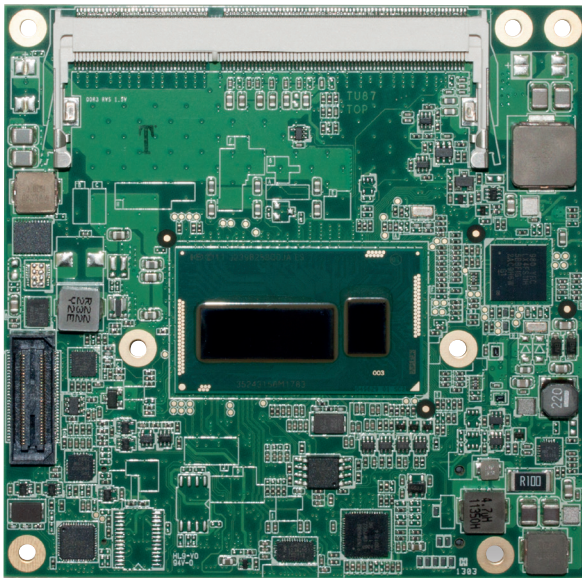


# FAST AND COMPACT

# conga-TC87

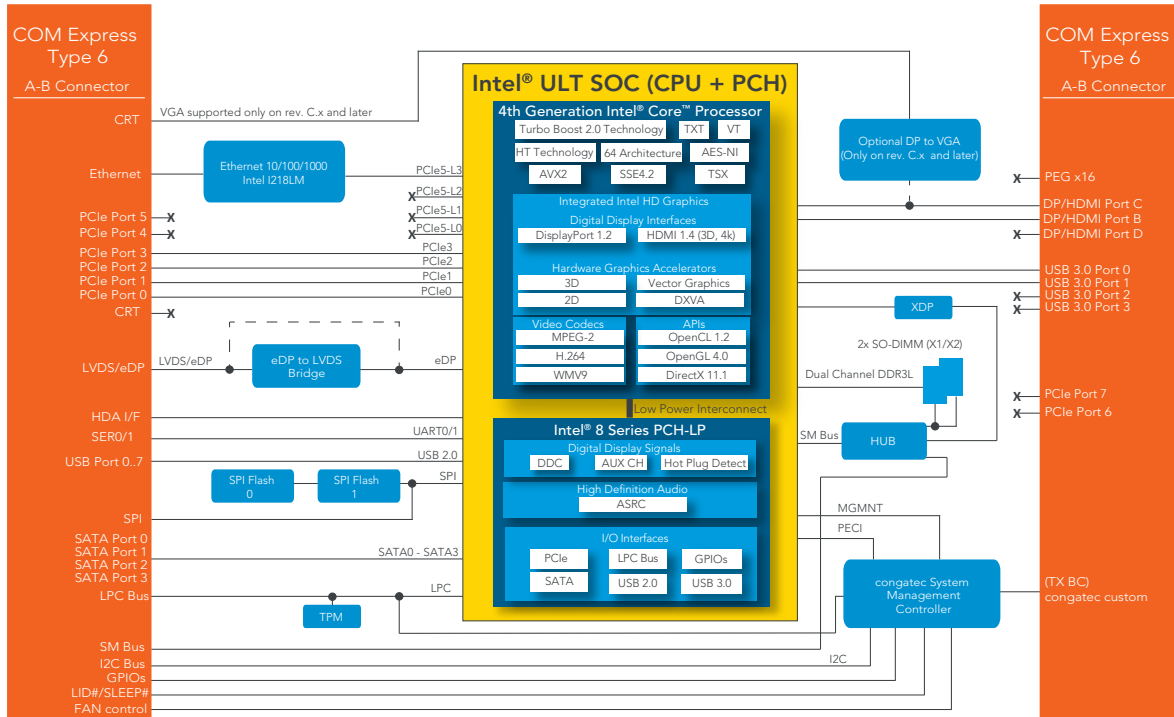


- 4<sup>th</sup> Gen. Intel® Core™ i7 dual core processor
- 3x DisplayPort 1.2, up to 4k resolution
- Intel® AVX 2.0 Vector extension for improved floating point computing
- COM Express Compact Type 6 module

