

# 13<sup>th</sup> Gen Intel® Core™ Embedded mobile Processors

## conga-TC675



### COM Express®

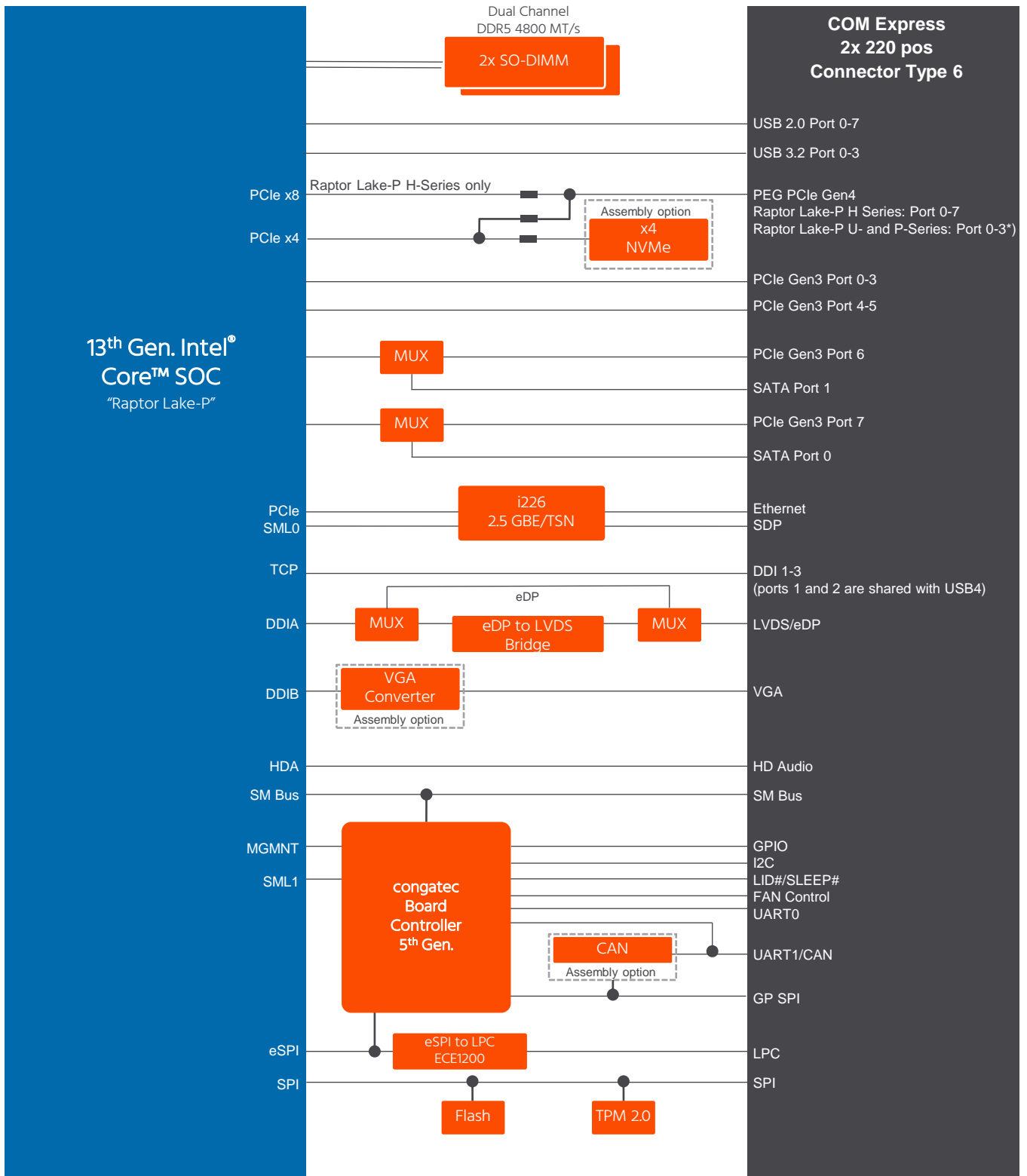


#### VIRTUALIZATION READY

- Intel® hybrid design combines Performance-cores with Efficient-cores
- Up to Intel® Iris® Xe Graphics architecture with up to 96 EUs
- PCI Express Gen 4 | up to USB 4
- Options for Industrial Temperature Range -40°C to +85°C

