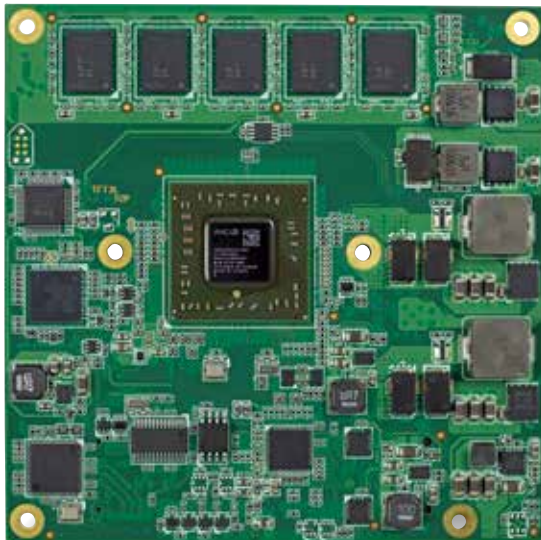


ERROR PROTECTED RAM

conga-TCG

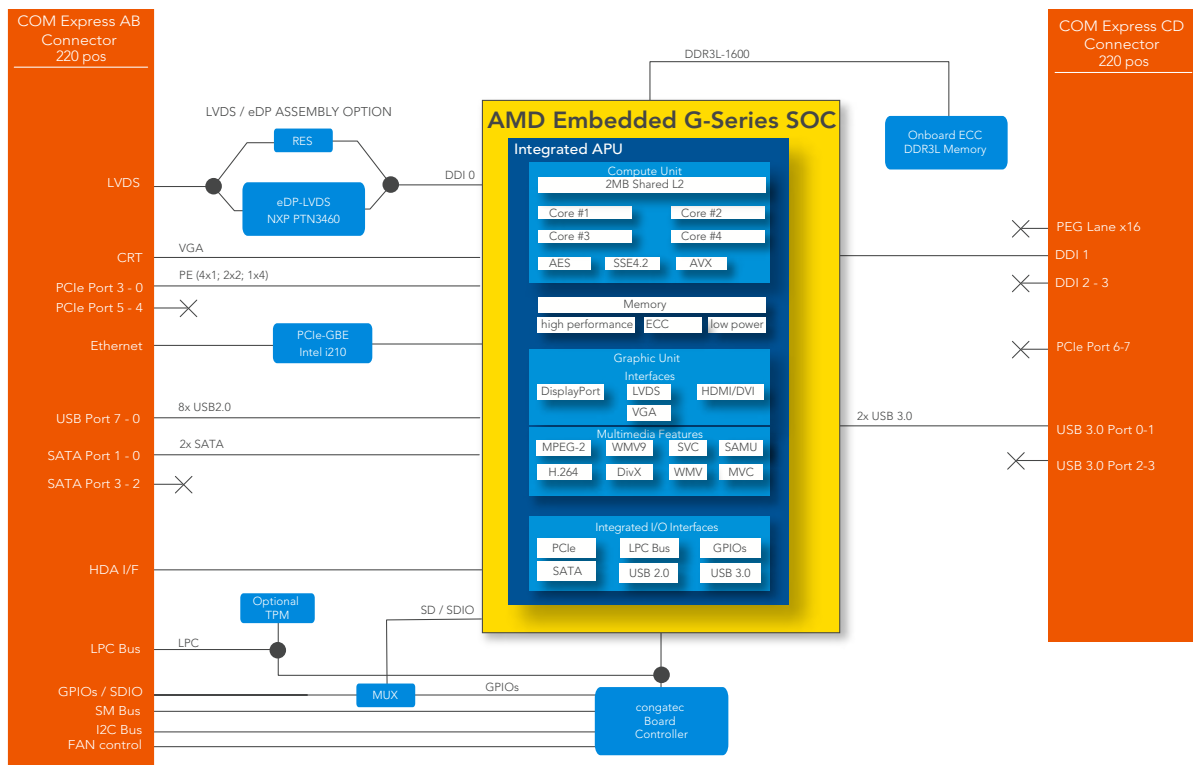


- AMD Embedded G-Series SOC APU
- Power saving „Steppe Eagle“ processors
- ECC protected memory up to 8 GByte
- High performance integrated graphics
- Extended longevity, min. 10 years