**COM**  **Express®**

Formfactor	COM Express® Compact, (95 x 95 mm), Type 6 Connector Layout				
CPU	Intel® Core™ i7-4650U	1.7 GHz Dual Core	Turbo Boost 3.3 GHz	cache 4MB	15W TDP configurable to 11.5W, AES-NI, AVX2, AMT 9.5, TXT
	Intel® Core™ i5-4300U	1.9 GHz Dual Core	Turbo Boost 2.9 GHz	cache 3MB	15W TDP configurable to 11.5W, AES-NI, AVX2, AMT 9.5, TXT
	Intel® Core™ i3-4010U	1.7 GHz Single Core		cache 3MB	15W TDP AES-NI, AVX2
	Intel® Celeron® 2980U	1.6 GHz Single Core		cache 3MB	15W TDP
	Intel® Turbo Boost Technology, Intel® Hyper-Threading Technology (Intel® HT Technology), Intel® Advanced Vector Extensions 2.0 (Intel® AVX2), Intel® Advanced Encryption Standard New Instructions (Intel® AES-NI), Integrated dual channel memory controller, up to 25.6 GByte/sec. memory bandwidth, Integrated Intel® HD Graphics 5000 series with dynamic frequency up to xxGHz, Intel® Clear Video HD Technology Intel® Virtualization Technology (Intel® VT), Intel® Trusted Execution Technology (Intel® TXT), Intel® Streaming SIMD Extensions 4.2 (Intel® SSE4.2), PCLMULQDQ Instruction, Intel® Secure Key, Intel® Transactional Synchronization Extensions (Intel® TSX)				
DRAM	2 Sockets, SO-DIMM DDR3L@1.35V up to 1600MT/s and 16GByte				
Chipset	Integrated mobile Intel® 8 Series Chipset: Intel® QM87 / HM86 @ planned Celeron variants				
Ethernet	Intel® I218-LM GbE LAN Controller with AMT 9.5 support				
I/O Interfaces	4x PCI Express™ GEN. 2.0 lanes, 4x Serial ATA® RAID 0/1/5/10 support, 2x ExpressCard®, 2x USB 3.0 (XHCI), 8x USB 2.0 (EHCI), LPC bus, I <sup>2</sup> C bus (fast mode, 400 kHz, multi-master)				
Sound	Digital High Definition Audio Interface with support for multiple audio codecs				
Graphics	Next Generation Intel® HD Graphics with OpenCL 1.2, OpenGL 4.0 and DirectX11.1 support; up to three independent displays: HDMI 1.4, DVI, DisplayPort 1.2; High performance hardware MPEG-2 decoding, WMV9 (VC-1) and H.264 (AVC) support Blu-ray support @ 40 MBit/s				
LVDS (eDP optional)	Dual channel LVDS transmitter, Supports flat panels 2x24 Bit interface, VESA mappings, resolutions up to 1920x1200, Automatic Panel Detection via EDID/EPI				
Digital Display Interface (DDI)	2x TMDS (HDMI) / DisplayPort 1.2a with daisy chaining, resolutions up to 4k				
congatec Board Controller	Multi Stage Watchdog, non-volatile User Data Storage, Manufacturing and Board Information, Board Statistics, BIOS Setup Data Backup, I <sup>2</sup> C bus (fast mode, 400 kHz, multi-master), Power Loss Control				
Embedded BIOS Features	AMI Aptio® UEFI 2.x firmware, 8 MByte serial SPI firmware flash				
Security	The conga-TC87 can be optionally equipped with a discrete "Trusted Platform Module" (TPM). It is capable of calculating efficient hash and RSA algorithms with key lengths up to 2,048 bits and includes a real random number generator. Security sensitive applications such as gaming and e commerce will benefit also with improved authentication, integrity and confidence levels.				
Power Management	ACPI 4.0 with battery support				
Operating Systems	Microsoft® Windows 8, Microsoft® Windows 7, Linux, Microsoft® Windows embedded Standard				
Power Consumption	Typ. application: tbd., see User's Guide for full details, CMOS Battery Backup Ultra low standby power, support for CPU power states up to C10				
Temperature	Operating: 0 .. +60°C Storage: -20 .. +80°C				
Humidity	Operating: 10 - 90% r. H. non cond. Storage: 5 - 95% r. H. non cond.				
Size	95 x 95 mm (3.74" x 3.74")				

