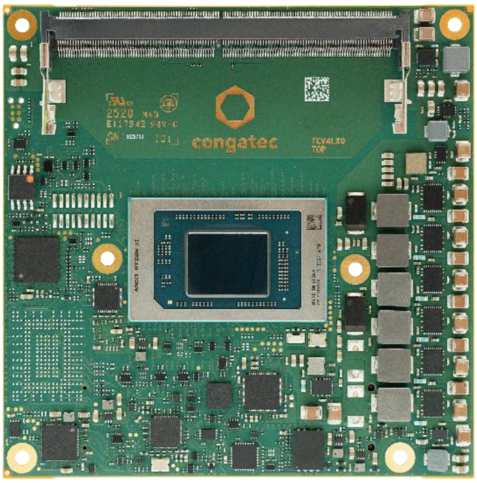
# AMD RYZEN™ AI EMBEDDED P100 Series

# conga-TCRP1



## aReady.COM

- AMD Zen5/5c CPU Cores
- AMD Radeon™ RDNA™ 3.5 Graphics
- AMD XDNA™ 2 NPU
- TDP Range from 15W to 54W
- Onboard NVMe™ SSD (option)

COM Express®

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|---|---|---|
| **Form Factor** | COM Express® Compact \| Type 6 connector pinout | |
| **CPUs** | AMD Ryzen™ AI Embedded P100 Series Processors | |
| **DRAM** | 2 SODIMM 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 512 GB capacity (option instead of SATA ports) | |
| **Graphics** | Integrated AMD Radeon™ RDNA™ 3.5 Graphics with up to 4x CUs (Compute Units) | |
| **AI Acceleration** | Integrated XDNA 2™ NPU with up to 50 TOPs | |
