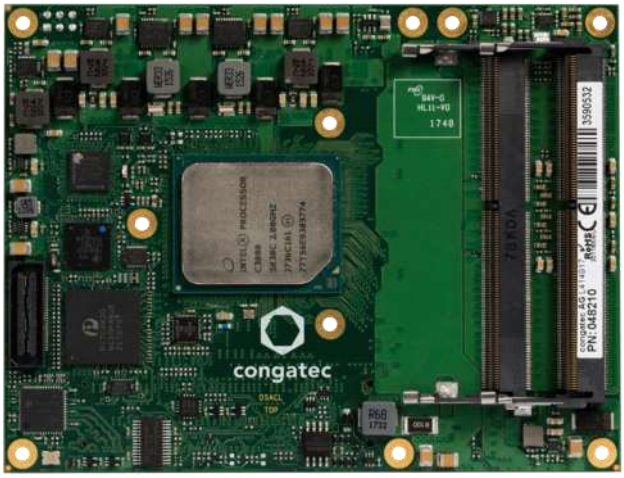
SERVER ON MODULE

conga-B7AC



- COM Express Type 7
- Up to Intel® Atom™ C3958 with 16 Cores and 16MB Cache
- 4x 10 Gigabit Ethernet KR Interface
- Up to 96 Gbyte DDR4 memory
- 20 PCI Express lanes
- Industrial grade variants
- Server Class Features (RAS, QoS, Virtualization, Security, Manageability)

COM Express®

Formfactor	COM Express® Basic, (95 x 125 mm) | Type 7 connector pinout

CPU

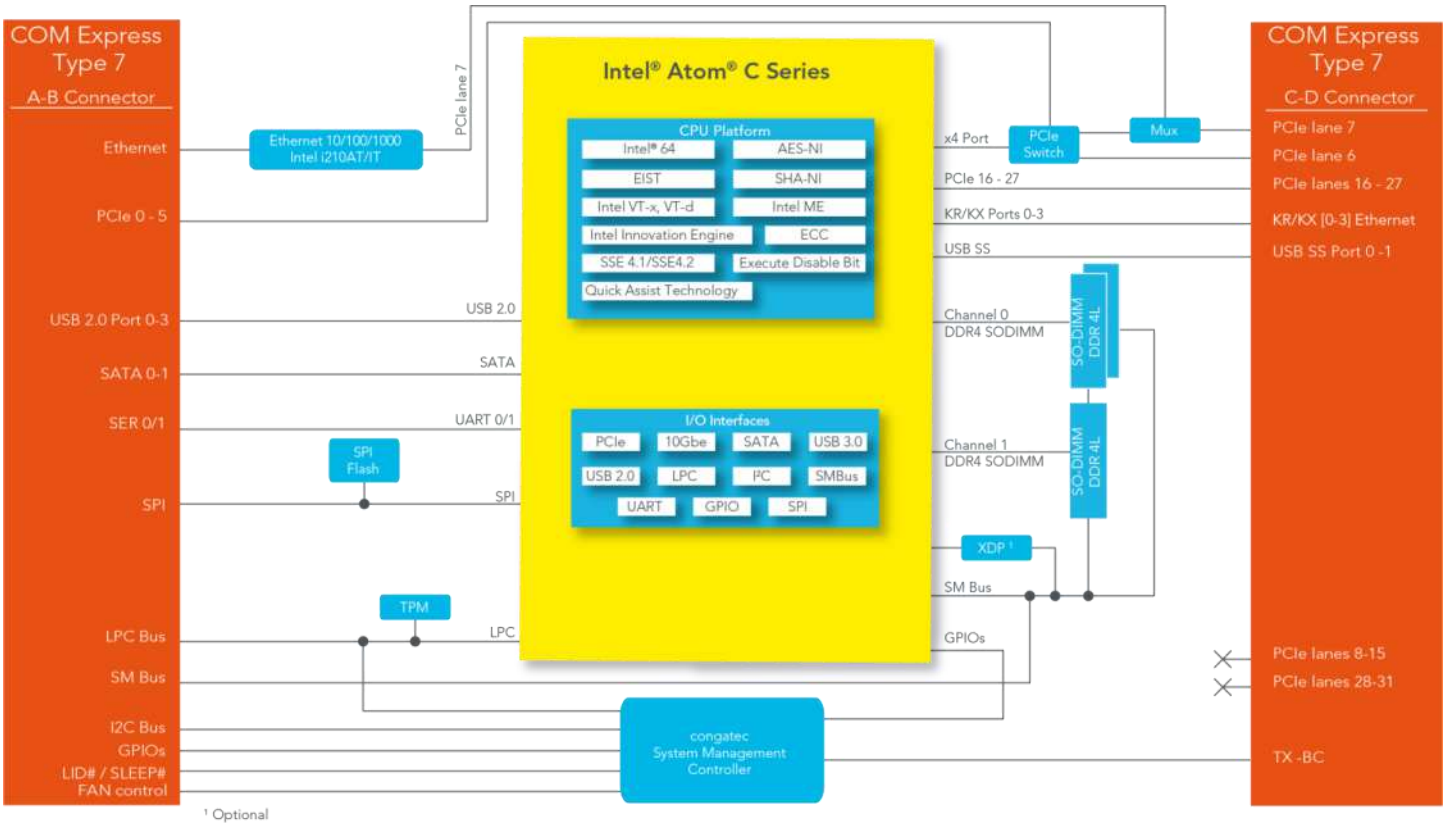
Commercial Versions				
Intel® Atom™ C3958	16 Cores / 16 Threads	2.0 / 2.0 GHz	16 MB cache	31W TDP
Intel® Atom™ C3858	12 Cores / 12 Threads	2.0 / 2.0 GHz	12 MB cache	25W TDP
Intel® Atom™ C3758	8 Cores / 8 Threads	2.2 / 2.2 GHz	16 MB cache	25W TDP
Intel® Atom™ C3558	4 Cores / 4 Threads	2.2 / 2.2 GHz	8 MB cache	16W TDP
Intel® Atom™ C3538	4 Cores / 4 Threads	2.1 / 2.1 GHz	8 MB cache	15W TDP
Intel® Atom™ C3308	2 Cores / 2 Threads	1.6 / 2.1 GHz	4 MB cache	9.5W TDP
Industrial Versions				
Intel® Atom™ C3808	12 Cores / 12 Threads	2.0 / 2.0 GHz	12 MB cache	25W TDP
Intel® Atom™ C3708	8 Cores / 8 Threads	1.7 / 1.7 GHz	16 MB cache	17W TDP
Intel® Atom™ C3508	4 Cores / 4 Threads	1.6 / 1.6 GHz	8 MB cache	11.5W TDP