<b>Form factor</b>	COM Express® Compact   Type 6 connector pinout
<b>CPUs</b>	Intel® Core™ 13 <sup>th</sup> Gen Processors Raptor Lake-P (H-Series, P-Series, U-Series)
<b>DRAM</b>	2 SO-DIMM sockets for DDR5 memory modules up to 32 GB each (max. 64 GB RAM system capacity)   up to 4800 MT/s
<b>Mass Storage</b>	NVMe x4 SSD (optional)
<b>Graphics</b>	Intel® UHD Graphics or Intel® Iris® Xe Graphics architecture   up to 96 EUs
<b>Display</b>	Up to 3x DDI (2x shared with USB4)   LVDS or eDP   VGA (optional)
<b>Ethernet</b>	2.5 GbE with TSN support via Intel® i226 Ethernet controller series
<b>I/O Interfaces</b>	Up to 8 PCIe Gen4 PEG (H-Series) or up to 4 PCIe Gen4 PEG (P- and U-Series)   up to 8 PCIe Gen3   up to 2x USB4   4x USB 3.2 Gen2 (incl. USB 2.0) + 4x USB 2.0   up to 2x SATA   up to 2x UART   CAN (opt.)   GPIOs   GP SPI   LPC   SM Bus   I2C
<b>Audio</b>	HDA
<b>congatec Board controller</b>	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   32 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 5.0a with battery support
<b>Operating Systems</b>	Microsoft® Windows 11   Microsoft® Windows 11 IoT Enterprise   Microsoft® Windows 10   Microsoft® Windows 10 IoT Enterprise   Linux   Yocto
<b>Hypervisor</b>	RTS Real-Time Hypervisor
<b>Temperature Range</b>	Commercial Variants: Operation 0°C to 60°C    Storage -20°C to 80°C Industrial Variants: Operation -40°C to 85°C    Storage -40°C to 85°C
<b>Humidity</b>	Operation 10% to 90% r. H. non cond. Storage 5% to 95% r. H. non cond.
<b>Size</b>	95 x 95 mm

# conga-TC675 | Block Diagram



\*) If Assembly option for NVMe is used there is no PCIe support on PEG Port

# conga-TC675 | Modules Order Information (1/2)

Article	PN	Description
conga-TC675/i7-13800HE	045300	COM Express Type 6 Compact module based on Intel® Core™ i7-13800HE processor with 6 P-cores 2.5GHz up to 5.0GHz Turbo and 8 E-cores 1.8GHz up to 4.0GHz Turbo   24MB Intel® Smart Cache   Intel® Iris® X <sup>e</sup> Graphics architecture with 96 EUs   Dual channel DDR5 4800 MT/s memory interface   Intel® code name Raptor Lake-P (H-Series)
conga-TC675/i7-1370PE	045301	COM Express Type 6 Compact module based on Intel® Core™ i7-1370PE processor with 6 P-cores 1.9GHz up to 4.8GHz Turbo and 8 E-cores 1.2GHz up to 3.7GHz Turbo   24MB Intel® Smart Cache   Intel® Iris® X <sup>e</sup> Graphics architecture with 96 EUs   Dual channel DDR5 4800 MT/s memory interface   Intel® code name Raptor Lake-P (P-Series)
conga-TC675/i7-1365UE	045302	COM Express Type 6 Compact module based on Intel® Core™ i7-1365UE processor with 2 P-cores 1.7GHz up to 4.9GHz Turbo and 8 E-cores 1.2GHz up to 3.7GHz Turbo   12MB Intel® Smart Cache   Intel® Iris® X <sup>e</sup> Graphics architecture with 96 EUs   Dual channel DDR5 4800 MT/s memory interface   Intel® code name Raptor Lake-P (U-Series)
conga-TC675/i5-13600HE	045303	COM Express Type 6 Compact module based on Intel® Core™ i5-13600HE processor with 4 P-cores 2.7GHz up to 4.8GHz Turbo and 8 E-cores 1.9GHz up to 3.6GHz Turbo   18MB Intel® Smart Cache   Intel® Iris® X <sup>e</sup> Graphics architecture with 80EUs   Dual channel DDR5 4800 MT/s memory interface   Intel® code name Raptor Lake-P (H-Series)
conga-TC675/i5-1340PE	045304	COM Express Type 6 Compact module based on Intel® Core™ i5-1340PE processor with 4 P-cores 1.8GHz up to 4.5GHz Turbo and 8 E-cores 1.3GHz up to 3.3GHz Turbo   12MB Intel® Smart Cache   Intel® Iris® X <sup>e</sup> Graphics architecture with 80 EUs   Dual channel DDR5 4800 MT/s memory interface   Intel® code name Raptor Lake-P (P-Series)
conga-TC675/i5-1335UE	045305	COM Express Type 6 Compact module based on Intel® Core™ i5-1335UE processor with 2 P-cores 1.3GHz up to 4.5GHz Turbo and 8 E-cores 1.1GHz up to 3.3GHz Turbo   12MB Intel® Smart Cache   Intel® Iris® X <sup>e</sup> Graphics architecture with 80 EUs   Dual channel DDR5 4800 MT/s memory interface   Intel® code name Raptor Lake-P (U-Series)
conga-TC675/i3-13300HE	045306	COM Express Type 6 Compact module based on Intel® Core™ i3-13300HE processor with 4 P-cores 2.1GHz up to 4.6GHz Turbo and 4 E-cores 1.5GHz up to 3.4GHz Turbo   12MB Intel® Smart Cache   Intel® UHD Graphics with 48 EUs   Dual channel DDR5 4800 MT/s memory interface   Intel® code name Raptor Lake-P (H-Series)
conga-TC675/i3-1320PE	045307	COM Express Type 6 Compact module based on Intel® Core™ i3-1320PE processor with 4 P-cores 1.7GHz up to 4.5GHz Turbo and 4 E-cores 1.2GHz up to 3.3GHz Turbo   12MB Intel® Smart Cache   Intel® UHD Graphics with 48EUs   Dual channel DDR5 4800 MT/s memory interface   Intel® code name Raptor Lake-P (P-Series)
conga-TC675/i3-1315UE	045308	COM Express Type 6 Compact module based on Intel® Core™ i3-1315UE processor with 2 P-cores 1.2GHz up to 4.5GHz Turbo and 4 E-cores 0.9GHz up to 3.3GHz Turbo   10MB Intel® Smart Cache   Intel® UHD Graphics with 64EUs   Dual channel DDR5 4800 MT/s memory interface   Intel® code name Raptor Lake-P (U-Series)
conga-TC675/U300E	045309	COM Express Type 6 Compact module based on Intel® U300E processor with 1 P-core 1.1GHz up to 4.3GHz Turbo and 4 E-cores 0.9GHz up to 3.2GHz Turbo   8MB Intel® Smart Cache   Intel® UHD Graphics with 48 EUs   Dual channel DDR5 4800 MT/s memory interface   Intel® code name Raptor Lake-P (U-Series)

