

AMD RYZEN™ EMBEDDED 8000

conga-TCR8



VIRTUALIZATION READY

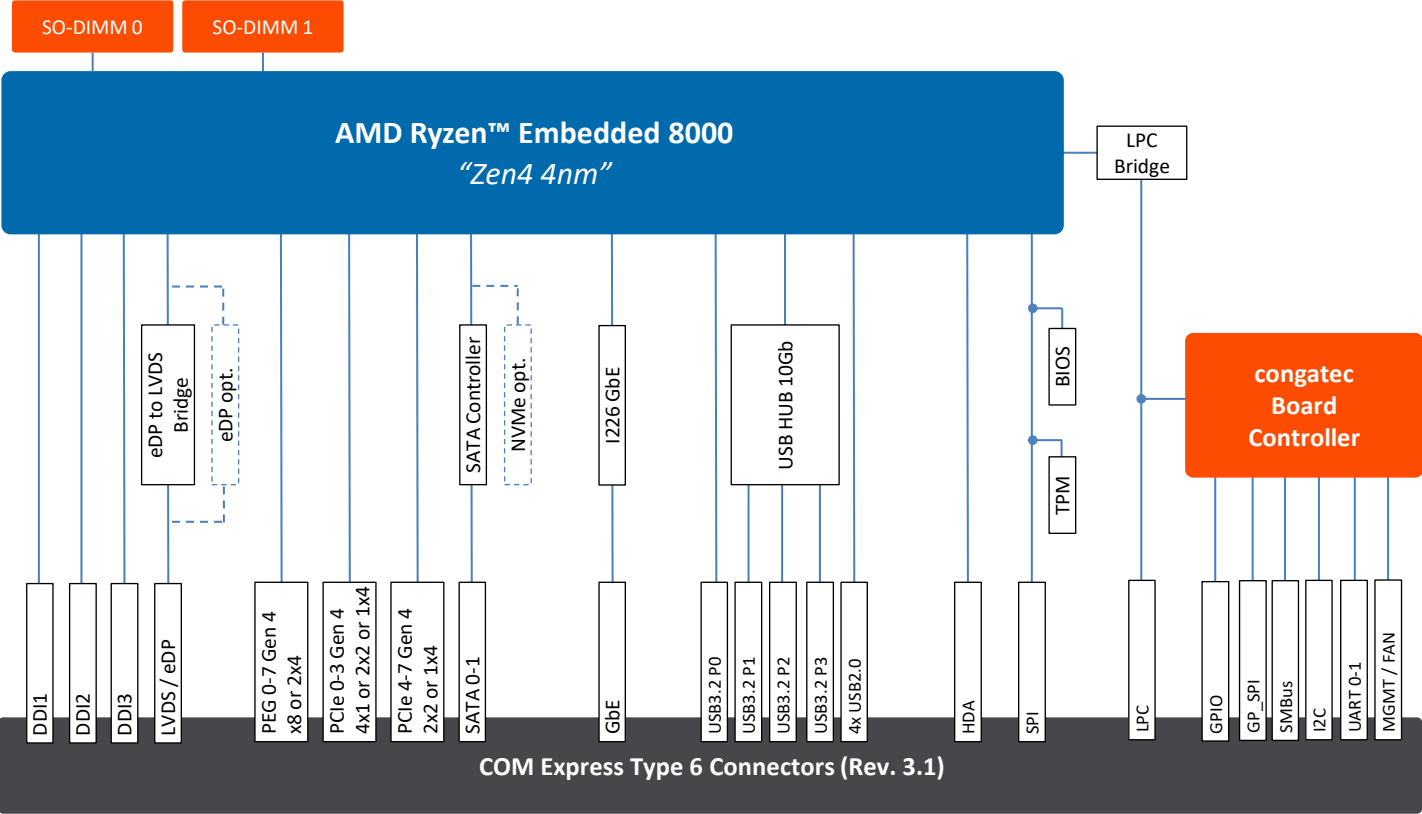
- Up to 8 Zen 4 cores
- AMD Radeon™ RDNA™ 3 Graphics
- AMD XDNA™ NPU
- Up to 96 GB RAM (optional with ECC)
- TDP Range from 15W to 54W
- Onboard NVMe™ SSD (option)

