



Great news for PC Control!

Recent developments at Intel can be regarded as both an endorsement of PC-based control technology and as good news for automation technology. With the new generation of Intel® processors such as Intel® Atom™ on one hand and multi-core on the other, the scalability of PC-based control technology is further increased.

In addition to a cleverly chosen marketing name, Intel® Atom™ offers impressive specifications: the Z530 CPU, with a clock frequency of 1.6 GHz, uses just 2.5 Watts and has a chip size of only 13 x 14 mm. The associated US15W system chip combines north- and southbridge functions on an area of just 22 x 22 mm and uses a maximum of 2 Watts. Together with DDR2RAM and Ethernet controllers, it can be used to configure a PC system with a power consumption of around 8 to 10 Watts.

Due to their low average CPU power, these moderately priced controllers can be very compact. They offer potential for optimization in a wide range of applications.

Further customer benefits arise from the fact that Atom™, with its x86 architecture, supports Windows XP and Windows XP Embedded in addition to Windows CE. With ready-made software for Windows XP, the customers benefit from automatic investment protection.

Thanks to in-house motherboard development, Beckhoff is able to utilize these features by installing the Atom™ processor in space-saving devices that offer plenty of reserve computing power capacity for a wide range of applications. Examples include the CP77xx series Panel PCs that combine a TFT display and electronic PC components in a solid IP 65 aluminum housing that is only 30.5 mm

deep. Or the miniature PC from the C6915 series, a device that can be installed in a control cabinet, is equipped with three Ethernet interfaces and offers all other standard PC features. And, last but not least, the CX5000 Embedded PC series, which offers direct connection to EtherCAT or Bus Terminals on a DIN rail. In terms of computing power, Beckhoff intends to position the device slightly below a 1 GHz Intel® Celeron® M, while the graphics performance of the Atom™ processor exceeds that of the 1 GHz Celeron® M.

Thanks to the low thermal power dissipation of the Atom™ processors, all Beckhoff devices equipped with it are fanless. Depending on the device design, Compact Flash or solid-state drives are used as storage media and form a robust hardware platform for PC-based automation.

With the development of efficient Atom™ processors, Intel sets its sights on applications currently dominated by ARM and MIPS architectures – and therefore by manufacturers such as Freescale or Texas Instruments. The contest is open, although Intel has some way to go in view of the fact that current ARM processors show a power consumption of less than half a Watt and offer complete, system-on-a-chip design. Although, to be fair, it is worth noting that in terms of pure computing power, Atom™ plays in a higher league, so to speak.

Multi-core technology is also good news for automation since it forms the roadmap for further performance increases.

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