COM Express goes ultra-low power thanks to 4th Generation Intel® Core™ single chip

The congatec conga-TC87 COM Express compact module is equipped with the new embedded processors of the Intel® Core™ U-Series. Despite offering greater performance, the maximum thermal design power is only 15 watts.

Deggendorf, Germany, 1 September 2013 *** congatec AG, a leading manufacturer of embedded computer modules, announces immediate availability of the conga-TC87 Type 6 COM Express compact module supporting 4th Generation Intel® Core™ processors. It is a low-power single-chip solution, codenamed Haswell-ULT, with integrated chipset (PCH) and graphics. Despite increased performance, the maximum thermal design power (TDP) is a mere 15 watts.

The 4th Generation Intel® Core™ processors are an optimization of the existing microarchitecture. Improvements include new microcode and extended registers, an expansion of the vector processing unit, larger and much more powerful graphics units, as well as standard hardware support for AES encryption in all models. Unique features of the Intel® Core™ i7-4650U and i5-4300U are revised power
management; expanded, individually configurable turbo-boost modes; extensive TDP configuration management for adapting to the chosen cooling solution. Models of the Haswell U-Series integrate the processor controller hub (PCH) as multi-die in the same package. Compared to previous Core i processor models, such as the i7-3517UE, it is possible to save not only 2 watts of TDP, but also approximately 4 watts previously required for the separate PCH solution. Further savings come from the new voltage regulator units which are also integrated in the housing. In total, power consumption is about a third lower compared to the previous generation.

The conga-TC87 can currently be equipped with the embedded dual-core single-chip processors Intel Core i7-4650U, i3/i5-4300U or i3-4010U. For each of these processors, the appropriate chipset is integrated in the housing. The module supports fast and energy-efficient dual-channel DDR3L memory up to 16GB.

The integrated graphics is considerably more powerful than preceding versions and supports Intel® flexible display interface (FDI), DirectX 11.1, OpenGL 4, OpenCL 1.2 and high-performance, flexible hardware decoding to decode multiple high-resolution full HD videos in parallel. 4K resolution with up to 3840 x 2160 pixels for DisplayPort is natively supported. It is also possible to connect up to three independent display interfaces via HDMI, LVDS and embedded DisplayPort (eDP). When using DisplayPort, the individual displays can be daisy chained to take advantage of simple wiring. Native USB 3.0 support provides fast data transmission with low power consumption. A total of eight USB ports are provided, two of them support USB 3.0 Superspeed. Four PCI Express 2.0 lanes, four SATA ports with up to 6 Gb/s, RAID support and a Gigabit Ethernet interface enable fast and flexible system extensions. Active fan control, LPC bus for easy integration of legacy I/O interfaces, LPC bus and Intel® High Definition audio complete the feature set.

The strength of this new COM Express compact module lies in the flexibility and scalability of the graphics and processing power; and superior performance within a maximum TDP power envelope of 15 watts. All of this makes the conga-TC87 an ideal solution for high-performance mobile systems.
The following CPU versions are available:

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AES-NI: Advanced Encryption Standard Instructions
AVX: Advanced Vector Extensions
AMT: Active Management Technology
TXT: Trusted Execution Technology
VT-x: Intel Virtualization Technology
VT-d: Intel Virtualization Technology for Directed I/O

About congatec AG
congatec AG has its head office in Deggendorf, Germany and is a leading supplier of industrial computer modules using the standard form factors Qseven, COM Express, XTX and ETX. congatec's products can be used in a variety of industries and applications, such as industrial automation, medical technology, automotive supplies, aerospace and transportation. Core knowledge and technical know-how includes unique extended BIOS features as well as comprehensive driver and board support packages. Following the design-in phase, customers are given support via extensive product lifecycle management. The company's products are manufactured by specialist service providers in accordance with modern quality standards. Currently congatec has 141 employees and entities in Taiwan, Japan, USA, Australia and the Czech Republic. More information is available on our website at www.congatec.com or via Facebook, Twitter and YouTube.

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