

Press Release

Next-Generation X-Ray Inspection

GÖPEL electronic Introduces the New Multi Line AXI 3D-CT X-Ray Inspection System

In electronics manufacturing, material and quality testing using X-ray inspection is considered the gold standard for reliability and the highest standards. For years, GÖPEL electronic has been a leader in the field of inspection and non-destructive, comprehensive assembly testing at all levels. With a completely newly developed system platform, the manufacturer now presents next-generation X-ray inspection: The [Multi Line AXI](#) combines outstanding technological innovations with highly versatile application options and multifunctionality, while offering simple operation and rapid adaptability to inspection tasks. The result is an innovative AXI system that sets new standards in X-ray inspection—offering a secure investment and high performance.



Technically, the Multi Line AXI stands out as a state-of-the-art planar 3D-CT X-ray system, offering the highest possible resolution and razor-sharp cross-sectional images. Based on the company's proprietary aspeCT technology, the system achieves new levels of precision and image quality in X-ray inspection. Using a high-resolution, high-speed flat-panel detector, the detailed images are

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transformed into intelligent 3D reconstructions and volumetric 3D images and models of the highest quality. An innovative 7-axis system with synchronized control ensures high-speed, on-the-fly CT imaging in the shortest possible time: In less than 2 seconds, and with 8 µm voxel resolution, the Multi Line AXI offers flexible 2D, 2.5D, and 3D X-ray imaging as needed, using microfocus X-ray tubes and in sub-micrometer increments. This makes the system a highly secure investment and versatile in its application, manufactured entirely in Jena.

In addition to its outstanding technology, the Multi Line AXI has been consistently designed for broad applicability, reliability, and low-maintenance operation. With an 810x535 mm inspection area, a maximum PCBA clearance of 105 mm, and a transport capacity of up to 25 kg in its flexible transport system, both the smallest PCBAs and large power electronics can be inspected quickly and with consistently high quality. Thanks to the use of parts from exclusively European suppliers and German-brand mechanical components, the system is extremely durable and reliable. The Multi Line AXI's platform concept makes upgrades, expansions, and repairs quick and easy. Furthermore, the system can be integrated into any manufacturing or inspection environment—whether inline, at-line, or stand-alone. It interfaces seamlessly with the manufacturer's MES and can be integrated into traceability systems. High repeatability, variable X-ray performance as needed, and adaptability to high-mix, low-volume production are hallmarks of the Multi Line AXI.

However, a system's performance and quality are only the foundation—in everyday use, an AXI system must be quickly adaptable to specific inspection tasks and easy to operate. The Multi Line AXI guarantees this through its seamless integration into the PILOT software platform's user interface, which has also proven itself in GÖPEL AOI systems. Inspection programs are automatically generated using "Magic Click" based on Gerber and assembly data or other CAD formats (ODB++, Process, etc.). For reliable verification, the PASS/FAIL evaluation is supported by intelligent AI assistants. This transforms detailed X-ray images into actionable inspection results—ensuring the quality and security of the PCBA. Short programming times and comprehensive evaluation of results—including precise void calculation and THT fill rate measurement in percent—combined

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with GÖPEL electronic's software and inspection intelligence make the Multi Line AXI practical and suitable for everyday use, intuitive to operate, and customizable

In developing the new X-ray inspection system, GÖPEL electronic also addressed questions about the future: How do we want to manage our resources? As a result, the Multi Line AXI is designed as a "Lean & Green Machine" focused on resource conservation, energy efficiency, and sustainability. The manufacturer has deliberately omitted pneumatic components and compressed air, which not only simplifies installation and operation but also reduces maintenance and operating costs. With its lightweight design—weighing just 2.7 metric tons and featuring a compact footprint of 1600x1660—this X-ray system requires no special structural preparations and can be installed quickly and easily in virtually any environment. Based on GÖPEL electronic's many years of experience, the system is designed from the outset to be durable, upgradeable, and reusable, with easy access for service and maintenance.

The new [Multi Line AXI X-ray inspection system](#) is available from GÖPEL electronic.

About GÖPEL electronic

GÖPEL electronic develops and manufactures innovative electrical and optical test, measurement, and inspection equipment for electronic components and printed circuit board assemblies as well as industrial and automotive electronics systems. GÖPEL electronic has four business units:

- Automotive Test Solutions
- Embedded JTAG Solutions
- Inspection Solutions AOI-AXI-SPI-IVS
- Industrial Function Test

The company is active worldwide, with its own subsidiaries as well as through distributors, and generated sales of approximately 40 million euros in 2023 with 240 employees.

Further information: www.goepel.com/en

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