# conga-TC87 | Block diagram



# conga-TC87 | Order Information

Article	PN	Description
conga-TC87/i7-4650U	046901	COM Express Type 6 Compact module with Intel® Core™ i7-4650U dual core processor with 1.7GHz, 4MB L2 cache and 1600MT/s dual channel DDR3L memory interface.
conga-TC87/i5-4300U	046902	COM Express Type 6 Compact module with Intel® Core™ i5-4300U dual core processor with 1.9GHz, 3MB L2 cache and 1600MT/s dual channel DDR3L memory interface.
conga-TC87/i3-4010U	046903	COM Express Type 6 Compact module with Intel® Core™ i3-4010U dual core processor with 1.7GHz, 3MB L2 cache and 1600MT/s dual channel DDR3L memory interface.
conga-TC87/2980U	046904	COM Express Type 6 Compact module with Intel® Celeron® Processor 2980U dual core processor with 1.6GHz, 2MB L2 cache and 1600MT/s dual channel DDR3L memory interface.
conga-TC87/i5-4300U VGA	046906	COM Express Type 6 Compact module with Intel® Core™ i5-4300U dual core processor with 1.9GHz, 3MB L2 cache and 1600MT/s dual channel DDR3L memory interface. Features legacy VGA display interface.
conga-TC87/i3-4010U VGA	046907	COM Express Type 6 Compact module with Intel® Core™ i3-4010U dual core processor with 1.7GHz, 3MB L2 cache and 1600MT/s dual channel DDR3L memory interface. Features legacy VGA display interface.
conga-TC87/2980U VGA	046908	COM Express Type 6 Compact module with Intel® Celeron® Processor 2980U dual core processor with 1.6GHz, 2MB L2 cache and 1600MT/s dual channel DDR3L memory interface. Features legacy VGA display interface.
TC87/HSP-B	046953	Standard heatspreader for COM Express module conga-TC87. All standoffs are with 2.7mm bore hole.
TC87/HSP-T	046954	Standard heatspreader for COM Express module conga-TC87. All standoffs are M 2.5 threaded.
TC87/CSP-B	046951	Standard passive cooling solution for COM Express module conga-TC87. All standoffs are with 2.7mm bore hole.
TC87/CSP-T	046952	Standard passive cooling solution for COM Express module conga-TC87. All standoffs are M 2.5 threaded
DDR3L-SODIMM-1600 (2GB)	068755	DDR3L SODIMM memory module with 1600 MT/s (PC3L-12800S) and 2GB RAM
DDR3L-SODIMM-1600 (4GB)	068756	DDR3L SODIMM memory module with 1600 MT/s (PC3L-12800S) and 4GB RAM
DDR3L-SODIMM-1600 (8GB)	068757	DDR3L SODIMM memory module with 1600 MT/s (PC3L-12800S) and 8GB RAM
<b>Accessories</b>		
conga-TEVAL	065800	Evaluation carrier board for Type 6 COM-Express-modules
conga-LDVI/EPI	011115	LVDS to DVI converter board for digital flat panels with onboard EEPROM
COM-Express-carrier-board-Socket-5	400007	Connector for COM-Express carrier boards, height 5mm, packing unit 4 pieces
COM-Express-carrier-board-Socket-8	400004	Connector for COM-Express carrier boards, height 8mm, packing unit 4 pieces