| **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) \| 8x PCIe Gen4 \| PEG x4 Gen4 \| additional PEG x2 Gen4 (8C, 10C and 12C Variants only) \| 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<br>Board Statistics \| I²C bus (fast mode, 400 kHz, multi-master) \| Power Loss Control<br>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) | |
| **Power Management** | ACPI 6.0 with battery support | |
| **Operating Systems** | Microsoft® Windows 11 \| Microsoft® Windows 11 IoT Enterprise \| Linux | |
| **Hypervisor** | conga-zones (formerly known as RTS Hypervisor) | |
| **Temperature** | Commercial Temp.: Operating 0°C to 60°C<br>Industrial Temp.: Operating -40°C to +85°C | Commercial Temp.: Storage -20°C to 80°C<br>Industrial Temp.: Storage -40°C to 85°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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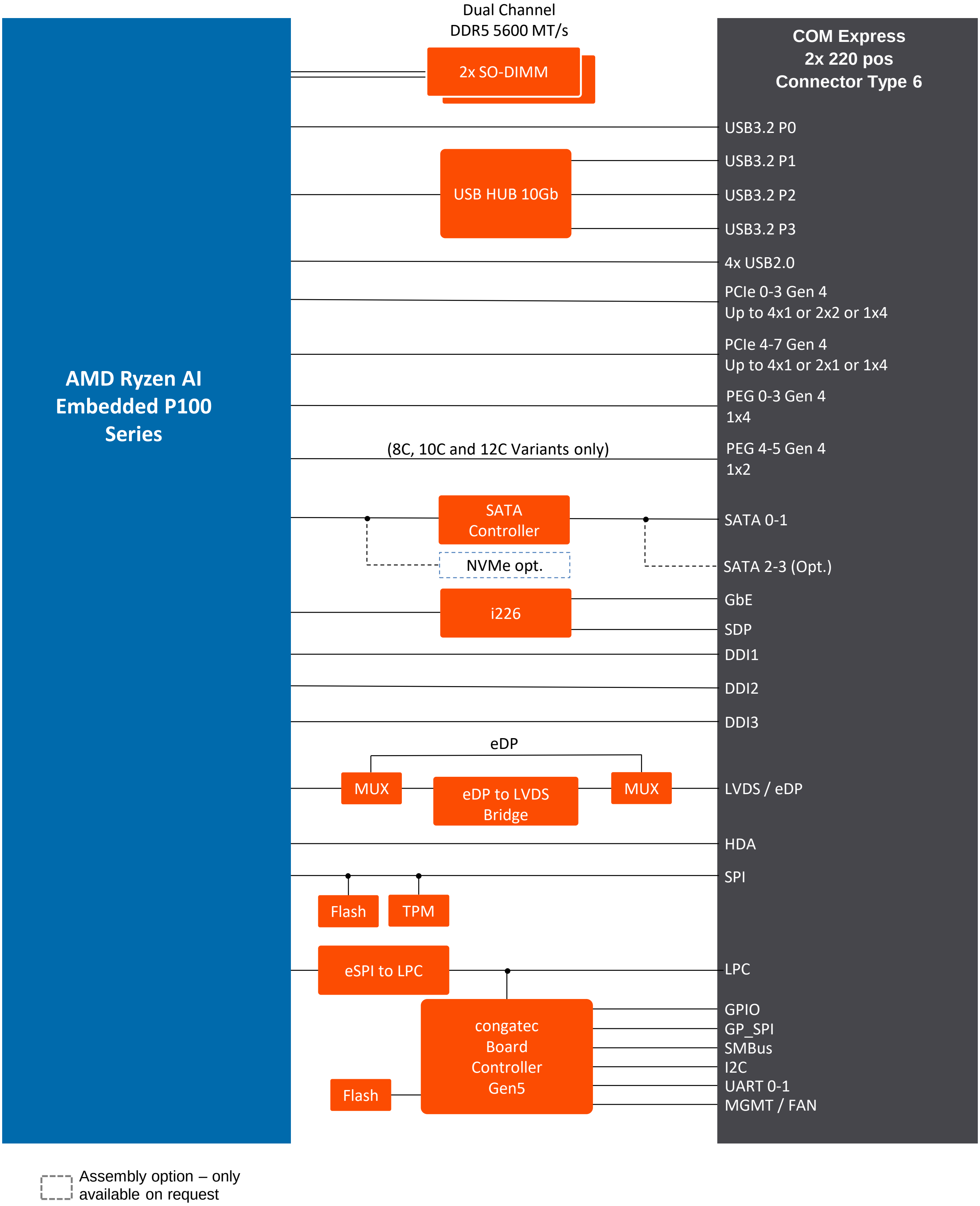
# conga-TCRP1 | Block Diagram