COM  **Express®**

Formfactor	COM Express® Compact (95 x 95 mm) Type 6 Connector Layout			
CPU	AMD Embedded G-Series SOC AMD Embedded GX-420CA 2.0 GHz Quad Core L2 cache 2MB shared 25W TDP AMD Embedded GX-415GA 1.5 GHz Quad Core L2 cache 2MB shared 15W TDP AMD Embedded GX-217GA 1.65 GHz Dual Core L2 cache 1MB shared 15W TDP AMD Embedded GX-209HA* 1.0 GHz Dual Core L2 cache 1MB shared 9W TDP AMD Embedded GX-210HA 1.0 GHz Dual Core L2 cache 1MB shared 9W TDP AMD Embedded GX-424CC 2.4 GHz Quad Core L2 cache 2MB shared 25W TDP AMD Embedded GX-411GA* 1.1 GHz Quad Core L2 cache 2MB shared 15W TDP AMD Embedded GX-412HC 1.2 GHz 1.6 GHz (Boost) Quad Core L2 cache 2MB shared 7W TDP AMD Embedded GX-212JC 1.2 GHz 1.4 GHz (Boost) Dual Core L2 cache 1MB shared 6W TDP AMD Embedded GX-222GC 2.2 GHz 2.4 GHz (Boost) Dual Core L2 cache 1MB shared 15W TDP *Industrial Temperature Version			
DRAM	Up to 8 GByte DDR3L-1600 with ECC protection			
Chipset	Integrated in SOC (single-chip)			
Ethernet	Gigabit Ethernet			
I/O Interfaces	4x PCI Express™ 2.0 lanes 2x SATA® 3Gb/s 2x USB 3.0 8x USB 2.0 LPC bus I²C bus (fast mode, 400 kHz, multi-master) SD SPI SM-Bus			
Sound	High Definition Audio Interface			
Graphics	Integrated AMD Radeon™ HD 8000E Graphics supports DirectX 11.1 OpenGL 4.2 and OpenCL™ 1.2; up to two simultaneous displays Unified Video Decoder 4.2 (H.264, MPEG-2, VC-1, MPEG4 and WMV) Video Compression Engine 2.0 (Video conferencing, wireless display, H.264, SVC). Security Asset Management Unit 2.1 (DRM offloaded from CPU, HDCP2) VGA			
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	One DisplayPort 1.2 / HDMI 1.4a			
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 Aptio® UEFI 2.x firmware 8 MByte serial SPI firmware flash			
Security	The conga-TCG 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 3.0 with battery support			
Operating Systems	Microsoft® Windows 8 Microsoft® Windows 7 Linux Microsoft® Windows® 7/8 Embedded Standard Microsoft® Windows® 7 Embedded Compact			
Temperature	Commercial : Operating: 0 to +60°C Storage: -20 to +80°C Industrial : Operating: -40 to +85°C Storage: -45 to +85°C			
Humidity	Operating: 10 - 90% r. H. non cond. Storage: 5 - 95% r. H. non cond.			
Size	95 x 95 mm (3.74" x 3.74")			

