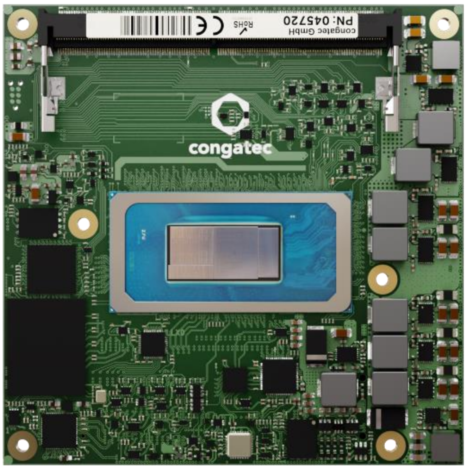
V6/25

Intel® Core™ Ultra Processors Series 2

conga-TC750

COM Express®



VIRTUALIZATION READY

- Cutting edge Intel® Arc™ Graphics with XMX Systolic Arrays and up to 128 EUs
- Next level Edge AI performance up to 99 TOPS total
- Up to 128 GB RAM with in-band ECC
- Intel® performance hybrid architecture with up to 16 cores and 22 threads
- PCI Express Gen 4 | USB 4

Form factor	COM Express® Compact | Type 6 connector pinout	
CPUs	Intel® Core™ Ultra Processors (Series 2) Arrow Lake-U/H (H-Series, U-Series)	
DRAM	2x SO-DIMM sockets for DDR5 memory modules up to 64 GB each (max. 128 GB RAM system capacity) | up to 6400 MT/s | in-band ECC	
Mass Storage	NVMe x4 SSD (optional) up to 1 TB capacity	
Graphics	Intel® Arc™ Graphics architecture | up to 8 X^e Cores with 128 EUs	
AI Acceleration	Up to 99 TOPS (platform total) | Integrated NPU accelerator on all part numbers	
Display	Up to 3x DDI (2x shared with USB4) | LVDS or eDP | 4x independent displays up to 8k	
Ethernet	2.5 GbE via Intel® i226 Ethernet controller series | Supporting TSN – Time Sensitive Networking (depending on PN) | Software Definable Pin (SDP) to be used for IEEE 1588	
I/O Interfaces	Up to 8 PCIe Gen4 PEG (H-Series) or up to 2x4 PCIe Gen4 PEG (U-Series) | up to 8 PCIe Gen4 | up to 2x USB4 | 4x USB 3.2 Gen2 (incl. USB 2.0) + 8x USB 2.0 | up to 2x SATA | 2x UART | GPIOs | GP SPI | LPC | SM Bus | I2C	
Audio	HDA	
congatec Board controller	Next Gen 6 congatec Board Controller | Multi Stage Watchdog | non-volatile User Data Storage | Manufacturing and Board Information | Board Statistics I^2C bus (fast mode, 400 kHz, multi-master) | Power Loss Control | Hardware Health Monitoring | POST Code Redirection	
Embedded BIOS Feature	AMI Aptio® UEFI firmware | 64 Mbyte serial SPI with congatec Embedded BIOS feature | OEM Logo | OEM CMOS default settings | LCD Control | Display Auto Detection | Backlight Control | Flash Update	
Security	Trusted Platform Module (TPM 2.0)	
Power Management	ACPI 6.0 with battery support	
Operating Systems	Microsoft® Windows 11 IoT Enterprise | Microsoft® Windows 11 | Microsoft® Windows 10 IoT Enterprise | Linux | Yocto	
Hypervisor	RTS Real-Time Hypervisor	
Temperature	Embedded Temp.: Operating 0°C to 60°C	Storage -20°C to 80°C
Humidity	Operating 10% to 85% r. H. non cond.	Storage 5% to 85% r. H. non cond.
Size	95 x 95 mm	

Alcom electronics
A STELIAU TECHNOLOGY COMPANY
Singel 3 | B-2550 Kontich | Belgium| Tel.+32(0)3 458 30 33
info@alcom.be | www.alcom.be
Rivium 1e straat 52 | 2909 LE Capelle aan den IJssel | The Netherlands
Tel.+31(0)10 288 25 00 | info@alcom.nl | www.alcom.nl

