

# Intel® Core™ Ultra Processors Series 2

# conga-TC750

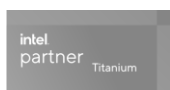
**COM**  **Express®**



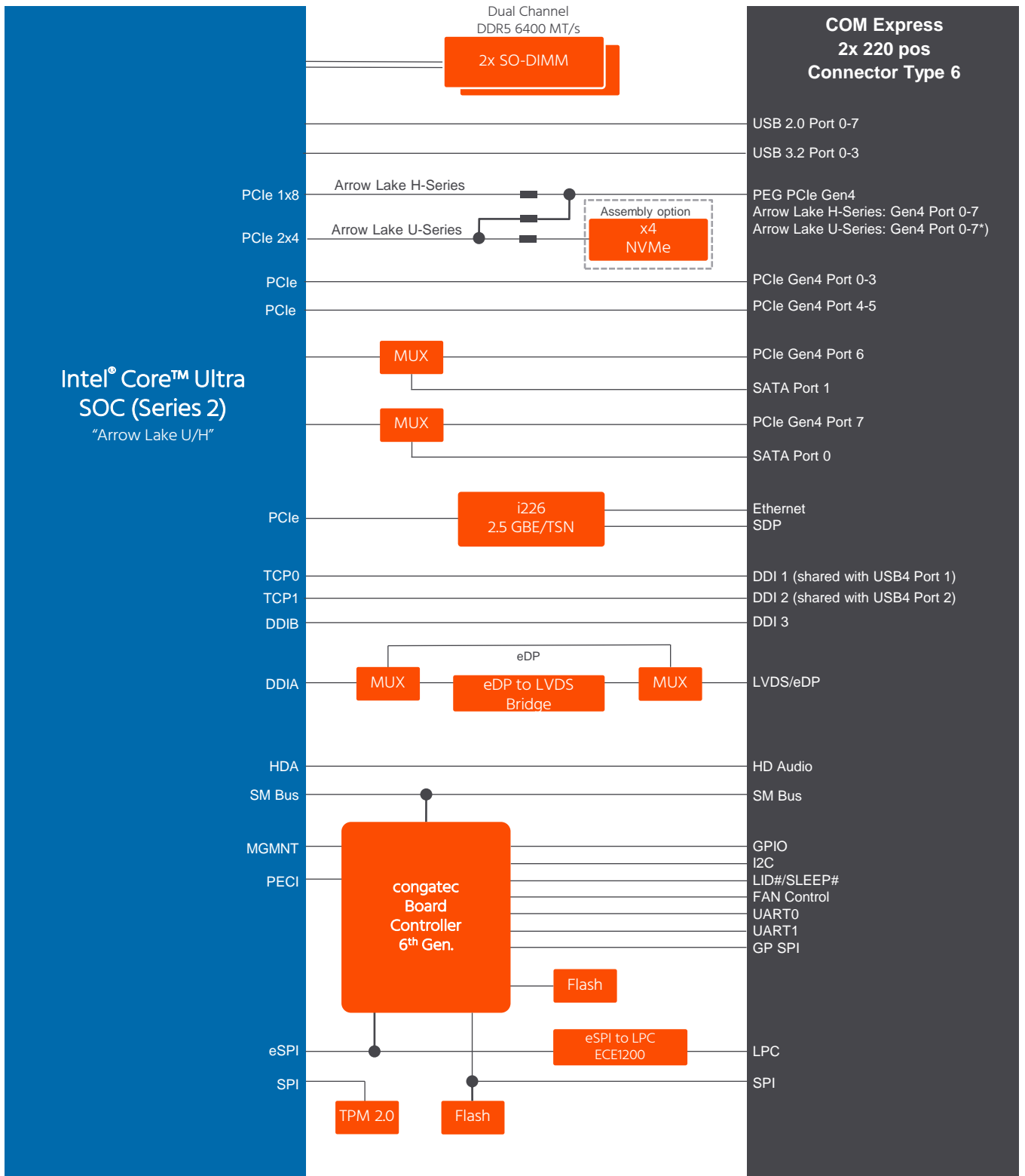
## VIRTUALIZATION READY


- Cutting edge Intel® Arc™ Graphics with XMV 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

<b>Form factor</b>	COM Express® Compact   Type 6 connector pinout	
<b>CPUs</b>	Intel® Core™ Ultra Processors (Series 2) Arrow Lake-U/H (H-Series, U-Series)	
<b>DRAM</b>	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	
<b>Mass Storage</b>	NVMe x4 SSD (optional) up to 1 TB capacity	
<b>Graphics</b>	Intel® Arc™ Graphics architecture   up to 8 X <sup>e</sup> Cores with 128 EUs	
<b>AI Acceleration</b>	Up to 99 TOPS (platform total)   Integrated NPU accelerator on all part numbers	
<b>Display</b>	Up to 3x DDI (2x shared with USB4)   LVDS or eDP   4x independent displays up to 8k	
<b>Ethernet</b>	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	
<b>I/O Interfaces</b>	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	
<b>Audio</b>	HDA	
<b>congatec Board controller</b>	Next Gen 6 congatec Board Controller   Multi Stage Watchdog   non-volatile User Data Storage   Manufacturing and Board Information   Board Statistics I <sup>2</sup> C bus (fast mode, 400 kHz, multi-master)   Power Loss Control   Hardware Health Monitoring   POST Code Redirection	
<b>Embedded BIOS Feature</b>	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	
<b>Security</b>	Trusted Platform Module (TPM 2.0)	
<b>Power Management</b>	ACPI 6.0 with battery support	
<b>Operating Systems</b>	Microsoft® Windows 11 IoT Enterprise   Microsoft® Windows 11   Microsoft® Windows 10 IoT Enterprise   Linux   Yocto	
<b>Hypervisor</b>	RTS Real-Time Hypervisor	
<b>Temperature</b>	Embedded Temp.: Operating 0°C to 60°C	Storage -20°C to 80°C
<b>Humidity</b>	Operating 10% to 85% r. H. non cond.	Storage 5% to 85% r. H. non cond.
<b>Size</b>	95 x 95 mm	



# 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