

# HIGH SPEED GRAPHICS

## conga-TR3

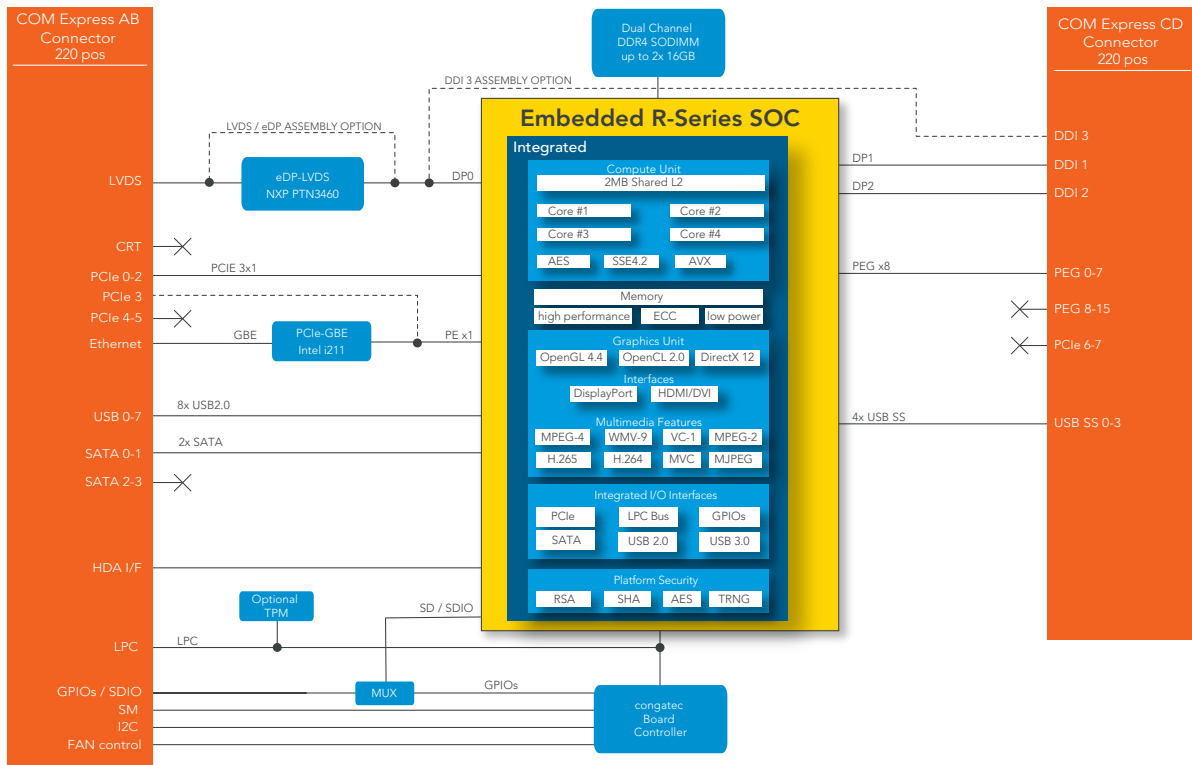


- AMD Embedded R-Series SOC
- Up to 4 "Excavator" Cores
- High performance integrated 3<sup>rd</sup> Gen. GCN graphics with up to 512 stream processors
- Unified Video Decoder (UVD 6) supporting HEVC/H.265 4K@60Hz
- ECC protected DDR4 memory up to 32 GByte
- Full HSA 2.0 compliant (Heterogenous System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



Formfactor	COM Express® Basic   (95 x 125 mm)   Type 6 Connector Layout
CPU	<p>AMD Embedded R-Series SOC</p> <p>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</p> <p>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</p> <p>AMD Embedded RX-216GD    2x 1.6 .. 3.0 GHz    L2 cache 1MB shared    Radeon™ R5 Graphics    TDP 15 W, conf. to 12 W</p>
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 standoff heights 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
<b>Accessories</b>		
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