intel robotics

KBox A-151-PTL-ROBO



Key Features

- Based on Intel®Core™Ultra 300 Series
- Integrated CPU, GPU, and NPU architecture
- Up to 180 TOPS
- Accelerated AI processing at the edge
- Support for industrial camera interfaces
- Industrial connectivity and I/O options
- Compact, rugged system design
- Designed for long-term industrial use
- AI Vision software
- Camera Interfaces for Visual AI
- GPIO or process interfaces
- Passive cooling concept and extended temperature

Electronics²

Kontron VisionAI Framework

AI-powered optical inspection

Intelligent Defect Detection for Assemblies

Learn more about the possibilities of AI-powered quality inspection. Our experts will be happy to advise you personally.

The self-learning AI platform, based on the Kontron KBox A-151-PTL-ROBO and Vision AI software, compares images of the assemblies being inspected with validated reference images and detects relevant deviations. Through continuous learning, it automatically adapts to different variants and defect patterns. No specialized AI expertise is required.

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The Power of IoT

Unlike conventional AOI systems with fixed rule sets, the AI platform learns autonomously from validated reference images. Using the Kontron KBox A-151-PTL-ROBO and Vision AI software, it analyzes the electronic assemblies being inspected and detects relevant deviations. New inspection data is continuously incorporated into the learning process, enabling the system to adapt to different variants and defect patterns without requiring specialized AI expertise.

4 Steps to Automated Testing

- Capture images
- Let AI learn on its own
- Spot deviations
- Optimize the testing process continuously

How the Solution Works

1. A camera captures an image of the assembly to be inspected.
2. The Vision AI software processes the image data directly on the KBox A-151-PTL-ROBO.
3. The AI platform compares the image data with reference data and detects deviations.
4. The AI is being trained based on the test results.

Typical Inspection Tasks

- Surface and damage inspection
- Completeness and presence inspection
- Orientation and position inspection
- Assembly and component placement inspection
- Inspection of markings and codes
- Quality inspection of different products

Your Benefits

- **Quick to deploy:** The AI can be trained for new inspection tasks directly on site, without the need for a complex training process.
- **Reliable defect detection:** AI-powered analysis detects relevant deviations and quality characteristics.
- **On-device analysis:** Image data is processed directly on site, without being transferred to the cloud.
- **Flexible and adaptable:** Inspection models can be trained with suitable image data for new assemblies, product variants, and defect patterns.
- **Reproducible results:** Consistent evaluation criteria minimize misclassifications and ensure consistent inspection quality.
- **More efficient processes:** Objective evaluation supports manual inspection and simplifies the assessment of inspection results.
- **End-to-end, scalable platform:** A unified Kontron solution combines image acquisition, AI training, and live inspection and can be scaled across multiple inspection stations.