# conga-TC675 | Modules Order Information (2/2)

Article	PN	Description
conga-TC675/i7-13800HRE	045310	COM Express Type 6 Compact module based on Intel® Core™ i7-13800HRE processor with 6 P-cores 2.5GHz up to 5.0GHz Turbo and 8 E-cores 1.8GHz up to 4.0GHz Turbo   24MB Intel® Smart Cache   Intel® Iris® X <sup>e</sup> Graphics architecture with 96 EUs   Dual channel DDR5 4800 MT/s memory interface   Industrial grade temperature range from -40°C to +85°C   Intel® code name Raptor Lake-P (H-Series)
conga-TC675/i7-1370PRE	045311	COM Express Type 6 Compact module based on Intel® Core™ i7-1370PRE processor with 6 P-cores 1.9GHz up to 4.8GHz Turbo and 8 E-cores 1.2GHz up to 3.7GHz Turbo   24MB Intel® Smart Cache   Intel® Iris® X <sup>e</sup> Graphics architecture with 96 EUs   Dual channel DDR5 4800 MT/s memory interface   Industrial grade temperature range from -40°C to +85°C   Intel® code name Raptor Lake-P (P-Series)
conga-TC675/i7-1365URE	045312	COM Express Type 6 Compact module based on Intel® Core™ i7-1365URE processor with 2 P-cores 1.7GHz up to 4.9GHz Turbo and 8 E-cores 1.2GHz up to 3.7GHz Turbo   12MB Intel® Smart Cache   Intel® Iris® X <sup>e</sup> Graphics architecture with 96 EUs   Dual channel DDR5 4800 MT/s memory interface   Industrial grade temperature range from -40°C to +85°C   Intel® code name Raptor Lake-P (U-Series)
conga-TC675/i5-13600HRE	045313	COM Express Type 6 Compact module based on Intel® Core™ i5-13600HRE processor with 4 P-cores 2.7GHz up to 4.8GHz Turbo and 8 E-cores 1.9GHz up to 3.6GHz Turbo   18MB Intel® Smart Cache   Intel® Iris® X <sup>e</sup> Graphics architecture with 80EUs   Dual channel DDR5 4800 MT/s memory interface   Industrial grade temperature range from -40°C to +85°C   Intel® code name Raptor Lake-P (H-Series)
conga-TC675/i5-1350PRE	045314	COM Express Type 6 Compact module based on Intel® Core™ i5-1350PRE processor with 4 P-cores 1.8GHz up to 4.6GHz Turbo and 8 E-cores 1.3GHz up to 3.4GHz Turbo   12MB Intel® Smart Cache   Intel® Iris® X <sup>e</sup> Graphics architecture with 80 EUs   Dual channel DDR5 4800 MT/s memory interface   Industrial grade temperature range from -40°C to +85°C   Intel® code name Raptor Lake-P (P-Series)
conga-TC675/i5-1345URE	045315	COM Express Type 6 Compact module based on Intel® Core™ i5-1345URE processor with 2 P-cores 1.4GHz up to 4.6GHz Turbo and 8 E-cores 1.1GHz up to 3.4GHz Turbo   12MB Intel® Smart Cache   Intel® Iris® X <sup>e</sup> Graphics architecture with 80 EUs   Dual channel DDR5 4800 MT/s memory interface   Industrial grade temperature range from -40°C to +85°C   Intel® code name Raptor Lake-P (U-Series)
conga-TC675/i3-13300HRE	045316	COM Express Type 6 Compact module based on Intel® Core™ i3-13300HRE processor with 4 P-cores 2.1GHz up to 4.6GHz Turbo and 4 E-cores 1.5GHz up to 3.4GHz Turbo   12MB Intel® Smart Cache   Intel® UHD Graphics with 48 EUs   Dual channel DDR5 4800 MT/s memory interface   Industrial grade temperature range from -40°C to +85°C   Intel® code name Raptor Lake-P (H-Series)
conga-TC675/i3-1320PRE	045317	COM Express Type 6 Compact module based on Intel® Core™ i3-1320PRE processor with 4 P-cores 1.7GHz up to 4.5GHz Turbo and 4 E-cores 1.2GHz up to 3.3GHz Turbo   12MB Intel® Smart Cache   Intel® UHD Graphics with 48EUs   Dual channel DDR5 4800 MT/s memory interface   Industrial grade temperature range from -40°C to +85°C   Intel® code name Raptor Lake-P (P-Series)
conga-TC675/i3-1315URE	045318	COM Express Type 6 Compact module based on Intel® Core™ i3-1315URE processor with 2 P-cores 1.2GHz up to 4.5GHz Turbo and 4 E-cores 0.9GHz up to 3.3GHz Turbo   10MB Intel® Smart Cache   Intel® UHD Graphics with 64EUs   Dual channel DDR5 4800 MT/s memory interface   Industrial grade temperature range from -40°C to +85°C   Intel® code name Raptor Lake-P (U-Series)

