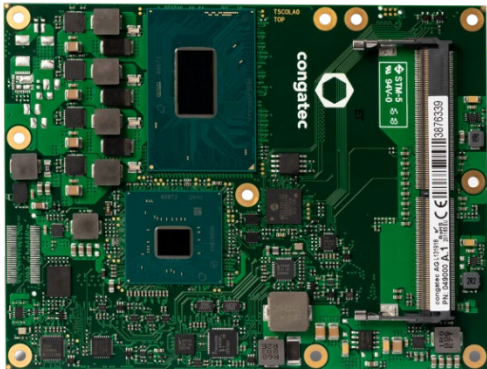


# HIGH PERFORMANCE COMPUTING

## conga-TS370



- 8th Generation Intel® Core™ processor series with up to 6 cores
- Intel® Xeon® processors for data center applications
- Support for USB 3.1 Gen2 with 10Gb/s
- Up to 64 GByte dual channel DDR4 memory
- ECC memory support



### Form factor

### COM Express® Basic, (95 x 125 mm) | Type 6 connector pinout

#### Processor

Intel® Core™ i7-9850HE	2.7 GHz   4.4 GHz (boost)	6 cores	9 MB cache	45 W TDP (35 W cTDP)
Intel® Core™ i7-9850HL	1.9 GHz   4.1 GHz (boost)	6 cores	9 MB cache	35 W TDP (25 W cTDP)
Intel® Core™ i3-9100HL	1.6 GHz   2.9 GHz (boost)	4 cores	6 MB cache	25 W TDP
Intel® Xeon® E-2276ME	2.8 GHz   4.5 GHz (boost)	6 cores	12 MB cache	45 W TDP (35 W cTDP)
Intel® Xeon® E-2276ML	2.0 GHz   4.2 GHz (boost)	6 cores	12 MB cache	35 W TDP (25 W cTDP)
Intel® Xeon® E-2254ME	2.6 GHz   3.8 GHz (boost)	4 cores	8 MB cache	45 W TDP (35 W cTDP)
Intel® Xeon® E-2254ML	2.7 GHz   4.4 GHz (boost)	4 cores	8 MB cache	35 W TDP (25 W cTDP)
Intel® Core™ i7-8850H	2.6 GHz   4.3 GHz (boost)	6 cores	9 MB cache	45 W TDP (35 W cTDP)
Intel® Core™ i5-8400H	2.5 GHz   4.2 GHz (boost)	4 cores	8 MB cache	45 W TDP (35 W cTDP)
Intel® Core™ i3-8100H	3.0 GHz	4 cores	6 MB cache	45 W TDP (35 W cTDP)
Intel® Xeon® E-2176M	2.7 GHz   4.4 GHz (boost)	6 cores	12 MB cache	45 W TDP (35 W cTDP)
Intel® Celeron® G4932E	1.9 GHz	2 cores	2 MB cache	25 W TDP
Intel® Celeron® G4930E	2.4 GHz	2 cores	2 MB cache	35 W TDP

Intel® Turbo Boost Technology | Intel® Hyper-Threading Technology | Intel® Advanced Vector Extensions 2.0 (Intel® AVX2) | Intel® Advanced Encryption Standard New Instructions (Intel® AES-NI) | Integrated Intel® Gen 9 HD Graphics | Intel® Clear Video HD Technology | Intel® Virtualization Technology (Intel® VT) | Intel® Trusted Execution Technology (Intel® TXT) | Intel® Secure Key

#### DRAM

Dual channel DDR4 up to 2666 MT/s | 2x SO-DIMM | up to 2x 32 GByte (optionally with ECC support for Intel® Xeon®)

#### Chipset

Mobile Intel® PCH-H QM370 series or CM246 series for Intel® Xeon® processor

#### Ethernet

Intel® i219-LM GbE LAN controller with AMT 12.0 support

#### I/O Interfaces

8x PCI Express™ Gen 3.0 lanes | 1x PEG x16 Gen 3 | 4x SATA Gen 3 | 4x USB 3.1 Gen 2 @ 10 Gbit/s | 8x USB 2.0 | LPC bus | I²C bus (fast mode, 400 kHz, multi-master) | 2x UART