DRAM	Dual channel DDR4 up to 2400 MT/s | 3x SO-DIMM | up to 3x 32 GByte (optionally with ECC support)
Chipset	Integrated in SoC
Ethernet	Up to 4x 10GbE with KR interface support 1x Gigabit Ethernet
I/O Interfaces	12x PCIe Gen3 max. | 8x PCIe Gen2 | 2x USB 3.0 | 4x USB 2.0 | 2x SATA III (6Gb/s) | LPC | SPI | 2x UART | SMBus
Storage	eMMC 5.0 onboard flash up to 128 GByte (optional)
congatec Board Controller	Multi Stage Watchdog | non-volatile User Data Storage | Manufacturing and Board Information | Board Statistics | I²C bus (fast mode, 400 kHz, multi-master) | Power Loss Control | Hardware Health Monitoring | POST Code redirection
Embedded BIOS Features	OEM Customization | Flash Update | based on AMI Aptio UEFI
Security	Trusted Platform Module (TPM 2.0) | Hash and RSA algorithms | key lengths up to 2048 bits | real random number generator
Power Management	ACPI 5.0 with battery support

Operating Systems

Windows 64 bit OS	Open Source OS & Frameworks	Other
Microsoft® Windows Server 2016	RHEL 7.2 & 7.3	VMWare ESXi 6.0
Microsoft® Windows Server 2012 R2	SuSE Linux Enterprise Server 12 SP1	Hyper-V
Microsoft® Windows Server 2012	Fedora 23 and 24	Linux KVM 6.8 & 7.3
	Ubuntu 16.04 LTS	
	CentOS 7.2	

Power Consumption	See user's guide for full details | CMOS Battery Backup		
Temperature	Industrial: Commercial:	Operating: -40 to +85°C Operating: 0 to +60°C	Storage: -40 to +85°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")		


