

# Edge AI System

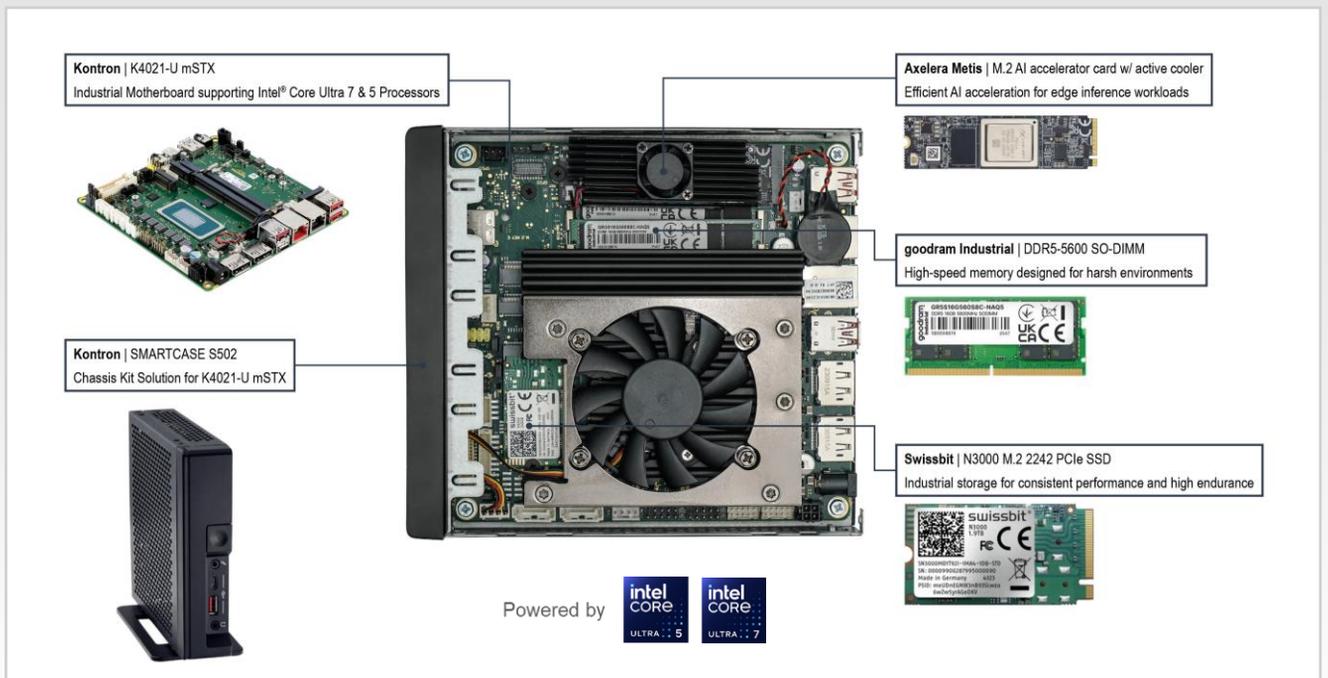
## Compact Intelligence Made in Europe

Rutronik presents an industrial-grade Edge AI kit solution to deliver high-performance AI inference in a compact, rugged form factor based mainly on cutting-edge European technology. The kit is centered around the **Kontron K4021-U mSTX motherboard**, integrated with a **Swissbit industrial SSD**, **goodram Industrial DDR5 memory** and **Axelera Metis AI Inference Accelerator**, all housed in a **Kontron SMARTCASE™ S502**.



Made in EU

### Kit Components:



**Swissbit N3000 M.2 2242 PCIe SSD**  
Industrial storage for consistent performance and high endurance.

**goodram Industrial DDR5-5600 SO-DIMM**  
High-speed memory designed for harsh environments.

**Axelera Metis M.2 AI Accelerator Card**  
Ultra-efficient AI performance with low power consumption and minimal footprint.

**Kontron SMARTCASE™ S502**  
Compact chassis tailored for the K4021-U mSTX board, ideal for space-constrained deployments.

### Why Choose This Kit?

✓ **Made in Europe**

All components are developed and manufactured in Europe, ensuring quality, reliability, and supply chain transparency.

✓ **High AI Performance at Low Footprint**

The Axelera Metis accelerator delivers powerful AI inference capabilities in a compact M.2 form factor, perfect for edge deployments.

✓ **Industrial-Grade Reliability**

Designed for demanding environments, the kit offers long-term availability and robust thermal management.

✓ **System Validated by Rutronik**

Pre-tested components ensure seamless compatibility and fast deployment.



# Edge AI System

## Technical Highlights



### K4021-U mSTX

#### Industrial Motherboard supporting Intel® Core™ Ultra 7 & 5 Processors

- Latest DDR5 memory technology for best-in-class system performance
- Intel® Graphics - driven by Intel® Xe architecture (within SoC)
- Up to 4x concurrent 4K60 HDR displays or 2x 8K displays / Thunderbolt 4
- Dual Channel LVDS (24 Bit) and eDP V1.4b (4K) onboard
- New integrated NPU for dedicated AI acceleration with up to 20x performance/watt improvement



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#### SMARTCASE™ S502



##### Chassis Kit Solution for K4021-U mSTX

- Ultra-Compact Design
- 36 x 147 x 165 mm
- Front & Rear USB
- Horizontal or Vertical Operation
- VESA- and Wall Mount Option
- Security

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#### N3000 M.2 SSD



##### Industrial PCIe M.2 Module

- M.2 2242
- PCIe Gen4 / NVMe 1.4 x4
- 3D NAND TLC up to 1.92 TB
- Temp. range -40 to 85 °C
- High Performance
- AES256 Encryption / TCG Opal 2.0
- Crypto erase / IEEE 1667

**swissbit®**

#### 2x DDR5-5600 SO-DIMM



##### DDR5 SO-DIMM Memory Module

- DDR5 SDRAM
- Unbuffered SODIMM
- 5,600 MHz Data Transfer Rate
- 16 GB capacity
- Temp. range 0 to 85 °C
- Improved memory access speed and efficiency in industrial environments

**goodram industrial**

#### Metis® M.2 AI Card



##### AI Acceleration Card

- M.2 2280 M-key
- PCIe Gen3 x4 – 4 GB/s bidirectional
- 1 GB DRAM (AIPU Memory)
- Up to 214 TOPS
- Temp. range -20 to +70 °C
- Active cooling (optional)
- 3.5 - 9 W Typical App. Power
- Secure Boot, Root of Trust

**AXELERA**  
ARTIFICIAL INTELLIGENCE

## Ideal Target Applications



#### Smart Manufacturing

Real-time defect detection and predictive maintenance



#### Retail Analytics

Customer behavior tracking and inventory optimization



#### Smart Cities

Traffic monitoring, public safety, environm. sensing



#### Healthcare

Edge-based diagnostics and patient monitoring



#### Logistics / Transportation

Object recognition, route optimization

### More Information

Discover more about our Edge AI System - Made in Europe and explore further details and technical support options on our landing page.



<https://www.rutronik.com/edge-ai-system>

### Contact Details

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