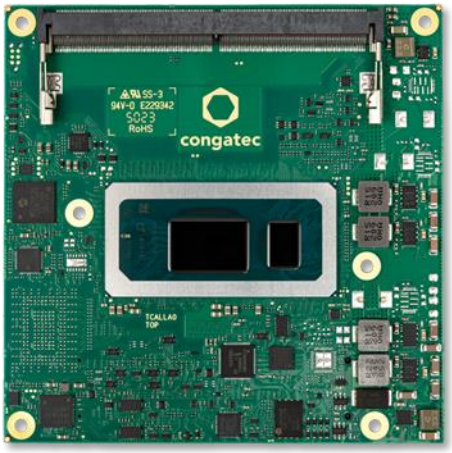
13th Gen Intel® Core™ Embedded mobile Processors

conga-TC675



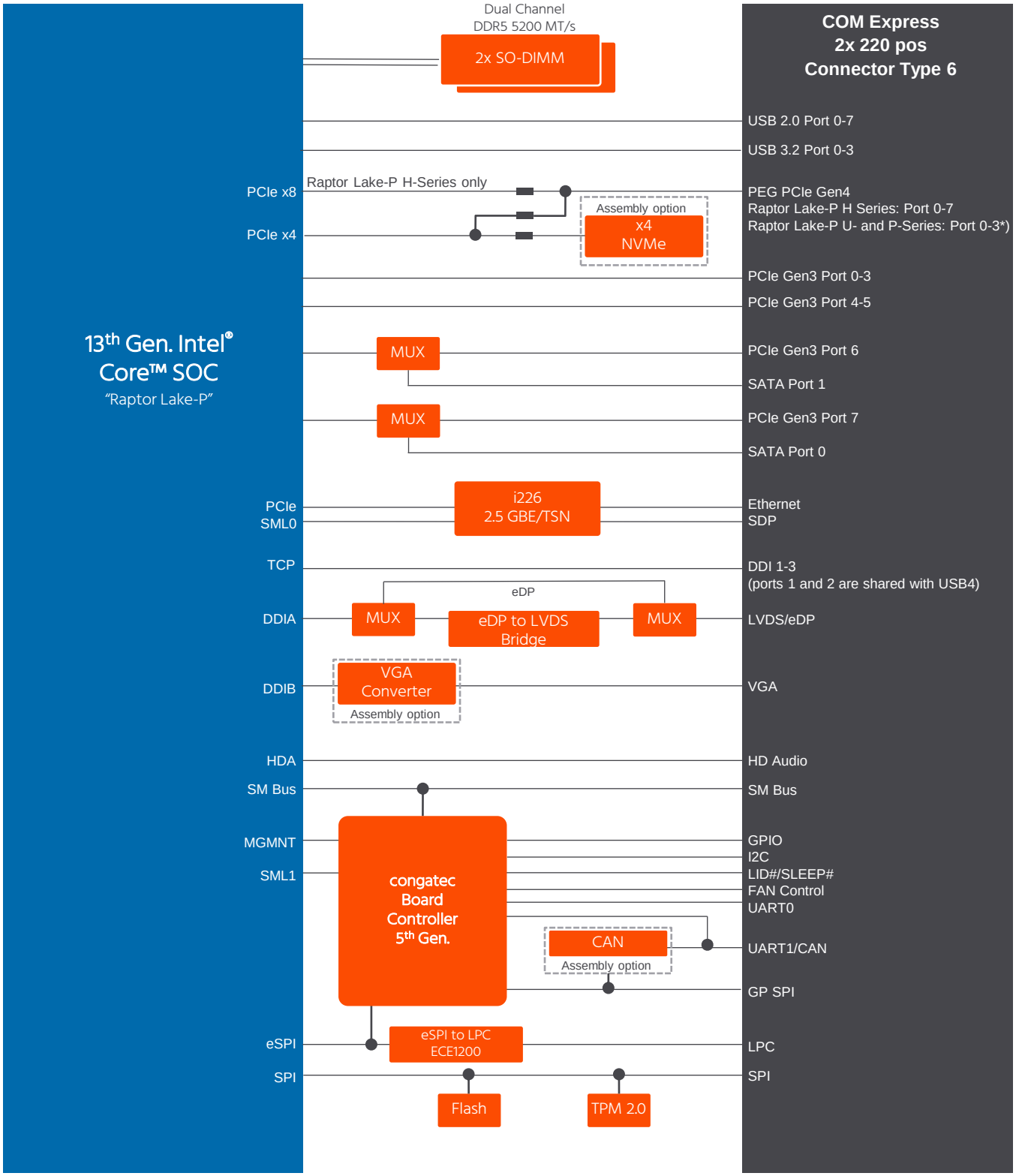
COM Express®

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

Form factor	COM Express® Compact	Type 6 connector pinout
CPUs	Intel® Core™ 13th Gen Processors Raptor Lake-P (H-Series, P-Series, U-Series)
DRAM	2 SO-DIMM sockets for DDR5 memory modules up to 48 GB each (max. 96 GB RAM system capacity)	up to 5200 MT/s
Mass Storage	NVMe x4 SSD (optional)
Graphics	Intel® UHD Graphics or Intel® Iris® Xᵉ Graphics architecture	up to 96 EUs
Display	Up to 3x DDI (2x shared with USB4)	LVDS or eDP	VGA (optional)
Ethernet	2.5 GbE with TSN support via Intel® i226 Ethernet controller series
I/O Interfaces	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
Audio	HDA
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 Feature	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
Security	Trusted Platform Module (TPM 2.0)
Power Management	ACPI 5.0a with battery support
Operating Systems	Microsoft® Windows 11	Microsoft® Windows 11 IoT Enterprise	Microsoft® Windows 10	Microsoft® Windows 10 IoT Enterprise	Linux	Yocto
Hypervisor	RTS Real-Time Hypervisor
Temperature Range	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
Humidity	Operation 10% to 85% r. H. non cond. Storage 5% to 85% r. H. non cond.
Size	95 x 95 mm

conga-TC675 | Block Diagram



Assembly option – only available on request

*) 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® Xᵉ 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® Xᵉ 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® Xᵉ 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® Xᵉ 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® Xᵉ 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® Xᵉ 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® Xᵉ 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® Xᵉ 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® Xᵉ 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® Xᵉ 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® Xᵉ 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® Xᵉ 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-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
DDR5-SODIMM-5600 (8GB) / i-temp	068935	DDR5 SODIMM memory module with up to 5600 MT/s and 8GB RAM, industrial temp -40°C to +85°C
DDR5-SODIMM-5600 (16GB) / i-temp	068936	DDR5 SODIMM memory module with up to 5600 MT/s and 16GB RAM, industrial temp -40°C to +85°C
DDR5-SODIMM-5600 (32GB) / i-temp	068937	DDR5 SODIMM memory module with up to 5600 MT/s and 32GB RAM, industrial temp -40°C to +85°C
DDR5-SODIMM-5600 (48GB) / i-temp	068938	DDR5 SODIMM memory module with up to 5600 MT/s and 48GB RAM, industrial temp -40°C to +85°C

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