COM Express Type 7
A-B Connector
Ethernet
PCIe 0 - 5
USB 2.0 Port 0-3
SATA 0-1
SER 0/1
SPI
LPC Bus
SM Bus
I2C Bus
GPIOs
LID# / SLEEP#
FAN control
Ethernet 10/100/1000 Intel I210AT/IT
PCIe lane 7
SPI Flash
TPM
Intel® Atom® C Series
CPU Platform
Intel® 64
AES-NI
EIST
SHA-NI
Intel VT-x, VT-d
Intel ME
Intel Innovation Engine
ECC
SSE 4.1/SSE4.2
Execute Disable Bit
Quick Assist Technology
I/O Interfaces
PCIe
10Gbe
SATA
USB 3.0
USB 2.0
LPC
I²C
SMBus
UART
GPIO
SPI
USB 2.0
SATA
UART 0/1
SPI
LPC
congatec System Management Controller
x4 Port
PCIe Switch
Mux
PCIe 16 - 27
KR/KX Ports 0-3
USB SS
Channel 0 DDR4 SODIMM
Channel 1 DDR4 SODIMM
SO-DIMM DDR 4L
SO-DIMM DDR 4L
XDP ¹
SM Bus
GPIOs
COM Express Type 7
C-D Connector
PCIe lane 7
PCIe lane 6
PCIe lanes 16 - 27
KR/KX [0-3] Ethernet
USB SS Port 0 -1
PCIe lanes 8-15
PCIe lanes 28-31
TX -BC
¹ Optional

conga-B7AC | Order Information – COM Express® Module

Article	PN	Description
conga-B7AC/A-C3958	048200	COM Express Type 7 Basic module based on Intel® Atom™ C3958 16-core processor with 2.0 GHz, 16MB Cache and dual channel DDR4 2400 MT/s memory interface for up to 96 GByte (formerly Denverton). Features four 10GbE KR interface ports. Commercial temperature range.
conga-B7AC/A-C3858	048201	COM Express Type 7 Basic module based on Intel® Atom™ C3858 12-core processor with 2.0 GHz, 12MB Cache and dual channel DDR4 2400 MT/s memory interface for up to 96 GByte (formerly Denverton). Features four 10GbE KR interface ports. Commercial temperature range.
conga-B7AC/A-C3758	048202	COM Express Type 7 Basic module based on Intel® Atom™ C3758 8-core processor with 2.2 GHz, 16MB Cache and dual channel DDR4 2400 MT/s memory interface for up to 96 GByte (formerly Denverton). Features four 10GbE KR interface ports. Commercial temperature range.
conga-B7AC/A-C3558	048203	COM Express Type 7 Basic module based on Intel® Atom™ C3558 4-core processor with 2.2 GHz, 8MB Cache and dual channel DDR4 2133 MT/s memory interface for up to 96 GByte (formerly Denverton). Features two 2.5GbE KX and two 10GbE KR interface ports. Commercial temperature range.
conga-B7AC/A-C3538	048204	COM Express Type 7 Basic module based on Intel® Atom™ C3538 4-core processor with 2.1 GHz, 8MB Cache and dual channel DDR4 2133 MT/s memory interface for up to 96 GByte (formerly Denverton). Features two 2.5GbE KX and two 10GbE KR interface ports. Commercial temperature range.
conga-B7AC/A-C3308	048205	COM Express Type 7 Basic module based on Intel® Atom™ C3538 2-core processor with 1.6 GHz, 4MB Cache and dual channel DDR4 2133 MT/s memory interface for up to 64 GByte (formerly Denverton). Features four 2.5GbE KX interface ports. Commercial temperature range.
conga-B7AC/i-A-C3808	048210	COM Express Type 7 Basic module based on Intel® Atom™ C3808 12-core processor with 2.0 GHz, 12MB Cache and dual channel DDR4 2133 MT/s memory interface for up to 96 GByte (formerly Denverton). Features four 10GbE KR interface ports. Industrial temperature range.
conga-B7AC/i-A-C3708	048211	COM Express Type 7 Basic module based on Intel® Atom™ C3708 8-core processor with 1.7 GHz, 16MB Cache and dual channel DDR4 2133 MT/s memory interface for up to 96 GByte (formerly Denverton). Features four 10GbE KR interface ports. Industrial temperature range.
conga-B7AC/i-A-C3508	048213	COM Express Type 7 Basic module based on Intel® Atom™ C3508 4-core processor with 1.6 GHz, 8MB Cache and dual channel DDR4 1866 MT/s memory interface for up to 96 GByte (formerly Denverton). Features four 2.5GbE KX interface ports. Industrial temperature range.

