System

An international logistics center faced the challenge of handling multiple real-time video streams and AI-based analysis, demanding high system performance and stability. ADLINK provided the **IMB-M47 industrial PC solution**, which delivers powerful performance capable of simultaneously managing up to **16 camera connections**, enabling multi-angle package verification.

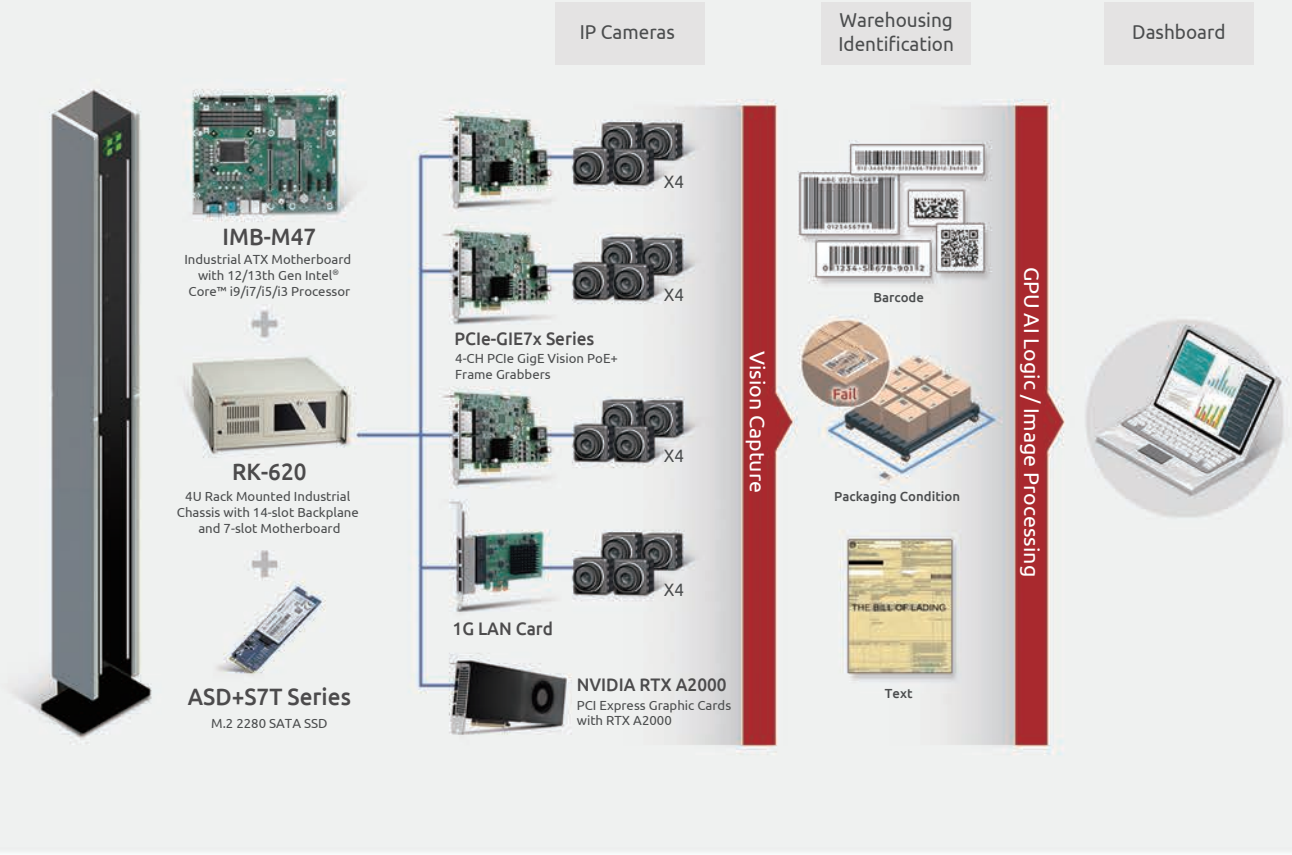
This solution features abundant **PCIe expansion slots**, supporting next-generation specifications such as **PCIe 5.0** and **DDR5**, meeting the high-speed data transmission needs and offering flexible scalability.

By adopting this solution, the customer successfully achieved **warehouse automation**, significantly impr oving logistics efficiency. Through the application of **computer vision technology**, the system effectively reduced issues such as **overages, shortages, and damages** in the supply chain—ultimately enhancing overall service quality.