#### Sound

Digital High Definition Audio Interface with support for multiple audio codecs

#### Graphics

Intel® Gen9 HD Graphics Engine with OpenCL 2.0, OpenGL 4.3/4.4 and DirectX 11/12 | up to three independent displays: HDMI 1.4a / DisplayPort 1.2 / eDP 1.4 | MPEG-2, WMV9 (VC-1), H.265 decoding | HEVC, VP9 encoding

#### LVDS / eDP

Dual channel LVDS transmitter, Supports flat panels 2x24 Bit interface | VESA and openLDI color mappings | resolutions up to 1920x1200 | Automatic Panel Detection via EDID/EPI | LVDS or eDP switchable in BIOS setup

#### Digital Display Interface

3x HDMI 1.4a / DisplayPort 1.2 with support for Multi-Stream Transport (MST) | resolutions up to 4k | VGA support

#### 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 | 32 MByte serial SPI firmware flash

#### Security

TPM 2.0 Infineon SLB9665

#### Power Management

ACPI 4.0 with battery support, configurable TDP

#### Operating Systems

Microsoft® Windows 10 (64bit only) | Microsoft® Windows 10 IoT Enterprise (64bit only) | Linux

#### Power Consumption

See User's Guide for full details

#### Temperature

Operating: 0 to +60°C      Storage: -40 to +85°C

#### Extended Temperature

Screening service on request:      -25 to +80°C (burn-in & cold-soak)  
-40 to +85°C (burn-in & cold-soak)

