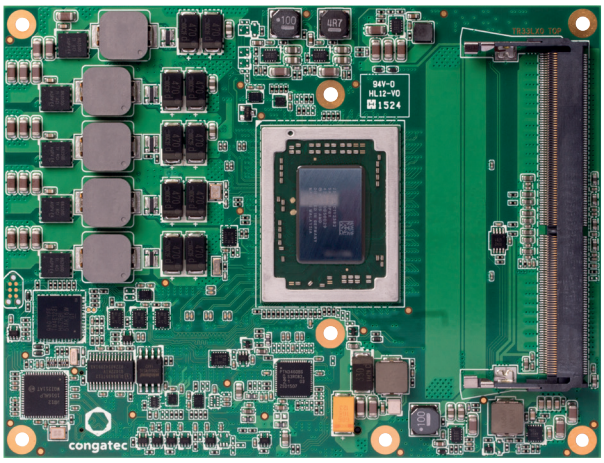
HIGH SPEED GRAPHICS

conga-TR3

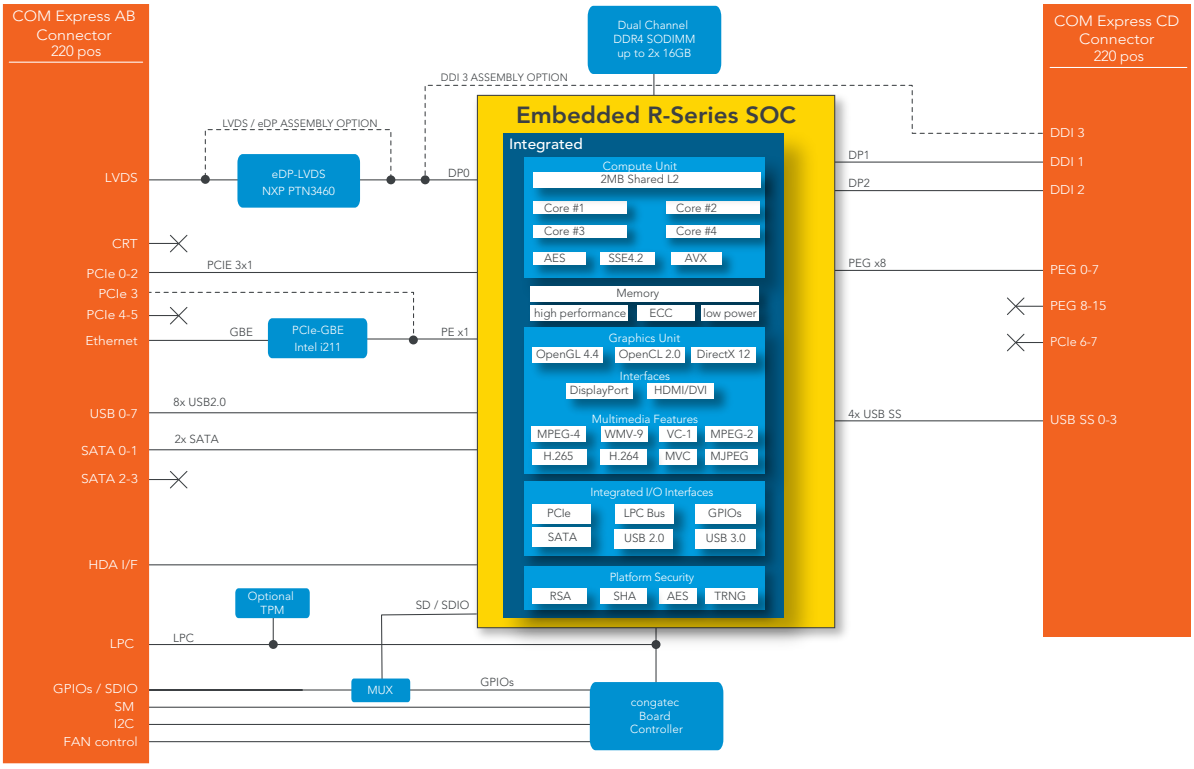


- AMD Embedded R-Series SOC
- Up to 4 “Excavator” Cores
- High performance integrated 3rd Gen. GCN graphics with up to 512 stream processors
- Unified Video Decoder (UVD 6) supporting HEVC/H.265 4K@60Hz
- ECC protected DDR4 memory up to 32 GByte
- Full HSA 2.0 compliant (Heterogenous System Architecture)
- TDP scalable down to 12W

