

# HIGH SPEED GRAPHICS

## conga-TR3

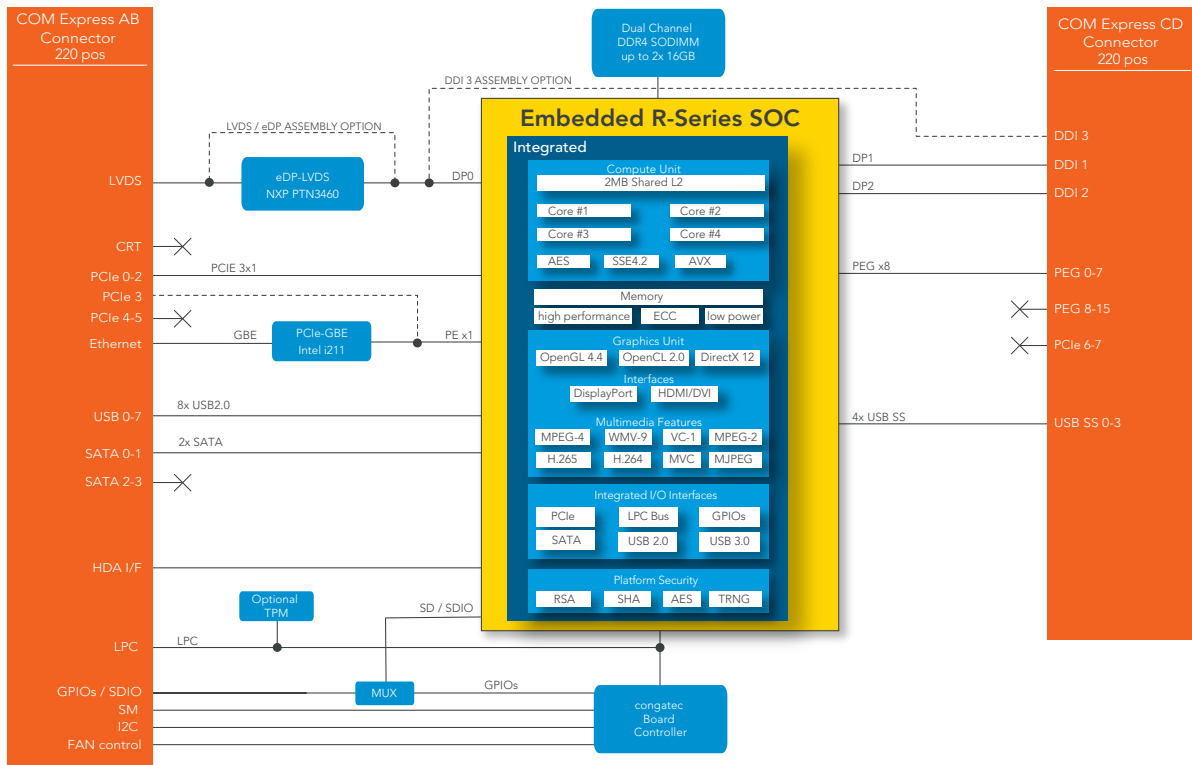


- AMD Embedded R-Series SOC
- Up to 4 "Excavator" Cores
- High performance integrated 3<sup>rd</sup> Gen. GCN graphics with up to 512 stream processors
- Unified Video Decoder (UVD 6) supporting HEVC/H.265 4K@60Hz
- ECC protected DDR4 memory up to 32 GByte
- Full HSA 2.0 compliant (Heterogenous System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

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