

# conga-TS87 - COM Express® Type 6 module

## conga-TS87

COM Express Type 6 pinout Basic form factor

4th Gen. Intel® Core® i7 processor up to 2.4 GHz

3x DisplayPort 1.2, up to 4k resolution  
(QFHD=3840x2160@60Hz)

Up to 13% higher computing performance\*

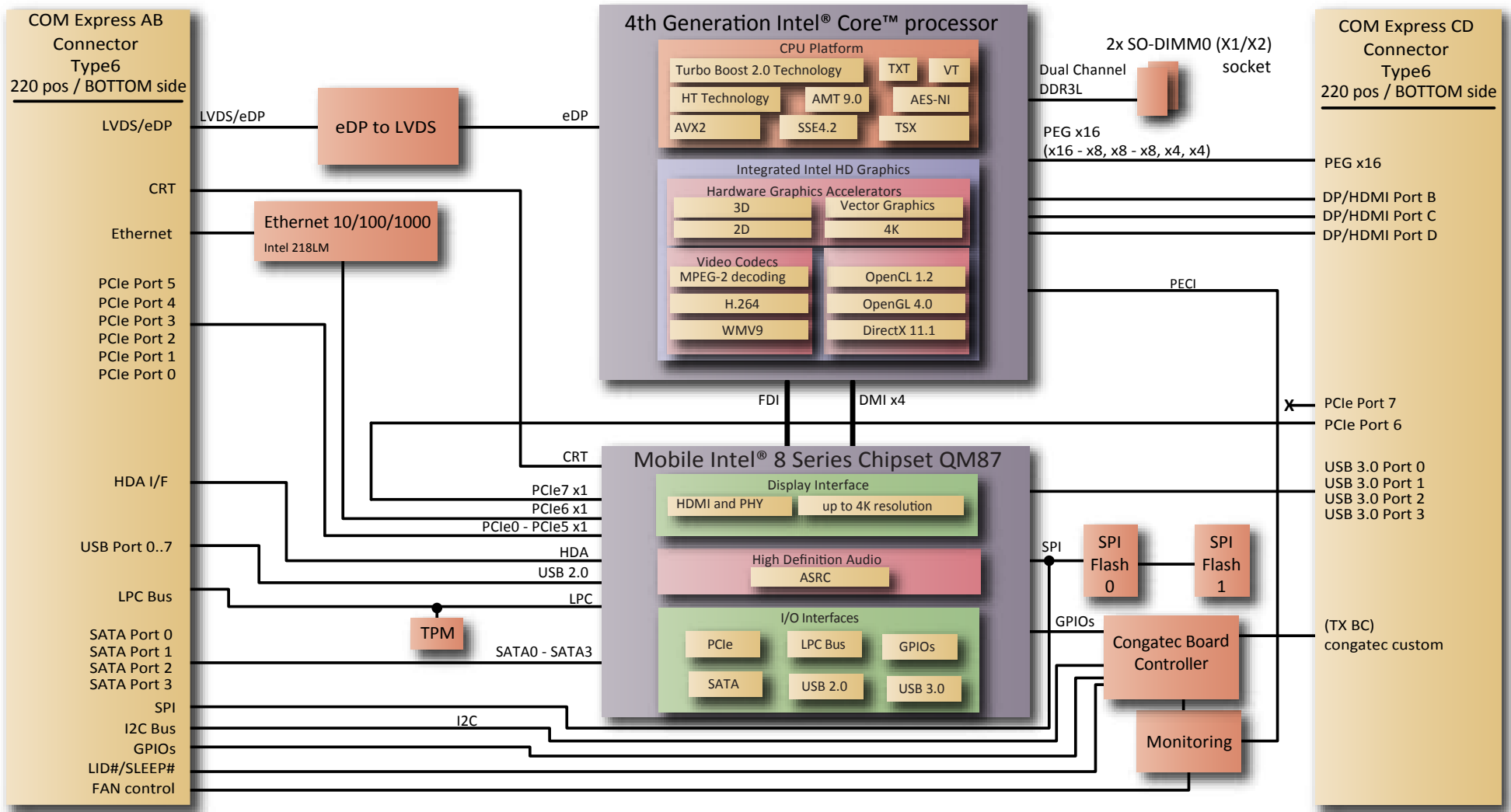
Up to 32% higher 3D graphics performance\*