congatec

intel partner Titanium

intel CORE ULTRA 9

intel CORE ULTRA 7

intel CORE ULTRA 5

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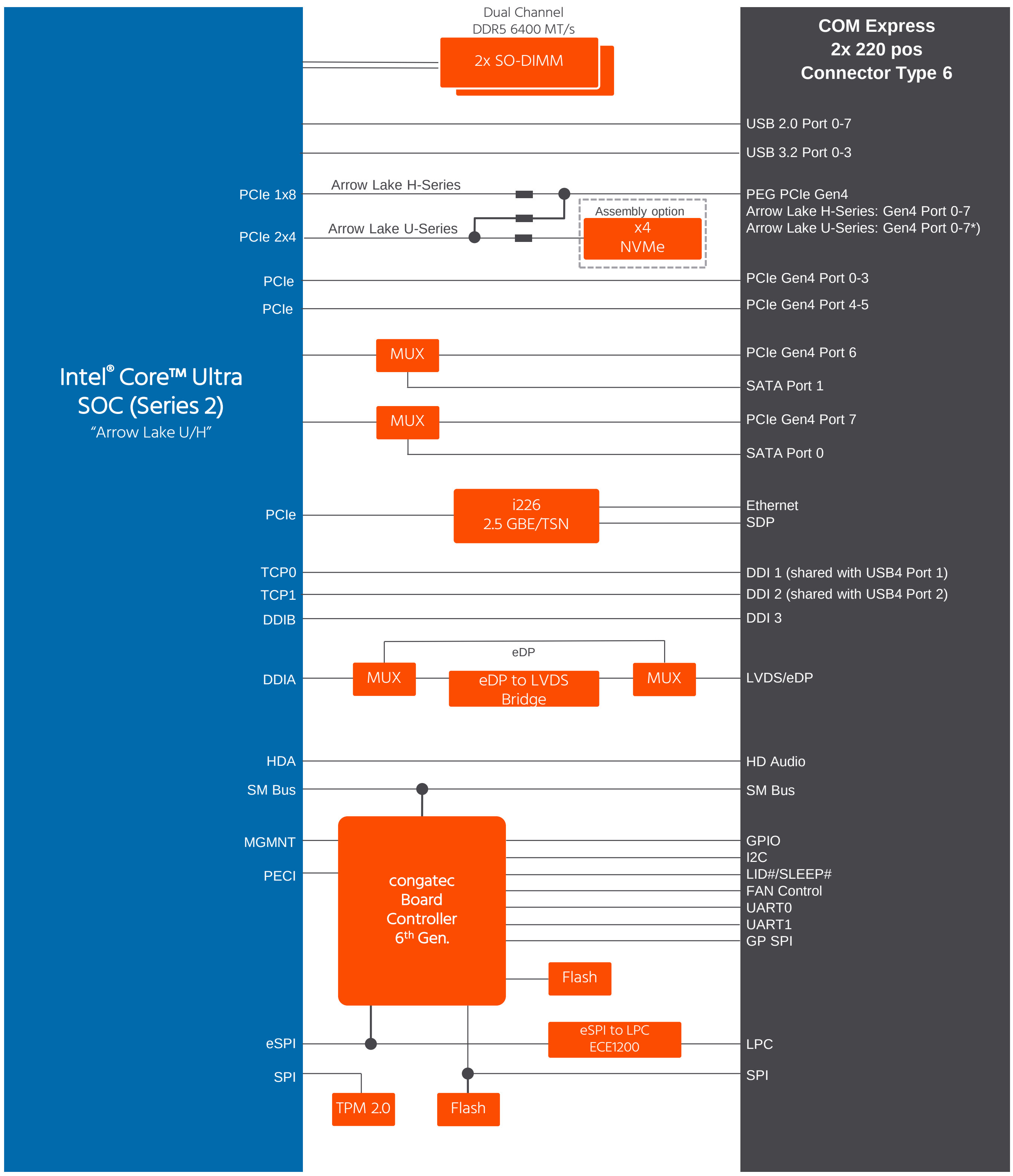
conga-TC750 | Block Diagram



Assembly option – only available on request

*) U-Series: If assembly option for NVMe is used PEG port capability is 1x4 on PEG[0:3]

