CX54x0 Embedded PC series

Next-generation multi-core computing power on the DIN rail

With the new CX54x0 series, the Intel Atom® x7 CPU generation is now also available for Beckhoff's compact embedded PCs. With a choice of two, four, or eight CPU cores, 8 or 16 GB of RAM, and two independent 2.5 Gbit Ethernet interfaces, the series covers a wide range of applications – from traditional PLC applications to graphics-intensive HMI applications – without a fan and without the need for additional couplers in the control cabinet.

The DIN-rail-mountable CX54x0 Embedded PCs are equipped with Intel Atom® x7000RE processors and deliver next-generation CPU and graphics performance in the form factor of the proven CX5000 family. Scaling across two, four, or eight cores allows machine builders to tailor their control architecture precisely to the application and to rely on the same hardware platform across product lines.

In their basic configuration, the devices feature two independent 2.5 Gbit Ethernet interfaces, four USB 3.1 ports, one DisplayPort interface, and a multi-option interface that can be flexibly equipped ex factory. The multi-pin connector on the left-hand side of the device now allows up to two CX2500-xxxx system or fieldbus modules to be plugged in, instead of just one, as was previously the case. On the right-hand side, the entire range of EtherCAT Terminals and K-bus terminals can be connected. Eliminating the need for separate bus couplers reduces wiring work, material costs, and space requirements.

The CX54x0 series features an internal EtherCAT master port that is routed to the I/O level and automatically switches to the K-bus terminal

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system if necessary. Both Ethernet ports can be used for both standard IT connections and as additional EtherCAT master interfaces. With an EtherCAT slave interface in the multi-option interface, several controllers can be synchronized via an EtherCAT network.

For the first time, the CX5000 family of embedded PCs offers up to eight processor cores. Multi-core CPUs really show their strengths when used alongside TwinCAT 3: PLC projects can be distributed across several cores, resulting in significantly higher performance. All motion control functions are fully available. As the TwinCAT 3 real-time core strictly manages resources, there is sufficient processing time available for the user interface in addition to the control tasks executed in real time. The integrated graphics unit facilitates demanding visualizations with modern user interfaces directly on the controller.

The new embedded PCs are designed specifically for continuous industrial operation: The electrically isolated 24 V DC power supply is UPS OCT-capable and the integrated capacitive 1-second UPS reliably backs up persistent application data to the interchangeable CFast card. Fanless cooling reduces maintenance requirements and the extended operating temperature range from -25 to +60°C means the devices are suitable for use in challenging climatic conditions. The CX54x0 series supports Windows 11, TwinCAT/BSD, and Beckhoff RT Linux®.

➔ www.beckhoff.com/cx54xx

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Press picture:



Picture caption:

The CX54x0 Embedded PC series brings up to eight CPU cores powered by Intel Atom® x7, up to 16 GB of RAM, and 2.5 Gbit Ethernet to the DIN rail, while also allowing up to two system or fieldbus modules to be connected.

Press kit:

www.beckhoff.com/media/downloads/press/2026/pr372026_beckhoff.zip

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