RK-620



IMB-M47



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



Industrial Application

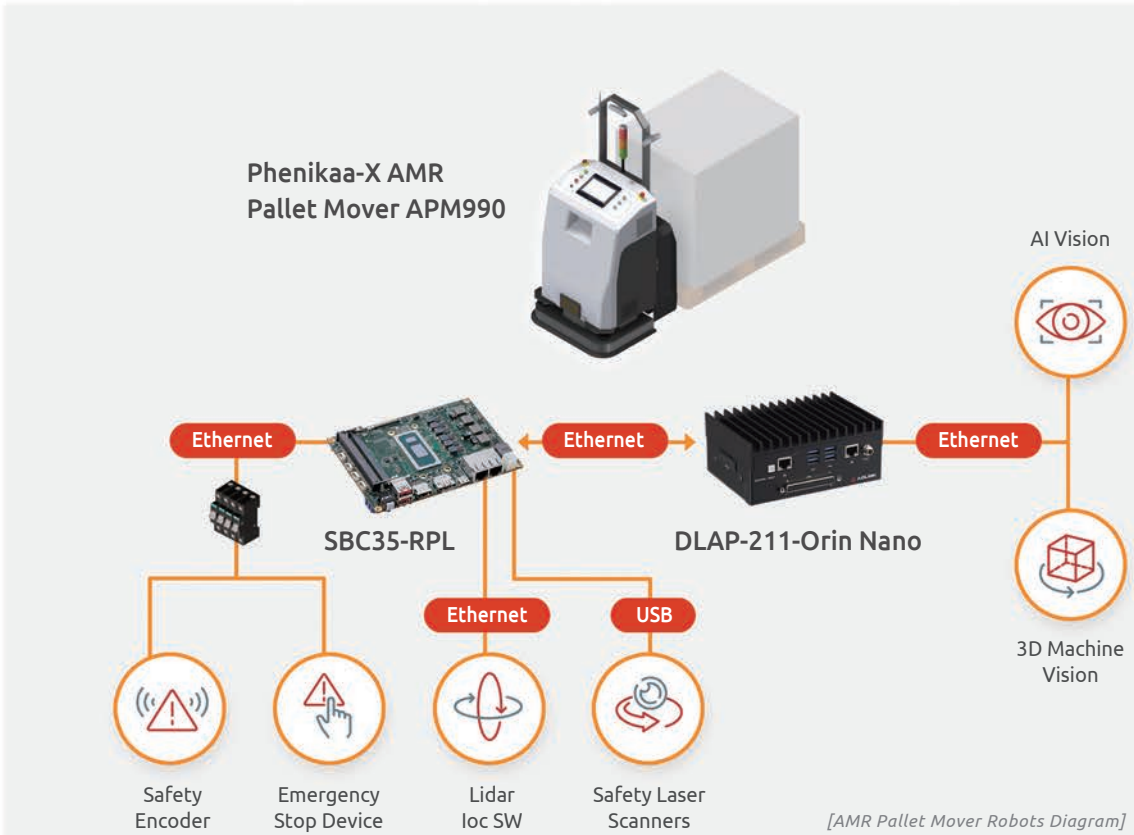
Integrated Solution for Autonomous Mobile Robots (AMRs)

For autonomous mobile robot (AMR) applications, ADLINK offers a comprehensive solution that combines the navigation capabilities of its **SBC35 series 3.5-inch single board computer** with the **AI-powered visual processing** of the **DLAP-211 with NVIDIA Orin Nano**. This integration significantly enhances operational efficiency in logistics and warehouse automation.

By upgrading from traditional systems to **ADLINK's 13th Gen Intel® Core™ i3 platform**, customers gain superior computing performance without increasing costs. The platform also supports seamless integration of safety management systems and scanning technologies through a robust ecosystem of compatible modules.

Additionally, ADLINK's end-to-end support—including pre-sales consultation and implementation assistance—ensures a smooth project rollout and successful deployment.





[AMR Pallet Mover Robots Diagram]

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



Smart Retail

Leveraging 3D Body Scanning Technology

3D body scanning technology is a pivotal element in the smart transformation of the retail industry. However, it demands high system computing power and scalability to perform optimally.

ADLINK addresses these challenges with a comprehensive solution based on its **AmITX series motherboards, equipped with MXM GPUs**. This combination delivers robust AI processing capabilities and offers flexible hardware configurations that can easily be tailored to various use cases.

Designed with industrial-grade durability, this solution ensures consistent performance even under intensive AI workloads. Additionally, ADLINK provides in-depth technical support, enabling customers to reduce development timelines.