# conga-TC675 | Accessories Order Information

Article	PN	Description
conga-TC670/CSA-HP-B	049750	Standard active cooling solution for high performance COM Express module conga-TC670/675 with integrated heat pipes, 25.5mm height and integrated 12V fan. All standoffs are with 2.7mm bore hole.
conga-TC670/CSA-HP-T	049751	Standard active cooling solution for high performance COM Express module conga-TC670/675 with integrated heat pipes, 25.5mm height and integrated 12V fan. All standoffs are M2.5mm threaded.
conga-TC670/CSP-HP-B	049752	Standard passive cooling solution for high performance COM Express module conga-TC670/675 with integrated heat pipes, 24.7mm height. All standoffs are with 2.7mm bore hole.
conga-TC670/CSP-HP-T	049753	Standard passive cooling solution for high performance COM Express module conga-TC670/675 with integrated heat pipes, 24.7mm height. All standoffs are M2.5mm threaded.
conga-TC670/HSP-HP-B	049754	Standard heatspreader for high performance COM Express module conga-TC670 with integrated heat pipes, 11mm height. All standoffs are with 2.7mm bore hole.
conga-TC670/HSP-HP-T	049755	Standard heatspreader for high performance COM Express module conga-TC670 with integrated heat pipes, 11mm height. All standoffs are M2.5mm threaded.
conga-TEVAL2	065810	Evaluation carrier board for COM Express Type6 rev3.0 modules.
conga-TEVAL3/COMe 3.1	065820	Evaluation carrier board for COM Express Type6 rev3.1 modules.
DDR5-SODIMM-4800 (8GB)	068901	DDR5 SODIMM memory module with up to 4800 MT/s and 8GB RAM, commercial temp 0°C to +60°C
DDR5-SODIMM-4800 (16GB)	068902	DDR5 SODIMM memory module with up to 4800 MT/s and 16GB RAM, commercial temp 0°C to +60°C
DDR5-SODIMM-4800 (32GB)	068903	DDR5 SODIMM memory module with up to 4800 MT/s and 32GB RAM, commercial temp 0°C to +60°C
DDR5-SODIMM-4800 (8GB) / i-temp	068921	DDR5 SODIMM memory module with up to 4800 MT/s and 8GB RAM, industrial temp -40°C to +85°C
DDR5-SODIMM-4800 (16GB) / i-temp	068922	DDR5 SODIMM memory module with up to 4800 MT/s and 16GB RAM, industrial temp -40°C to +85°C
DDR5-SODIMM-4800 (32GB) / i-temp	068923	DDR5 SODIMM memory module with up to 4800 MT/s and 32GB RAM, industrial temp -40°C to +85°C