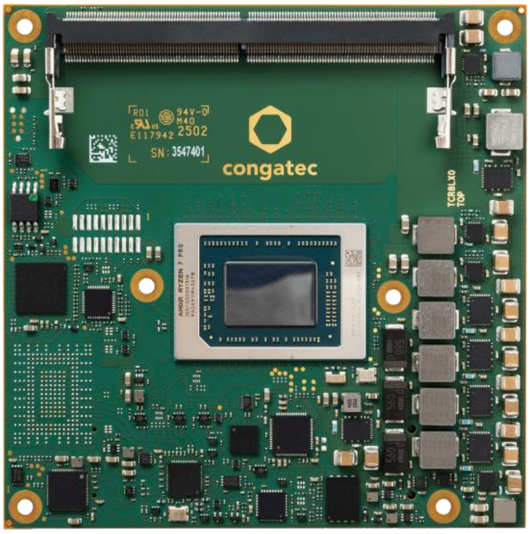
AMD RYZEN™ EMBEDDED 8000

conga-TCR8

COM Express®



VIRTUALIZATION READY

- Up to 8 Zen 4 cores
- AMD Radeon™ RDNA™ 3 Graphics
- AMD XDNA™ NPU
- Up to 96 GB RAM (ECC supported)
- 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	12 CUs
	AMD Ryzen™ Embedded 8840U	8C / 16T	3.3GHz / 5.1GHz	15-30W	16 TOPs	12 CUs
	AMD Ryzen™ Embedded 8645HS	6C / 12T	4.3GHz / 5.0GHz	35-54W	16 TOPs	8 CUs
	AMD Ryzen™ Embedded 8640U	6C / 12T	3.5GHz / 4.9GHz	15-30W	16 TOPs	8 CUs
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 supported					
Mass Storage	NVMe™ SSD up to 512GB capacity (option instead of SATA ports)					
Graphics	Integrated AMD Radeon™ RDNA™ 3 Graphics with up to 12x CUs (Compute Units)					
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					

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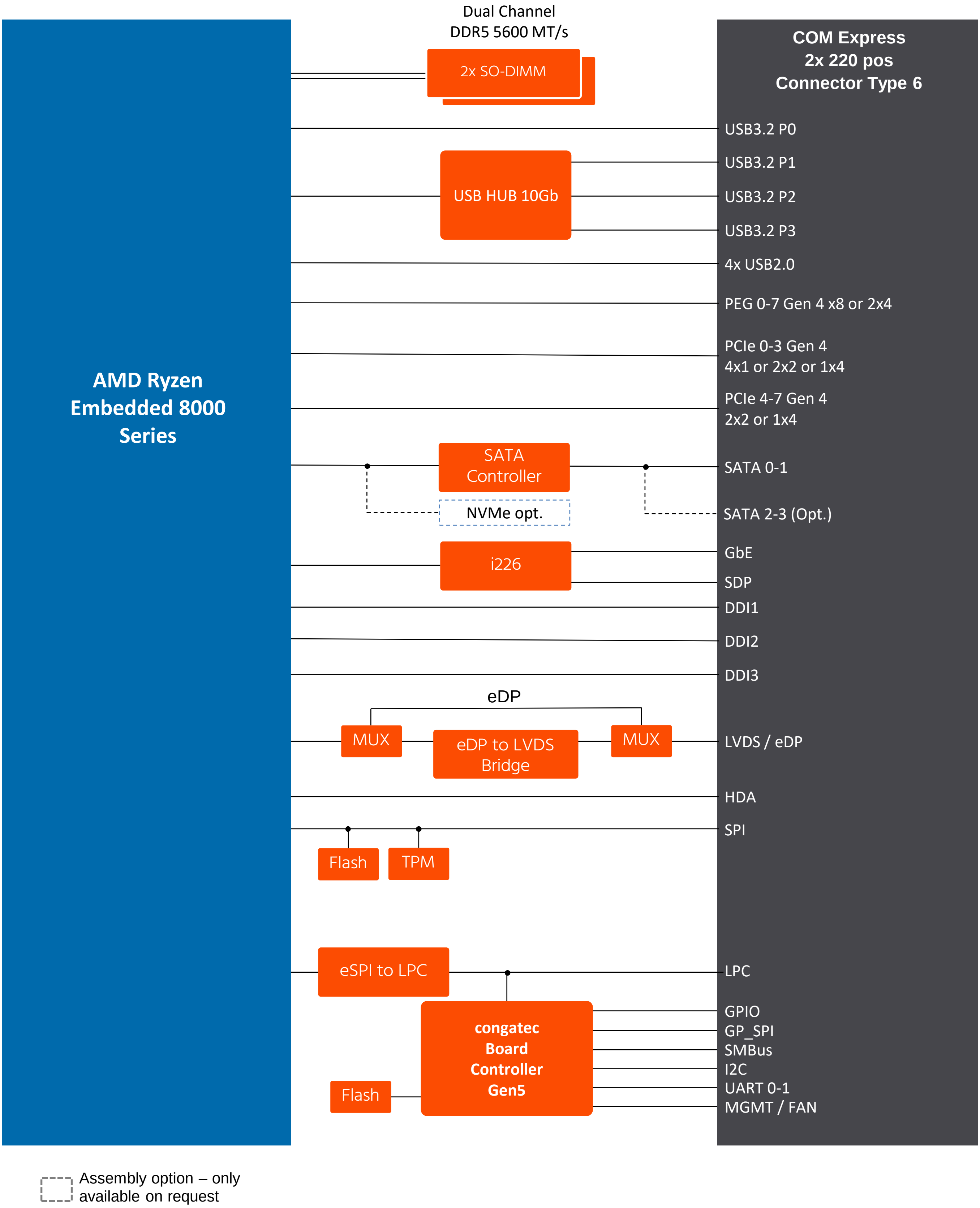
conga-TCR8 | Block Diagram



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 | 3.5GHz 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 3.0	065821	Evaluation carrier board for COM Express Type 6 revision 3.0 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 ECC (16GB)	068941	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)	068942	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)	068943	DDR5 SODIMM memory module with up to 5600 MT/s and 48GB RAM with ECC, commercial temp 0°C to +60°C

Product not yet released for Mass Production.

Preliminary Revision 1.0 – December 4th, 2025

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