

# conga-TC87 COM Express® Type 6 Compact module

## conga-TC87

Highest Performance COM Express Type 6

4th Generation Intel® Core™ processor family

Better transcode HD-HD, HD Video Conferencing

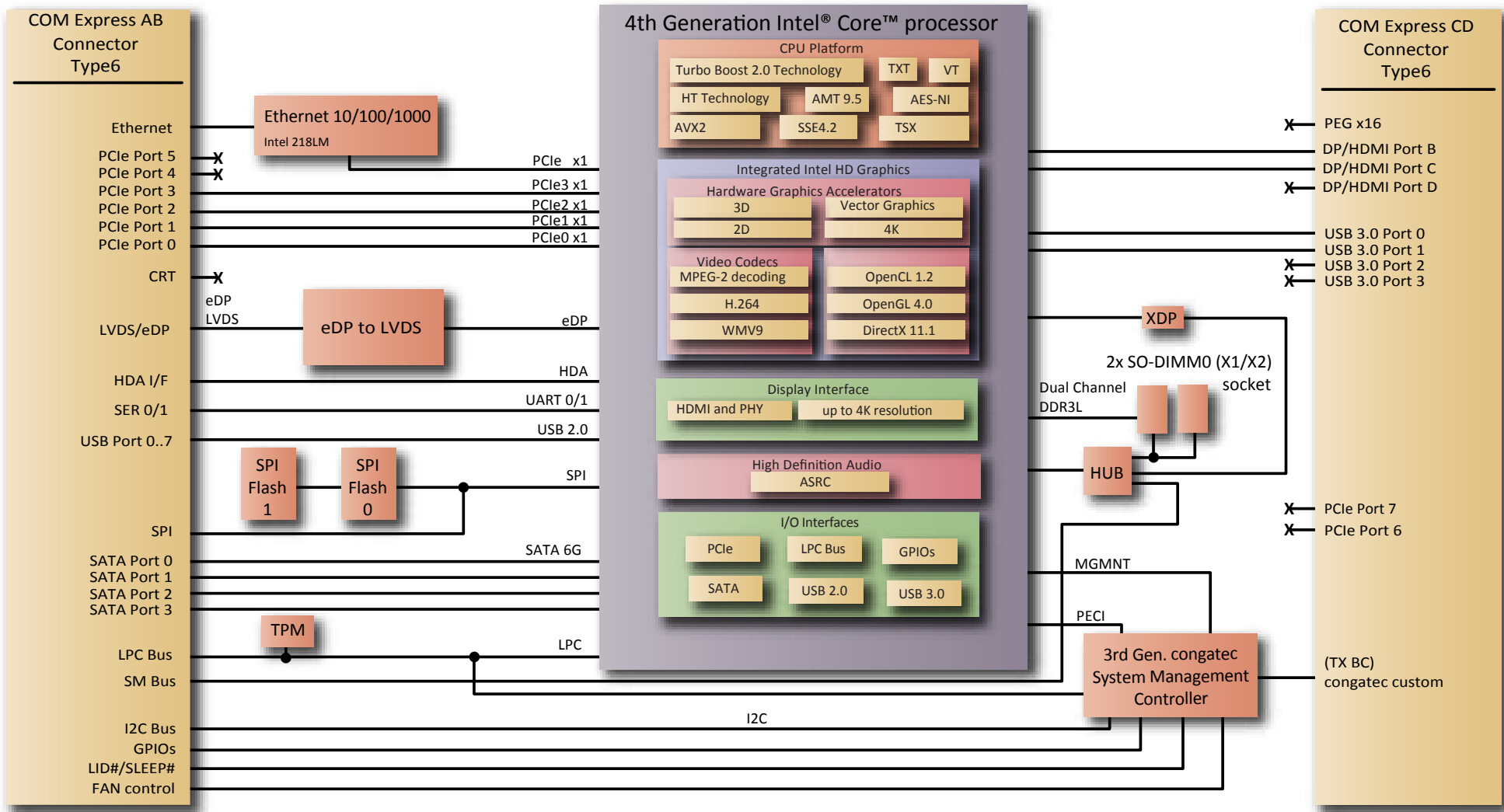
Improved Graphics Performance, DirectX®11