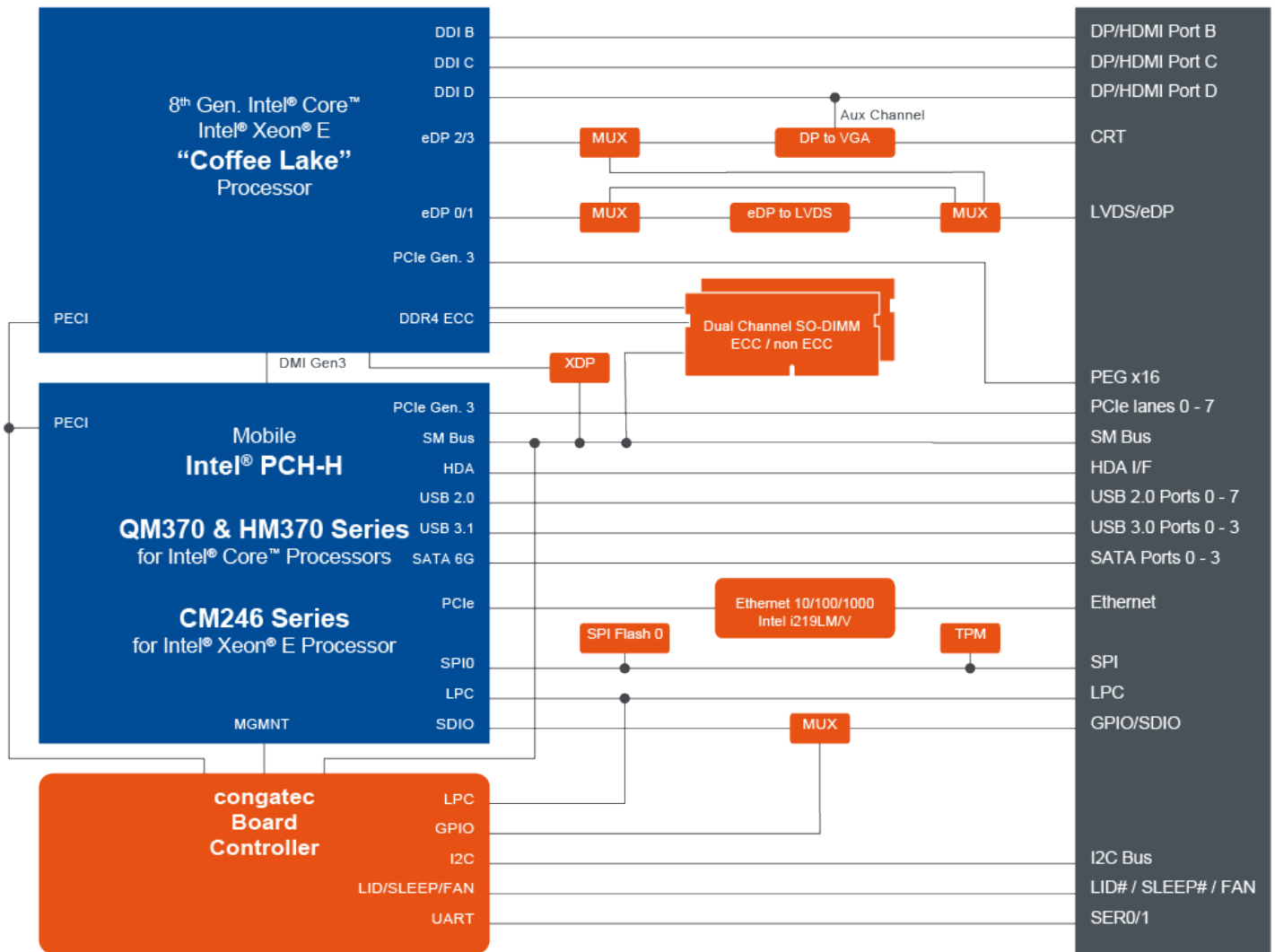
#### Humidity

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-TS370 | Block Diagram



# conga-TS370 | Order Information – COM Express® Module

Article	PN	Description
conga-TS370/i7-9850HE	049102	COM Express Type 6 Basic module based on Intel® Core™ i7-9850HE 6-core processor with 2.7GHz up to 4.4GHz turbo boost, 12MB Intel® Smart Cache, Intel® UHD Graphics 630 and dual channel DDR4 2666 MT/s memory interface (formerly Coffee Lake-H Refresh). Chipset QM370.
conga-TS370/i7-9850HL	049112	COM Express Type 6 Basic module based on Intel® Core™ i7-9850LE 6-core processor with 1.9GHz up to 4.1GHz turbo boost, 12MB Intel® Smart Cache, Intel® UHD Graphics 630 and dual channel DDR4 2666 MT/s memory interface (formerly Coffee Lake-H Refresh). Chipset QM370.
conga-TS370/i3-9100HL	049113	COM Express Type 6 Basic module based on Intel® Core™ i3-9100HL 4-core processor with 1.6GHz up to 2.9GHz turbo boost, 12MB Intel® Smart Cache, Intel® UHD Graphics 630 and dual channel DDR4 2666 MT/s memory interface (formerly Coffee Lake-H Refresh). Chipset HM370.
conga-TS370/E-2276ME	049100	COM Express Type 6 Basic module based on Intel® Xeon® E-2276ME 6-core processor with 2.8GHz up to 4.5GHz turbo boost, 12MB Intel® Smart Cache, Intel® UHD Graphics P630 and dual channel DDR4 2666 MT/s ECC memory interface (formerly Coffee Lake-H Refresh). Chipset CM246.
conga-TS370/E-2276ML	049110	COM Express Type 6 Basic module based on Intel® Xeon® E-2276ML 6-core processor with 2.0GHz up to 4.2GHz turbo boost, 12MB Intel® Smart Cache, Intel® UHD Graphics P630 and dual channel DDR4 2666 MT/s ECC memory interface (formerly Coffee Lake-H Refresh). Chipset CM246.
conga-TS370/E-2254ME	049101	COM Express Type 6 Basic module based on Intel® Xeon® E-2254ME 4-core processor with 2.6GHz up to 3.8GHz turbo boost, 8MB Intel® Smart Cache, Intel® UHD Graphics P630 and dual channel DDR4 2666 MT/s ECC memory interface (formerly Coffee Lake-H Refresh). Chipset CM246.
conga-TS370/E-2254ML	049111	COM Express Type 6 Basic module based on Intel® Core™ i5-8400H 4-core processor with 2.5GHz up to 4.2GHz turbo boost, 8MB Intel® Smart Cache, Intel® UHD Graphics P630 and dual channel DDR4 2666 MT/s ECC memory interface (formerly Coffee Lake-H Refresh). Chipset QM370.
conga-TS370/G4930E	049104	COM Express Type 6 Basic module based on Intel® Celeron® Processor G4930E 2-core processor with 2.4GHz, 2MB Intel® Smart Cache, Intel® UHD Graphics 610 and dual channel DDR4 2400 MT/s memory interface (formerly Coffee Lake-H Refresh). Chipset HM370.
conga-TS370/G4932E	049114	COM Express Type 6 Basic module based on Intel® Celeron® Processor G4832E 2-core processor with 1.9GHz, 2MB Intel® Smart Cache, Intel® UHD Graphics 610 and dual channel DDR4 2400 MT/s memory interface (formerly Coffee Lake-H Refresh). Chipset HM370.
conga-TS370/i7-8850H	049000	COM Express Type 6 Basic module based on Intel® Core™ i7-8850H 6-core processor with 2.6GHz up to 4.3GHz turbo boost, 9MB Intel® Smart Cache, Intel® UHD Graphics 630 and dual channel DDR4 2666 MT/s memory interface (formerly Coffee Lake-H). Chipset QM370.
conga-TS370/i5-8400H	049001	COM Express Type 6 Basic module based on Intel® Core™ i5-8400H 4-core processor with 2.5GHz up to 4.2GHz turbo boost, 8MB Intel® Smart Cache, Intel® UHD Graphics 630 and dual channel DDR4 2666 MT/s memory interface (formerly Coffee Lake-H). Chipset QM370.
conga-TS370/i3-8100H	049003	COM Express Type 6 Basic module based on Intel® Core™ i3-8100H 4-core processor with 3.0GHz, 6MB Intel® Smart Cache, Intel® UHD Graphics 630 and dual channel DDR4 2666 MT/s memory interface (formerly Coffee Lake-H). Chipset HM370.
conga-TS370/E-2176M	049002	COM Express Type 6 Basic module based on Intel® Xeon® E-2176M 6-core processor with 2.7GHz up to 4.4GHz turbo boost, 12MB Intel® Smart Cache, Intel® UHD Graphics P630 and dual channel DDR4 2666 MT/s ECC memory interface (formerly Coffee Lake-H). Chipset CM246.