conga-TCG | Block diagram



conga-TCG | Order Information

Article	PN	Description
conga-TCG/GX-420CA-2GECC	042000	AMD Embedded G-Series GX-420CA quad core processor with 2.0GHz 2MB L2 cache and 2GB 1600MT/s ECC DDR3L onboard memory. Features AMD Radeon™ HD 8400E Graphics with 600MHz GPU frequency.
conga-TCG/GX-415GA-2GECC	042001	AMD Embedded G-Series GX-415GA quad core processor with 1.5GHz 2MB L2 cache and 2GB 1600MT/s ECC DDR3L onboard memory. Features AMD Radeon™ HD 8330E Graphics with 500MHz GPU frequency.
conga-TCG/GX-217GA-2GECC	042002	AMD Embedded G-Series GX-217GA dual core processor with 1.65GHz 1MB L2 cache and 2GB 1600MT/s ECC DDR3L onboard memory. Features AMD Radeon™ HD 8280E Graphics with 450MHz GPU frequency.
conga-TCG/GX-210HA-2GECC	042003	AMD Embedded G-Series GX-210HA dual core processor with 1.0GHz 1MB L2 cache and 2GB 1333MT/s ECC DDR3L onboard memory. Features AMD Radeon™ HD 8210E Graphics with 300MHz GPU frequency.
conga-TCG/420CA-4GECC	042004	AMD Embedded G-Series GX-420CA quad core processor with 2.0GHz 2MB L2 cache and 4GB 1600MT/s ECC DDR3L onboard memory. Features AMD Radeon™ HD 8400E Graphics with 600MHz GPU frequency.
conga-TCG/i-411GA-2GECC	042010	AMD Embedded G-Series GX-411GA quad core processor with 1.1GHz 2MB L2 cache and 2GB 1600MT/s ECC DDR3L onboard memory. Features AMD Radeon™ HD 8210E Graphics with 300MHz GPU frequency. Industrial grade temperature
conga-TCG/i-209HA-2GECC	042011	AMD Embedded G-Series GX-209HA dual core processor with 1.0GHz 1MB L2 cache and 2GB 1066MT/s ECC DDR3L onboard memory. Features AMD Radeon™ HD 8000E Graphics with 225MHz GPU frequency. Industrial grade temperature
conga-TCG/424CC-4GECC	042020	AMD Embedded G-Series GX-424CC quad core processor with 2.4GHz 25W TDP 2MB L2 cache and 4GB 1600MT/s ECC DDR3L onboard memory. Features AMD Radeon™ HD 8000E Graphics with 497MHz GPU frequency.
conga-TCG/412HC-4GECC	042021	AMD Embedded G-Series GX-412HC quad core processor with 1.2GHz/1.6GHz 7W TDP 2MB L2 cache and 4GB 1333MT/s ECC DDR3L onboard memory. Features AMD Radeon™ HD 8000E Graphics with 300MHz GPU frequency.
conga-TCG/212JC-2GECC	042022	AMD Embedded G-Series GX-212JC dual core processor with 1.2GHz/1.4GHz, 6W TDP, 1MB L2 cache and 2GB 1333MT/s ECC DDR3L onboard memory. Features AMD Radeon™ HD 8000E Graphics with 300MHz GPU frequency.
conga-TCG/222GC-4GECC	042023	AMD Embedded G-Series GX-222GC dual core processor with 2.2 GHz to 2.4 GHz, 10W to 15 W TDP, 1MB L2 cache and 4GB 1600MT/s ECC DDR3L onboard memory. Features AMD Radeon™ HD 8000E Graphics with 655/800 MHz GPU frequency.
conga-TCG/HSP-B	042051	Standard heatspreader for COM Express module conga-TCG. All standoff are 2.7mm bore hole
conga-TCG/HSP-T	042052	Standard heatspreader for COM Express module conga-TCG. All standoff are M2.5 thread.
conga-TCG/CSP-B	042053	Standard passive cooling solution for COM Express module conga-TCG with 20mm overall heat sink height. All standoff are 2.7mm bore hole.
conga-TCG/CSP-T	042054	Standard passive cooling solution for COM Express module conga-TCG with 20mm overall heat sink height. All standoff are M2.5mm thread.
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-board-Socket-5	400007	Connector for COM-Express carrier boards height 5mm packing unit 4 pieces
COM-Express-carrier-board-Socket-8	400004	Connector for COM-Express carrier boards height 8mm packing unit 4 pieces

© 2015 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. August 26, 2015 KS