COM Express®

Formfactor	COM Express® Basic | (95 x 125 mm) | Type 6 Connector Layout
CPU	AMD Embedded R-Series SOC AMD Embedded RX-421BD 4x 2.1 .. 3.4 GHz L2 cache 2MB shared Radeon™ R7 Graphics TDP 15 W, conf. to 12/25/35 W AMD Embedded RX-418GD 4x 1.8 .. 3.2 GHz L2 cache 2MB shared Radeon™ R6 Graphics TDP 15 W, conf. to 12/25/35 W AMD Embedded RX-216GD 2x 1.6 .. 3.0 GHz L2 cache 1MB shared Radeon™ R5 Graphics TDP 15 W, conf. to 12 W
DRAM	2 Sockets, SO-DIMM DDR4 up to 32 GByte with ECC
Chipset	Integrated in SOC (single-chip)
Ethernet	Gigabit Ethernet
I/O Interfaces	3x PCI Express™ 2.0 lanes | 1x PEG 3.0 x8 | 2x SATA® 6 Gb/s | 4x USB 3.0/2.0 | 4x USB 2.0 | I²C bus (fast mode, 400 kHz, multi-master) | SD | LPC Bus | SPI | SM-Bus | 2x UART
Sound	High Definition Audio Interface | TrueAudio 2.1
Graphics	Integrated AMD Radeon™ Graphics supports DirectX 12 | OpenGL 4.4 and OpenCL™ 2.0 | up to 3 Simultaneous Displays Unified Video Decoder 6 (H.265, H.264, MVC, MPEG4, MPEG2, VC-1, WMV and MJPEG) Video Compression Engine 3.1 (dual, H.264, SVC)
LVDS	18/24-bit Single/Dual Channel LVDS Interface | Resolutions up to 1920X1200@60Hz | VESA standard or JEIDA data mapping | Automatic Panel Detection via EDID/EPI
Digital Display Interface	2x DisplayPort 1.2/ HDMI 2.0 supporting 4K @60Hz
congatec Board Controller	Multi Stage Watchdog | non-volatile User Data Storage | Manufacturing and Board Information | Board Statistics | BIOS Setup Data Backup I²C bus (fast mode, 400 kHz, multi-master) | Power Loss Control | Backlight
Embedded BIOS Features	AMI AptioV® UEFI 2.x firmware | 8 MByte serial SPI firmware flash
Security	The conga-TR3 can be optionally equipped with a discrete “Trusted Platform Module” (TPM). It is capable of calculating efficient hash and RSA algorithms with key lengths up to 2,048 bits and includes a real random number generator. Security sensitive applications such as gaming and e-commerce will benefit also with improved authentication, integrity and confidence levels.
Power Management	ACPI 5.0 with battery support
Operating Systems	Microsoft® Windows 10 | Microsoft® Windows 8.1 | Microsoft® Windows® 8 Embedded Standard | Linux | optional Microsoft® Windows 7
Temperature	Commercial : Operating: 0 to +60°C | Storage: -20 to +80°C
Humidity	Operating: 10 - 90% r. H. non cond. | Storage: 5 - 95% r. H. non cond.
Size	95 x 125 mm (3.74” x 4.92”)