conga-B7AC | Order Information – Accessory

Article	PN	Description
conga-B7AC/HSP-Cu-B	048251	Standard heatspreader for COM Express Basic Type 7 module conga-B7AC with integrated copper plate. Intended for modules with TDP up to 17W (Cu = Copper plate | B = Bore hole standoffs)
conga-B7AC/HSP-Cu-T	048252	Standard heatspreader for COM Express Basic Type 7 module conga-B7AC with integrated copper plate. Intended for versions up to 17W TDP (Cu = Copper plate | T = M2.5 threaded standoffs)
conga-B7AC/CSA-Cu-B	048253	Standard active cooling solution for COM Express Basic Type 7 module conga-B7AC with integrated copper plate, 15mm fins, 20mm overall heat sink height and integrated 12V fan. (Cu = Copper plate | B = 2.7mm Bore hole standoffs)
conga-B7AC/CSA-Cu-T	048254	Standard active cooling solution for COM Express Basic Type 7 module conga-B7AC with integrated copper plate, 15mm fins, 20mm overall heat sink height and integrated 12V fan. (Cu = Copper plate | T = M2.5 threaded standoffs)
conga-B7AC/CSP-Cu-B	048255	Standard passive cooling solution for COM Express Basic Type 7 module conga-B7AC with integrated copper plate, 15mm fins and 20mm overall heat sink height. (Cu = copper plate | B = Bore hole standoffs)
conga-B7AC/CSP-Cu-T	048256	Standard passive cooling solution for high performance COM Express Basic Type 7 module conga-B7AC with integrated copper plate, 15mm fins and 20mm overall heat sink height. (Cu = copper plate | T = M2.5 Threaded standoffs)
DDR4-SODIMM-2400 (4GB)	068790	DDR4 SODIMM memory module with 2400 MT/s and 4GB RAM
DDR4-SODIMM-2400 (8GB)	068791	DDR4 SODIMM memory module with 2400 MT/s and 8GB RAM
DDR4-SODIMM-2400 (16GB)	068792	DDR4 SODIMM memory module with 2400 MT/s and 16GB RAM
DDR4-SODIMM-2666 (32GB)	068806	DDR4 SODIMM memory module with 2666 MT/s and 32GB RAM
DDR4-SODIMM-2400 ECC (4GB)	068795	DDR4 ECC SODIMM memory module with 2400 MT/s and 4GB RAM
DDR4-SODIMM-2400 ECC (8GB)	068796	DDR4 ECC SODIMM memory module with 2400 MT/s and 8GB RAM
DDR4-SODIMM-2400 ECC (16GB)	068797	DDR4 ECC SODIMM memory module with 2400 MT/s and 16GB RAM
DDR4-SODIMM-2666 ECC (32GB)	068805	DDR4 ECC SODIMM memory module with 2666 MT/s and 32GB RAM
DDR4-SODIMM-2400 (4GB)/ i-temp	068714	Industrial DDR4 SODIMM memory module with 2400 MT/s and 4GB RAM
DDR4-SODIMM-2400 (8GB)/ i-temp	068715	Industrial DDR4 SODIMM memory module with 2400 MT/s and 8GB RAM
DDR4-SODIMM-2400 (16GB)/ i-temp	068716	Industrial DDR4 SODIMM memory module with 2400 MT/s and 16GB RAM
DDR4-SODIMM-2666 (32GB)/ i-temp	068807	Industrial DDR4 SODIMM memory module with 2666 MT/s and 32GB RAM
DDR4-SODIMM-2400 ECC (4GB) / i-temp	068717	Industrial DDR4 ECC SODIMM memory module with 2400 MT/s and 4GB RAM
DDR4-SODIMM-2400 ECC (8GB) / i-temp	068718	Industrial DDR4 ECC SODIMM memory module with 2400 MT/s and 8GB RAM
DDR4-SODIMM-2400 ECC (16GB) / i-temp	068719	Industrial DDR4 ECC SODIMM memory module with 2400 MT/s and 16GB RAM
DDR4-SODIMM-2666 ECC (32GB) / i-temp	068808	Industrial DDR4 ECC SODIMM memory module with 2666 MT/s and 32GB RAM
conga-x7EVAL	065420	Evaluation Carrier Board for COM Express Type 7 modules with up to four 10GbE SFP+ fiber/copper ports implemented via Intel Cortina 10GbE Phy's. The carrier features an Aspeed AST2500 Board Management Controller (BMC).

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