

# HIGH END PERFORMANCE

## conga-TS87

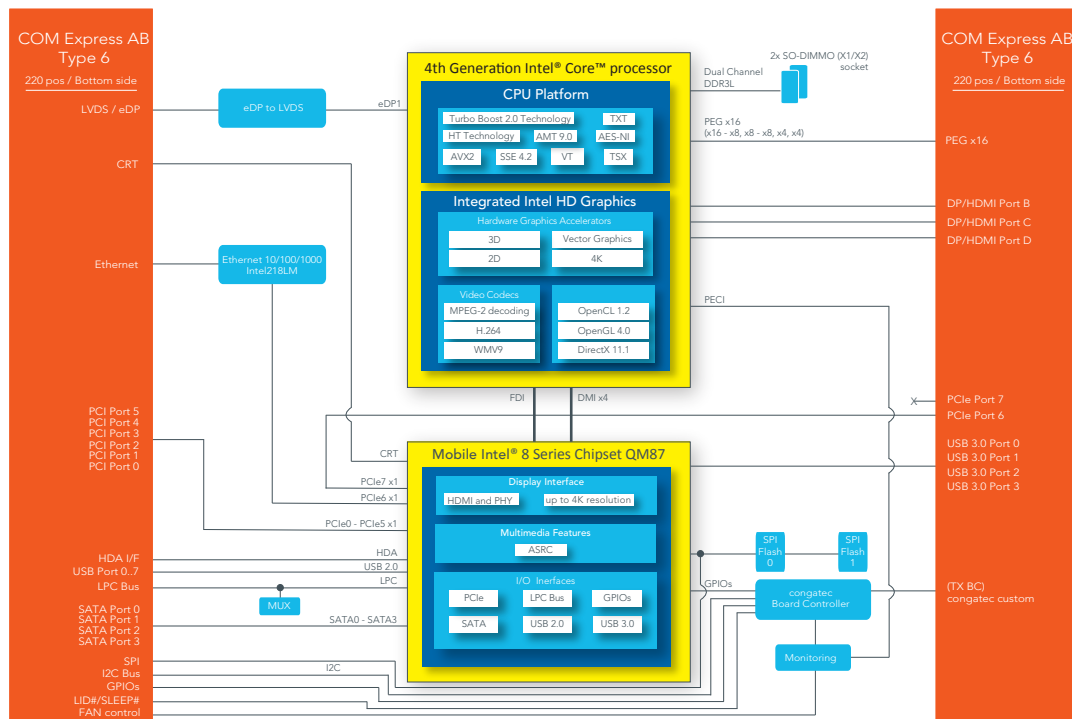


- 4<sup>th</sup> Gen. Intel® Core™ i7 quad core processor
- 3x DisplayPort 1.2, up to 4k resolution
- COM Express Basic Type 6 module
- Intel® AES-NI for hardware accelerated encryption and decryption

**COM**  **Express®**

Formfactor	Formfactor COM Express™ Basic   (95 x 125 mm)   Type 6 Connector Layout						
CPU	Intel® Core™ i7-4700EQ	Quad Core	2.4 GHz	Turbo Boost 3.4 GHz	6M Cache	TDP 47W	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® Celeron™ 2000E	Dual Core	2.2 GHz		2MB L3 cache	TDP 37W	
	Intel® Celeron™ 2002E	Dual Core	1.56 GHz		2MB L3 cache	TDP 25W	
	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)						
DRAM	2 Sockets   SO-DIMM DDR3L@1.35V up to 1600MT/s and 16GByte						
Chipset	Mobile Intel® 8 Series Chipset: Intel® QM87 for Intel® Core™ processors / HM86 @ planned Celeron variants						
Ethernet	Intel® I218-LM GbE LAN Controller with AMT 9.0 support						
I/O Interfaces	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)						
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, DP, VGA; 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	3x DS (DVI   HDMI) / DisplayPort 1.2a with daisy chaining   resolutions up to 4k						
CRT Interface	350 MHz RAMDAC   resolutions up to QXGA (2048x1536 @75Hz)						
congatec Board Controller	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						
Embedded BIOS Features	AMI Aptio® UEFI 2.x firmware   8 MByte serial SPI firmware flash						
Security	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 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 manual for full details   CMOS Battery Backup						
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 125 mm (3.74" x 4.92")						

# conga-TS87 | Block diagram



# conga-TS87 | Order Information

Article	PN	Description
conga-TS87/i7-4700EQ	046804	Intel® Core™ i7-4700EQ quad core processor with 2.4GHz   6MB L2 cache and 1600MT/s dual channel DDR3L memory interface
conga-TS87/i5-4402E	046805	Intel® Core™ i5-4402E dual core processor with 1.6GHz   3MB L2 cache and 1600MT/s dual channel DDR3L memory interface
conga-TS87/i5-4400E	046806	Intel® Core™ i5-4400E dual core processor with 2.7GHz   3MB L2 cache and 1600MT/s dual channel DDR3L memory interface
conga-TS87/i3-4102E	046807	Intel® Core™ i3-4102E dual core processor with 1.6GHz   3MB L2 cache and 1600MT/s dual channel DDR3L memory interface
conga-TS87/i3-4100E	046808	Intel® Core™ i3-4100E dual core processor with 2.4GHz   3MB L2 cache and 1600MT/s dual channel DDR3L memory interface
conga-TS87/2000E	046810	Intel® Celeron™ 2000E dual core processor with 2.2GHz   2MB L3 cache and 1600MT/s dual channel DDR3L memory interface
conga-TS87/2002E	046811	Intel® Celeron™ 2002E dual core processor with 1.56GHz   2MB L3 cache and 1600MT/s dual channel DDR3L memory interface
conga-TS87/HSP-FP-B	046851	Standard heatspreader for high performance COM Express module conga-TS87 with flat heat pipes. All standoffs are with 2.7mm bore hole
conga-TS87/HSP-FP-T	046852	Standard heatspreader for high performance COM Express module conga-TS87 with flat heat pipes. All standoffs are M2.5mm threaded
conga-TS87/CSA-FP-B	046853	Standard active cooling solution for high performance COM Express module conga-TS87 with flat heat pipes   15mm fins   20mm overall heat sink height and integrated 12V fan. All standoffs 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 heat pipes   15mm fins   20mm overall heat sink height and integrated 12V fan. All standoffs are M2.5mm threaded
conga-TS87/CSP-FP-B	046855	Standard passive cooling solution for high performance COM Express module conga-TS87 with flat heat pipes   15mm fins and 20mm overall heat sink height. All standoffs are with 2.7 mm bore hole
conga-TS87/CSP-FP-T	046856	Standard passive cooling solution for high performance COM Express module conga-TS87 with flat heat pipes   15mm fins and 20mm overall heat sink height. All standoffs 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
<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

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