conga-TR3 | Block diagram



conga-TR3 | Order Information

Article	PN	Description
conga-TR3/RX421BD	041300	COM Express Basic Type 6 module | AMD Embedded RX-421BD SOC | AMD Radeon™ R7 Graphics | TDP 15/12-35W | Quad-core | CPU freq. 2.1/3.4 GHz | 8 GPU-CU | GPU freq. 800 MHz
conga-TR3/RX418GD	041301	COM Express Basic Type 6 module | AMD Embedded RX-418GD SOC | AMD Radeon™ R6 Graphics | TDP 15/12-35W | Quad-core | CPU freq. 1.8/3.2 GHz | 6 GPU-CU | GPU freq. 800 MHz
conga-TR3/RX216GD	041302	COM Express Basic Type 6 module | AMD Embedded RX-216GD SOC | AMD Radeon™ R5 Graphics | TDP 15/12-15W | Dual-core | CPU freq. 1.6/3.0 GHz | 4 GPU-CU | GPU freq. 800 MHz
conga-TR3/HSP-HP-B	041351	Standard heatspreader for high performance COM Express module conga-TR3 with integrated heat pipes. All standoffs are with 2.7mm bore hole.
conga-TR3/HSP-HP-T	041352	Standard heatspreader for high performance COM Express module conga-TR3 with integrated heat pipes. All standoffs are M2.5mm thread.
conga-TR3/CSP-HP-B	041355	Standard passive cooling solution for high performance COM Express module conga-TR3 with integrated heat pipes, 15mm fins and 20mm overall heat sink height. All standoffs are with 2.7mm bore hole.
conga-TR3/CSP-HP-T	041356	Standard passive cooling solution for high performance COM Express module conga-TR3 with integrated heat pipes, 15mm fins and 20mm overall heat sink height. All standoffs are M2.5mm thread.
conga-TR3/CSA-HP-B	041357	Standard active cooling solution for high performance COM Express module conga-TR3 with integrated heat pipes, 15mm fins, 20mm overall heat sink height and integrated 12V fan. All standoffs are with 2.7mm bore hole.
conga-TR3/CSA-HP-T	041358	Standard active cooling solution for high performance COM Express module conga-TR3 with integrated heat pipes, 15mm fins, 20mm overall heat sink height and integrated 12V fan. All standoffs are M2.5mm thread.
DDR4-SODIMM-2400 (4GB)	068790	4 GByte DDR4 SODIMM memory module | 2400 MT/s
DDR4-SODIMM-2400 (8GB)	068791	8 GByte DDR4 SODIMM memory module | 2400 MT/s
DDR4-SODIMM-2400 (16GB)	068792	16 GByte DDR4 SODIMM memory module | 2400 MT/s
DDR4-SODIMM-2400 ECC (4GB)	068795	4 GByte ECC DDR4 SODIMM memory module | 2400 MT/s (PC4-2400) | 260 pin | supply voltage 1,2V
DDR4-SODIMM-2400 ECC (8GB)	068796	8 GByte ECC DDR4 SODIMM memory module | 2400 MT/s (PC4-2400) | 260 pin | supply voltage 1,2V
DDR4-SODIMM-2400 ECC (16GB)	068797	16 GByte ECC DDR4 SODIMM memory module | 2400 MT/s (PC4-2400) | 260 pin | supply voltage 1,2V

Accessories		
conga-TEVAL	065800	Evaluation carrier board for Type 6 COM-Express-modules
conga-LDVI/EPI	011115	LVDS to DVI converter board for digital flat panels with onboard EEPROM
COM-Express-Carrier-Socket-5	400007	Connector for COM-Express carrier boards | height 5mm | packing unit 4 pieces
COM-Express-Carrier-Socket-8	400004	Connector for COM-Express carrier boards | height 8mm | packing unit 4 pieces

© 2016 congatec AG. All rights reserved.

All data is for information purposes only. Although all the information contained within this document is carefully checked, no guarantee of correctness is implied or expressed. Product names, logos, brands, and other trademarks featured or referred are the property of their respective trademark holders. These trademark holders are not affiliated with congatec AG. Rev. April 25, 2016 MR