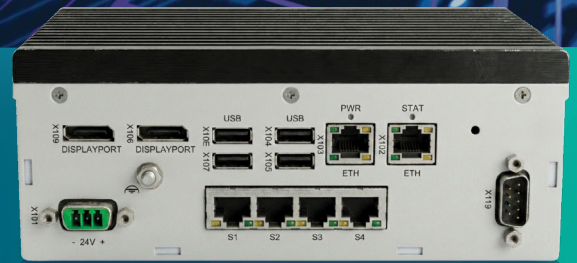


Bringing Physical AI to the Industrial Edge.

THE FACTORY FLOOR DOESN'T WAIT FOR THE CLOUD.
REAL-TIME DECISIONS DEMAND REAL-TIME INTELLIGENCE
— RIGHT WHERE THE ACTION IS.



The Industrial AI Challenge

Modern manufacturing and intralogistics operations are under pressure to do more with less; eliminate defects, predict failures before they happen, and move goods autonomously through dynamic environments. Yet most facilities still rely on:

- › Siloed vision systems that can't scale
- › Cloud-dependent AI with unacceptable latency
- › Reactive maintenance that leads to costly downtime
- › Mobile robots that stop rather than adapt

The result? Lost productivity, safety risks, and missed OEE targets.

Introducing the Solution

Kontron **KBox A-151-EAI** paired with the **SiMa.ai mezzanine board** delivers a unified, industrial-grade edge AI platform engineered for **Physical AI** — intelligent, real-time decision-making at the machine, the line, and the vehicle.

- › Purpose-built ML inference acceleration onboard
- › Up to 4 IP cameras connected directly via Modalix GbE ports
- › Fanless, vibration-resistant, enclosure-ready design
- › ROS 2 compatible for flexible robotics deployment
- › Independent camera networks isolated from fleet and WMS communications

Multi-Modal + GenAI:

Perception

Reasoning

Clear explanations for
real-time decisions at
the edge.

**No vendor lock-ins: Protect investment with
an AI platform you can evolve over time.**

Where It Works

Deployed inside electrical enclosures near CNC cells, assembly stations, and robotic work cells, the KBox A-151-EAI consolidates multiple legacy vision systems into a single, powerful edge AI node.

1

Multi-camera quality inspection, surface defects, dimensional accuracy, OCR/label verification

2

Predictive maintenance via vibration, acoustic, and thermal signature analysis

3

Assembly verification and worker safety zone monitoring

4

Real-time process optimization and anomaly detection

Robotics, AGVs & Intralogistics

Onboard AGVs, AMRs, and collaborative robots, the platform enables 360-degree perception and explainable autonomous navigation across dynamic warehouse environments.

- Multi-camera and LiDAR perception for obstacle avoidance and worker intent prediction
- Semantic segmentation of warehouse floors, dock areas, and no-go zones
- Pick-and-place pose estimation and bin picking
- Fleet coordination with perception offloaded to SiMa.ai

"AGV 5 rerouted: forklift blocking Aisle 2; using alternate path via Aisle 4; delivery delay ~1.5 minutes."



Why Kontron + SiMa.ai?

The combination of **Kontron's industrial-grade hardware** and **SiMa.ai's ML inference acceleration** creates an edge AI platform that is:

- **Reliable** — fanless, ruggedized design built for factory and mobile environments
- **Flexible** — ROS 2 support, containerized workloads, x86 + Modalix deployment options
- **Network Smart** — isolated camera traffic protects fleet and WMS communications
- **Fast** — direct camera-to-AI connectivity eliminates x86 host bottlenecks

Ready to bring Physical AI to your facility?

Contact your Kontron representative or visit kontron.com to learn more about the KBox A-151-EAI and the SiMa.ai collaboration.