Ultra low standby power consumption



<b>Formfactor</b>	<b>COM Express® Compact, (95 x 95 mm), Type 6 Connector Layout</b>
<b>CPU</b>	Intel® Core™ i7-4650U Dual Core, 1.7 GHz, Turbo Boost 3.3 GHz, 4M Cache, TDP 15W configurable to 11.5W, AES-NI, AVX2, AMT 9.5, TXT Intel® Core™ i5-4300U Dual Core, 1.9 GHz, Turbo Boost 2.9 GHz, 3M Cache, TDP 15W configurable to 11.5W, AES-NI, AVX2, AMT 9.5, TXT Intel® Core™ i3-4010U Dual Core, 1.7 GHz, 3M Cache, TDP 15W, AES-NI, AVX2 Intel® Celeron® 2980U Quad Core, 1.6 GHz, 3M Cache, TDP 15W
	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)
<b>DRAM</b>	2 Sockets, SO-DIMM DDR3L@1.35V up to 1600MT/s and 16GByte
<b>Chipset</b>	Integrated mobile Intel® 8 Series Chipset: Intel® QM87 / HM86 @ planned Celeron variants
<b>Ethernet</b>	Intel® I218-LM GbE LAN Controller with AMT 9.5 support
<b>I/O Interfaces</b>	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, I²C bus (fast mode, 400 kHz, multi-master)
<b>Sound</b>	Digital High Definition Audio Interface with support for multiple audio codecs
<b>Graphics</b>	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
<b>LVDS</b>	Dual channel LVDS transmitter, Supports flat panels 2x24 Bit interface, VESA mappings, resolutions up to 1920x1200, Automatic Panel Detection via EDID/EPI
<b>Digital Display Interface (DDI)</b>	3x TMDS (HDMI) / DisplayPort 1.2a with daisy chaining, resolutions up to 4k
<b>congatec Board Controller</b>	Multi Stage Watchdog, non-volatile User Data Storage, Manufacturing and Board Information, Board Statistics, BIOS Setup Data Backup, I²C bus (fast mode, 400 kHz, multi-master), Power Loss Control
<b>Embedded BIOS Features</b>	AMI Aptio® UEFI 2.x firmware, 8 MByte serial SPI firmware flash
<b>Security</b>	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.
<b>Power Management</b>	ACPI 4.0 with battery support
<b>Operating Systems</b>	Microsoft® Windows 8, Microsoft® Windows 7, Linux, Microsoft® Windows® embedded Standard
<b>Power Consumption</b>	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
<b>Temperature:</b>	Operating: 0 .. +60°C Storage: -20 .. +80°C
<b>Humidity Operating:</b>	Operating: 10 - 90% r. H. non cond. Storage: 5 - 95% r. H. non cond.
<b>Size</b>	95 x 95 mm (3.74" x 3.74")

# conga-TC87 - Block diagram



# conga-TC87 - Order information

Article	PN	Description
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/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/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/HSP-B	046953	Standard heatspreader for COM Express module conga-TC87. All stand-offs are with 2.7mm bore hole.
conga-TC87/HSP-T	046954	Standard heatspreader for COM Express module conga-TC87. All stand-offs are M2.5 threaded.
conga-TC87/CSP-B	046951	Standard passive cooling solution for COM Express module conga-TC87. All standoffs are with 2.7mm bore hole.
conga-TC87/CSP-T	046952	Standard passive cooling solution for COM Express module conga-TC87. All standoffs are M 2.5 treaded.
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 1600MT/s (PC3L-12800S) and 4GB RAM
DDR3L-SODIMM-1600 (8GB)	068757	DDR3L-SODIMM memory module with 1600MT/s (PC3L-12800S) and 8GB RAM

## Engineering Tools / Accessories for COM Express®

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-carrierboard-Socket-5	400007	Connector for COM-Express carrier boards, height 5mm, packing unit 4 pieces
COM-Express-carrierboard-Socket-8	400004	Connector for COM-Express carrier boards, height 8mm, packing unit 4 pieces

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