# conga-TCRP1 | Order Information (1/2)

| Article | PN | Description |
|---|---|---|
| conga-TCRP1/P185 | 051800 | COM Express Compact module based on AMD Ryzen™ AI Embedded P185 processor with 12 Cores \| Integrated XDNA 2™ NPU \| Integrated RDNA™ 3.5 Graphics with 16 CUs \| Dual channel SODIMM DDR5 5600 MT/s memory interface \| Commercial grade temperature range from 0°C to +60°C |
| conga-TCRP1/P174 | 051801 | COM Express Compact module based on AMD Ryzen™ AI Embedded P174 processor with 10 Cores \| Integrated XDNA 2™ NPU \| Integrated RDNA™ 3.5 Graphics with 12 CUs \| Dual channel SODIMM DDR5 5600 MT/s memory interface \| Commercial grade temperature range from 0°C to +60°C |
| conga-TCRP1/P164 | 051802 | COM Express Compact module based on AMD Ryzen™ AI Embedded P164 processor with 8 Cores \| Integrated XDNA 2™ NPU \| Integrated RDNA™ 3.5 Graphics with 12 CUs \| Dual channel SODIMM DDR5 5600 MT/s memory interface \| Commercial grade temperature range from 0°C to +60°C |
| conga-TCRP1/P132 | 051803 | COM Express Compact module based on AMD Ryzen™ AI Embedded P132 processor with 6 Cores \| Integrated XDNA 2™ NPU \| Integrated RDNA™ 3.5 Graphics with 4 CUs \| Dual channel SODIMM DDR5 5600 MT/s memory interface \| Commercial grade temperature range from 0°C to +60°C |
| conga-TCRP1/P121 | 051804 | COM Express Compact module based on AMD Ryzen™ AI Embedded P121 processor with 4 Cores \| Integrated XDNA 2™ NPU \| Integrated RDNA™ 3.5 Graphics with 2 CUs \| Dual channel SODIMM DDR5 5600 MT/s memory interface \| Commercial grade temperature range from 0°C to +60°C |
| conga-TCRP1/P185i | 051810 | COM Express Compact module based on AMD Ryzen™ AI Embedded P185i processor with 12 Cores \| Integrated XDNA 2™ NPU \| Integrated RDNA™ 3.5 Graphics with 16 CUs \| Dual channel SODIMM DDR5 5600 MT/s memory interface \| Industrial grade temperature range from -40°C to +85°C |
| conga-TCRP1/P174i | 051811 | COM Express Compact module based on AMD Ryzen™ AI Embedded P174i processor with 10 Cores \| Integrated XDNA 2™ NPU \| Integrated RDNA™ 3.5 Graphics with 12 CUs \| Dual channel SODIMM DDR5 5600 MT/s memory interface \| Industrial grade temperature range from -40°C to +85°C |
| conga-TCRP1/P164i | 051812 | COM Express Compact module based on AMD Ryzen™ AI Embedded P164i processor with 8 Cores \| Integrated XDNA 2™ NPU \| Integrated RDNA™ 3.5 Graphics with 12 CUs \| Dual channel SODIMM DDR5 5600 MT/s memory interface \| Industrial grade temperature range from -40°C to +85°C |
| conga-TCRP1/P132i | 051813 | COM Express Compact module based on AMD Ryzen™ AI Embedded P132i processor with 6 Cores \| Integrated XDNA 2™ NPU \| Integrated RDNA™ 3.5 Graphics with 4 CUs \| Dual channel SODIMM DDR5 5600 MT/s memory interface \| Industrial grade temperature range from -40°C to +85°C |
| conga-TCRP1/P121i | 051814 | COM Express Compact module based on AMD Ryzen™ AI Embedded P121i processor with 4 Cores \| Integrated XDNA 2™ NPU \| Integrated RDNA™ 3.5 Graphics with 2 CUs \| Dual channel SODIMM DDR5 5600 MT/s memory interface \| Industrial grade temperature range from -40°C to +85°C |
| | | |
| conga-TCRP1/CSA-HP-B | 051850 | Standard active cooling solution for high performance COM Express module conga-TCRP1 with integrated heat pipes and 12V fan. All standoffs are with 2.7mm bore hole. |
| conga-TCRP1/CSA-HP-T | 051851 | Standard active cooling solution for high performance COM Express module conga-TCRP1 with integrated heat pipes and 12V fan. All standoffs are M2.5mm threaded. |
| conga-TCRP1/CSP-HP-B | 051852 | Standard passive cooling solution for high performance COM Express module conga-TCRP1 with integrated heat pipes. All standoffs are with 2.7mm bore hole. |
| conga-TCRP1/CSP-HP-T | 051853 | Standard passive cooling solution for high performance COM Express module conga-TCRP1 with integrated heat pipes. All standoffs are M2.5mm threaded. |
| conga-TCRP1/HSP-HP-B | 051854 | Standard heatspreader for high performance COM Express module conga-TCRP1 with integrated heat pipes. All standoffs are with 2.7mm bore hole. |
| conga-TCRP1/HSP-HP-T | 051855 | Standard heatspreader for high performance COM Express module conga-TCRP1 with integrated heat pipes. All standoffs are M2.5mm threaded. |
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| conga-TEVAL/COMe 3.0 | 065821 | Evaluation carrier board for COM Express Type 6 revision 3.0 modules. |

# conga-TCRP1 | Order Information (2/2)

| Article | PN | Description |
|---|---|---|
| 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 |
| 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 |
| DDR5-SODIMM-5600 ECC (16GB) / i-temp | 068946 | DDR5 SODIMM memory module with up to 5600 MT/s and 16GB RAM with ECC, industrial temp -40°C to +85°C |
| DDR5-SODIMM-5600 ECC (32GB) / i-temp | 068947 | DDR5 SODIMM memory module with up to 5600 MT/s and 32GB RAM with ECC, industrial temp -40°C to +85°C |
| DDR5-SODIMM-5600 ECC (48GB) / i-temp | 068948 | DDR5 SODIMM memory module with up to 5600 MT/s and 48GB RAM with ECC, industrial temp -40°C to +85°C |

Product not yet released for Mass Production.

Preliminary Revision 0.3 – February 19th, 2026