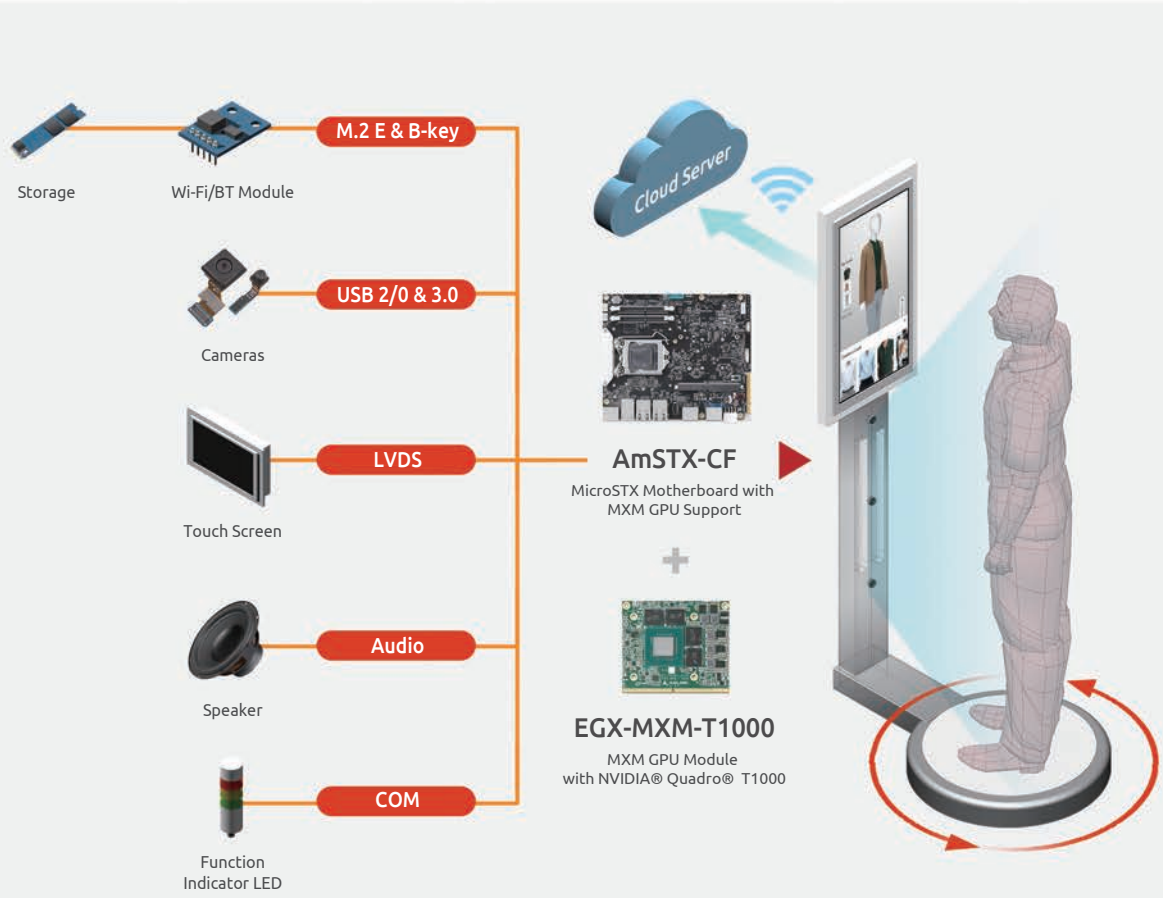
This solution has already been successfully implemented in sectors such as custom apparel, health and wellness, and fashion retail, helping clients elevate the consumer experience.



AmSTX-CF



EGX-MXM-T1000



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Leading the Future of AI-Driven Industrial Computing

The integration of AI with industrial computing is rapidly evolving, focusing on lightweight AI models and enhanced edge computing. ADLINK is committed to advancing core hardware R&D, optimizing processor performance, expanding memory and storage, increasing bandwidth, and refining system power efficiency to support the growing demands of AI applications.

To drive innovation, ADLINK partners with global leaders like Arm, Intel, MediaTek, NVIDIA, and NXP. This collaboration accelerates the implementation of advanced AI applications. As AI becomes more specialized, we expand our industry ecosystem, integrating professional services to deliver complete solutions that create value for our customers.

Pioneering the AI IPC Era

As a leading industrial computer manufacturer, ADLINK leads the AI and IPC convergence with our technical expertise and forward-thinking approach. Our comprehensive product portfolio, flexible customizations, and strong technical support empower industries to achieve intelligent transformation.

Looking ahead, ADLINK will continue to enhance AI and industrial computing integration, focusing on edge computing, software optimization, and system integration. Through innovation, we aim to drive greater value for customers and realize the future of smart manufacturing.

ADLINK Technology
Official Website

ADLINK

Follow ADLINK https://www.adlinktech.com/tw/index

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000