\*compared to previous generation



<b>Formfactor</b>	<b>Formfactor COM Express™ Basic, (95 x 125 mm), Type 6 Connector Layout</b>
<b>CPU</b>	Intel® Core™ i7-4700EQ Quad Core, 2.4 GHz, Turbo Boost 3.4 GHz, 6M Cache, TDP 47W (configurable to 1.7 GHz / 37W), AVX2, AES-NI, AMT 9.0, TXT Intel® Core™ i5-4400E Dual Core, 2.7 GHz, Turbo Boost 3.3 GHz, 3M Cache, TDP 37W, AVX2, AES-NI, AMT 9.0, TXT Intel® Core™ i5-4402E Dual Core, 1.6 GHz, Turbo Boost 2.7 GHz, 3M Cache, TDP 25W, AVX2, AES-NI, AMT 9.0, TXT Intel® Core™ i3-4100E Dual Core, 2.4 GHz, 3M Cache, TDP 37W, AES-NI Intel® Core™ i3-4102E Dual Core, 1.6 GHz, 3M Cache, TDP 25W, AES-NI  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, Intel® HD graphics with dynamic frequency up to 1GHz, 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>	Mobile Intel® 8 Series Chipset: Intel® QM87 for Intel® Core™ processors / HM86 @ planned Celeron variants
<b>Ethernet</b>	Intel® I218-LM GbE LAN Controller with AMT 9.0 support
<b>I/O Interfaces</b>	7x PCI Express™ GEN. 2.0 lanes, 1x PEG GEN 3.0 (8GT/s), 4x Serial ATA® 6 Gb/s, RAID 0/1/5/10 support, 2x ExpressCard®, 4x 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, DP, VGA; 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 (DVI, HDMI) / DisplayPort 1.2a with daisy chaining, resolutions up to 4k
<b>CRT Interface</b>	350 MHz RAMDAC, resolutions up to QXGA (2048x1536 @75Hz)
<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-TS87 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 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 manual for full details, CMOS Battery Backup
<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 125 mm (3.74" x 4.92")

# conga-TS87 - Block diagram



# conga-TS87 - Order information

Article	PN	Description
conga-TS87/I3-4100E	046808	COM Express Type 6 Basic module with Intel® Core™ i3-4100E dual core processor with 2.4GHz, 3MB L2 cache and 1600MT/s dual channel DDR3 memory interface.
conga-TS87/I3-4102E	046807	COM Express Type 6 Basic module with Intel® Core™ i3-4102E dual core processor with 1.6GHz, 3MB L2 cache and 1600MT/s dual channel DDR3 memory interface.
conga-TS87/I5-4400E	046806	COM Express Type 6 Basic module with Intel® Core™ i5-4400E dual core processor with 2.7GHz, 3MB L2 cache and 1600MT/s dual channel DDR3 memory interface.
conga-TS87/I5-4402E	046805	COM Express Type 6 Basic module with Intel® Core™ i5-4402E dual core processor with 1.6GHz, 3MB L2 cache and 1600MT/s dual channel DDR3 memory interface.
conga-TS87/I7-4700EQ	046804	COM Express Type 6 Basic module with Intel® Core™ i7-4700EQ quad core processor with 2.4GHz, 6MB L2 cache and 1600MT/s dual channel DDR3 memory interface.
conga-TS87/CSA-FP-B	046853	Standard active cooling solution for high performance COM Express Type 6 module conga-TS87 with flat pipes, 15mm fins, 20mm overall heat sink height and integrated 12V fan. All stand-offs are with 2.7mm bore hole.
conga-TS87/CSA-FP-T	046854	Standard active cooling solution for high performance COM Express module conga-TS87 with flat pipes, 15mm fins, 20mm overall heat sink height and integrated 12V fan. All stand-offs are M2.5mm threaded.
conga-TS87/CSP-FP-B	046855	Standard passive cooling solution for high performance COM Express Type 6 module conga-TS87 with flat pipes, 15mm fins and 20mm overall heat sink height. All stand-offs are with 2.7 mm bore hole.
conga-TS87/CSP-FP-T	046856	Standard passive cooling solution for high performance COM Express Type 6 module conga-TS87 with integrated flat pipes, 15mm fins and 20mm overall heat sink height. All stand-offs are M2.5mm threaded.
conga-TS87/HSP-FP-B	046851	Standard heatspreader for high performance COM Express Type 6 module conga-TS87 with flat pipes. All stand-offs are with 2.7mm bore hole.
conga-TS87/HSP-FP-T	046852	Standard heatspreader for high performance COM Express Type 6 module conga-TS87 with flat pipes. All stand-offs are M2.5mm 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

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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