conga-TC750 | Modules Order Information

Article	PN	Description
conga-TC750/ultra9-285H	045720	COM Express Type 6 Compact module based on Intel® Core™ Ultra 9 processor with 6 P-cores, 8 E-cores and 2 Low Power E-cores | P-cores 2.9Ghz up to 5.4GHz (turbo) | E-Cores 2.7GHz up to 4.5GHz (turbo) | Low Power E-cores up to 2.5GHz (turbo) | Integrated NPU | 24MB Intel® Smart Cache | Intel® Arc™ 140T graphics with 8 Xe cores (128 EU) | Dual channel SODIMM DDR5 memory interface up to 5600 MT/s | 45W Base-TDP | Intel® code name Arrow Lake-H
conga-TC750/ultra7-255H	045721	COM Express Type 6 Compact module based on Intel® Core™ Ultra 7 processor with 6 P-cores, 8 E-cores and 2 Low Power E-cores | P-cores 2.0Ghz up to 5.1GHz (turbo) | E-Cores 1.5GHz up to 4.4GHz (turbo) | Low Power E-cores up to 2.5GHz (turbo) | Integrated NPU | 24MB Intel® Smart Cache | Intel® Arc™ 140T graphics with 8 Xe cores (128 EU) | Dual channel SODIMM DDR5 memory interface up to 5600 MT/s | 28W Base-TDP | Intel® code name Arrow Lake-H
conga-TC750/ultra5-225H	045722	COM Express Type 6 Compact module based on Intel® Core™ Ultra 5 processor with 4 P-cores, 8 E-cores and 2 Low Power E-cores | P-cores 1.7Ghz up to 4.9GHz (turbo) | E-Cores 1.3GHz up to 4.3GHz (turbo) | Low Power E-cores up to 2.5GHz (turbo) | Integrated NPU | 18MB Intel® Smart Cache | Intel® Arc™ 130T graphics with 7 Xe cores (112 EU) | Dual channel SODIMM DDR5 memory interface up to 5600 MT/s | 28W Base-TDP | Intel® code name Arrow Lake-H
conga-TC750/ultra7-255U	045723	COM Express Type 6 Compact module based on Intel® Core™ Ultra 7 processor with 2 P-cores, 8 E-cores and 2 Low Power E-cores | P-cores 2.0Ghz up to 5.2GHz (turbo) | E-Cores 1.7GHz up to 4.2GHz (turbo) | Low Power E-cores up to 2.4GHz (turbo) | Integrated NPU | 12MB Intel® Smart Cache | Intel® Graphics with 4 Xe cores (64 EU) | Dual channel SODIMM DDR5 memory interface up to 5600 MT/s | 15W Base-TDP | Intel® code name Arrow Lake-U
conga-TC750/ultra5-225U	045724	COM Express Type 6 Compact module based on Intel® Core™ Ultra 5 processor with 2 P-cores, 8 E-cores and 2 Low Power E-cores | P-cores 1.5Ghz up to 4.8GHz (turbo) | E-Cores 1.3GHz up to 3.8GHz (turbo) | Low Power E-cores up to 2.4GHz (turbo) | Integrated NPU | 12MB Intel® Smart Cache | Intel® Graphics with 4 Xe cores (64 EU) | Dual channel SODIMM DDR5 memory interface up to 5600 MT/s | 15W Base-TDP | Intel® code name Arrow Lake-U

conga-TC750 | Accessories Order Information

Article	PN	Description
conga-TC700/CSA-HP-B	045750	Standard active cooling solution for high performance COM Express module conga-TC700/TC750 with integrated heat pipes, 25.5mm height and integrated 12V fan. All standoffs are with 2.7mm bore hole.
conga-TC700/CSA-HP-T	045751	Standard active cooling solution for high performance COM Express module conga-TC700/TC750 with integrated heat pipes, 25.5mm height and integrated 12V fan. All standoffs are M2.5mm threaded.
conga-TC700/CSP-HP-B	045752	Standard passive cooling solution for high performance COM Express module conga-TC700/TC750 with integrated heat pipes, 24.7mm height. All standoffs are with 2.7mm bore hole.
conga-TC700/CSP-HP-T	045753	Standard passive cooling solution for high performance COM Express module conga-TC700/TC750 with integrated heat pipes, 24.7mm height. All standoffs are M2.5mm threaded.
conga-TC700/HSP-HP-B	045754	Standard heatspreader for high performance COM Express module conga-TC700/TC750 with integrated heat pipes, 11mm height. All standoffs are with 2.7mm bore hole.
conga-TC700/HSP-HP-T	045755	Standard heatspreader for high performance COM Express module conga-TC700/TC750 with integrated heat pipes, 11mm height. All standoffs are M2.5mm threaded.
conga-TEVAL/COMe 3.1	065820	Evaluation carrier board for COM Express Type 6 revision 3.1 modules.
DDR5-SODIMM-5600 (8GB)	068930	DDR5 SODIMM memory module with up to 5600 MT/s and 8GB RAM, commercial temp 0°C to +60°C
DDR5-SODIMM-5600 (16GB)	068931	DDR5 SODIMM memory module with up to 5600 MT/s and 16GB RAM, commercial temp 0°C to +60°C
DDR5-SODIMM-5600 (32GB)	068932	DDR5 SODIMM memory module with up to 5600 MT/s and 32GB RAM, commercial temp 0°C to +60°C
DDR5-SODIMM-5600 (48GB)	068933	DDR5 SODIMM memory module with up to 5600 MT/s and 48GB RAM, commercial temp 0°C to +60°C

Singel 3 | B-2550 Kontich | Belgium| Tel.+32(0)3 458 30 33
info@alcom.be | www.alcom.be
Rivium 1e straat 52 | 2909 LE Capelle aan den IJssel | The Netherlands
Tel.+31(0)10 288 25 00 | info@alcom.nl | www.alcom.nl

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