Form Factor

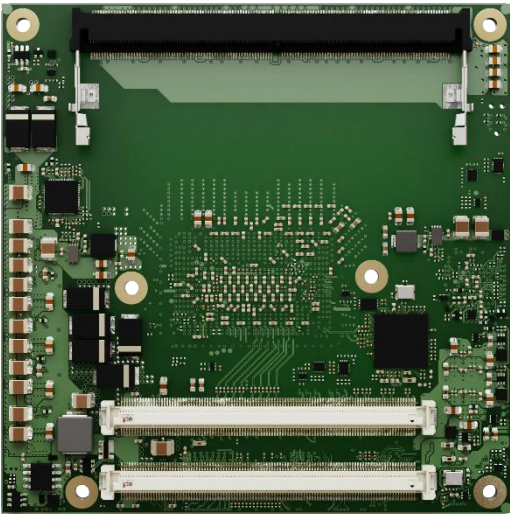
COM Express® Compact | Type 6 connector pinout

CPU	Processor	Cores / Threads	Base Frequency / max. Turbo	TDP	NPU	Graphics
	AMD Ryzen™ Embedded 8845HS	8C / 16T	3.8GHz / 5.1GHz	35-54W	16 TOPs	6 WGP
	AMD Ryzen™ Embedded 8840U	8C / 16T	3.3GHz / 5.1GHz	15-30W	16 TOPs	6 WGP
	AMD Ryzen™ Embedded 8645HS	6C / 12T	4.3GHz / 5.0GHz	35-54W	16 TOPs	4 WGP
	AMD Ryzen™ Embedded 8640U	6C / 12T	3.5GHz / 4.9GHz	15-30W	16 TOPs	4 WGP
DRAM	2 SO-DIMM sockets for DDR5 memory modules up to 48 GB each (max. 96 GB RAM system capacity) up to 5600 MT/s ECC (option)					
Mass Storage	NVMe™ SSD up to 1 TB capacity (option instead of SATA ports)					
Graphics	Integrated AMD Radeon™ RDNA™ 3 Graphics with up to 6x WGP (12 CUs)					
AI Acceleration	Integrated XDNA™ NPU with up to 16 TOPs Up to 39 TOPs total SoC performance					
Display	Up to 3x DDI LVDS or eDP 4x independent displays					
Ethernet	2.5 GbE via Intel® i226 Ethernet controller series					
I/O Interfaces	4x USB 3.2 Gen2 4x USB 2.0 2x SATA 6Gb/s (if NVMe™ SSD option is not used) 6x PCIe Gen4 (8 lanes) PEG x8 Gen4 1x I²C Bus 1x GPSPi 2x UART 8x GPIO 1x SMBus 1x LPC					
Audio	HD-Audio over DDI ports HDA interface					
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 Defaults LCD Control Display Auto Detection Backlight Control Flash Update					
Security	Trusted Platform Module (TPM 2.0) AMD Security Processor AMD Memory Guard					
Power Management	ACPI 6.0 with battery support					
Operating Systems	Microsoft® Windows 11 Microsoft® Windows 11 IoT Enterprise Microsoft® Windows 10 Microsoft® Windows 10 IoT Enterprise Linux					
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					