## conga-TS370 | Order Information – Accessory

Article	PN	Description
conga-TS170/CSA-HP-B	045930	Standard active cooling solution for high performance COM Express modules conga-TS170/TS175 with integrated heat pipes, 15mm silver fins, 21mm overall heat sink height and integrated 12V fan. All standoffs are with 2.7mm bore hole.
conga-TS170/CSA-HP-T	045931	Standard active cooling solution for high performance COM Express modules conga-TS170/TS175 with integrated heat pipes, 15mm silver fins, 21mm overall heat sink height and integrated 12V fan. All standoffs are M2.5mm thread.
conga-TS170/CSP-HP-B	045932	Standard passive cooling solution for high performance COM Express modules conga-TS170/TS175 with integrated heat pipes, 15mm silver fins and 21mm overall heat sink height. All standoffs are with 2.7mm bore hole.
conga-TS170/CSP-HP-T	045933	Standard passive cooling solution for high performance COM Express modules conga-TS170/TS175 with integrated heat pipes, 15mm silver fins and 21mm overall heat sink height. All standoffs are M2.5mm thread.
conga-TS170/HSP-HP-B	045934	Standard heat spreader for high performance COM Express modules conga-TS170/TS175 with integrated heat pipes. All standoffs are with 2.7mm bore hole.
conga-TS170/HSP-HP-T	045935	Standard heat spreader for high performance COM Express modules conga-TS170/TS175 with integrated heat pipes. All standoffs are M2.5mm thread.
DDR4-SODIMM-2666 (4GB)	067780	DDR4 SODIMM memory module with 2666 MT/s and 4GB RAM
DDR4-SODIMM-2666 (8GB)	067781	DDR4 SODIMM memory module with 2666 MT/s and 8GB RAM
DDR4-SODIMM-2666 (16GB)	067782	DDR4 SODIMM memory module with 2666 MT/s and 16GB RAM
DDR4-SODIMM-2666 (32GB)	068806	DDR4 SODIMM memory module with 2666 MT/s and 32GB RAM
DDR4-SODIMM-2666 ECC (4GB)	067783	DDR4 ECC SODIMM memory module with 2666 MT/s and 4GB RAM
DDR4-SODIMM-2666 ECC (8GB)	067784	DDR4 ECC SODIMM memory module with 2666 MT/s and 8GB RAM
DDR4-SODIMM-2666 ECC (16GB)	067785	DDR4 ECC SODIMM memory module with 2666 MT/s and 16GB RAM
DDR4-SODIMM-2666 ECC (32GB)	068805	DDR4 ECC SODIMM memory module with 2666 MT/s and 32GB RAM