conga-TCR8 | Block Diagram



conga-TCR8 | Bottom Side View



conga-TCR8 | Order Information

Article	PN	Description
conga-TCR8/8845HS	051700	COM Express Type 6 Compact module based on AMD Ryzen™ Embedded 8845HS with 8 cores 3.8GHz up to 5.1GHz (boost) Integrated XDNA™ NPU Integrated RDNA™ 3 Graphics 24MB cache Dual channel SODIMM DDR5 5600 MT/s memory interface Commercial temperature range 0 to +60°C.
conga-TCR8/8840U	051701	COM Express Type 6 Compact module based on AMD Ryzen™ Embedded 8840U with 8 cores 3.3GHz up to 5.1GHz (boost) Integrated XDNA™ NPU Integrated RDNA™ 3 Graphics 24MB cache Dual channel SODIMM DDR5 5600 MT/s memory interface Commercial temperature range 0 to +60°C.
conga-TCR8/8645HS	051702	COM Express Type 6 Compact module based on AMD Ryzen™ Embedded 8645HS with 6 cores 4.3GHz up to 5.0GHz (boost) Integrated XDNA™ NPU Integrated RDNA™ 3 Graphics 22MB cache Dual channel SODIMM DDR5 5600 MT/s memory interface Commercial temperature range 0 to +60°C.
conga-TCR8/8640U	051703	COM Express Type 6 Compact module based on AMD Ryzen™ Embedded 8640U with 6 cores 3.2GHz up to 4.9GHz (boost) Integrated XDNA™ NPU Integrated RDNA™ 3 Graphics 22MB cache Dual channel SODIMM DDR5 5600 MT/s memory interface Commercial temperature range 0 to +60°C.
conga-TCR8/CSA-HP-B	051750	Standard active cooling solution for high performance COM Express module conga-TCR8 with integrated heat pipes and 12V fan. All standoffs are with 2.7mm bore hole.
conga-TCR8/CSA-HP-T	051751	Standard active cooling solution for high performance COM Express module conga-TCR8 with integrated heat pipes and 12V fan. All standoffs are M2.5mm threaded.
conga-TCR8/CSP-HP-B	051752	Standard passive cooling solution for high performance COM Express module conga-TCR8 with integrated heat pipes. All standoffs are with 2.7mm bore hole.
conga-TCR8/CSP-HP-T	051753	Standard passive cooling solution for high performance COM Express module conga-TCR8 with integrated heat pipes. All standoffs are M2.5mm threaded.
conga-TCR8/HSP-HP-B	051754	Standard heatspreader for high performance COM Express module conga-TCR8 with integrated heat pipes. All standoffs are with 2.7mm bore hole.
conga-TCR8/HSP-HP-T	051755	Standard heatspreader for high performance COM Express module conga-TCR8 with integrated heat pipes. All standoffs are M2.5mm threaded.
conga-TEVAL/COMe 3.1	065821	Evaluation carrier board for COM Express Type 6 revision 3.1 modules.
DDR5-SODIMM-5600 (8GB)	68930	DDR5 SODIMM memory module with up to 5600 MT/s and 8GB RAM, commercial temp 0°C to +60°C
DDR5-SODIMM-5600 (16GB)	68931	DDR5 SODIMM memory module with up to 5600 MT/s and 16GB RAM, commercial temp 0°C to +60°C
DDR5-SODIMM-5600 (32GB)	68932	DDR5 SODIMM memory module with up to 5600 MT/s and 32GB RAM, commercial temp 0°C to +60°C
DDR5-SODIMM-5600 (48GB)	68933	DDR5 SODIMM memory module with up to 5600 MT/s and 48GB RAM, commercial temp 0°C to +60°C
DDR5-SODIMM-5600 ECC (8GB)	68940	DDR5 SODIMM memory module with up to 5600 MT/s and 8GB RAM with ECC, commercial temp 0°C to +60°C
DDR5-SODIMM-5600 ECC (16GB)	68941	DDR5 SODIMM memory module with up to 5600 MT/s and 16GB RAM with ECC, commercial temp 0°C to +60°C
DDR5-SODIMM-5600 ECC (32GB)	68942	DDR5 SODIMM memory module with up to 5600 MT/s and 32GB RAM with ECC, commercial temp 0°C to +60°C
DDR5-SODIMM-5600 ECC (48GB)	68943	DDR5 SODIMM memory module with up to 5600 MT/s and 48GB RAM with ECC, commercial temp 0°C to +60°C