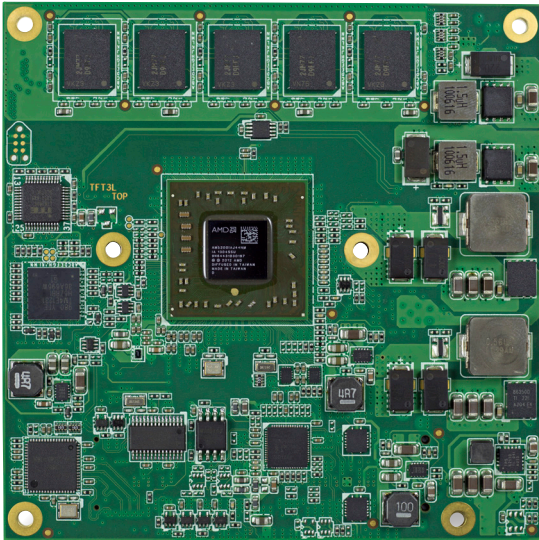


# ERROR PROTECTED RAM

## conga-TCG

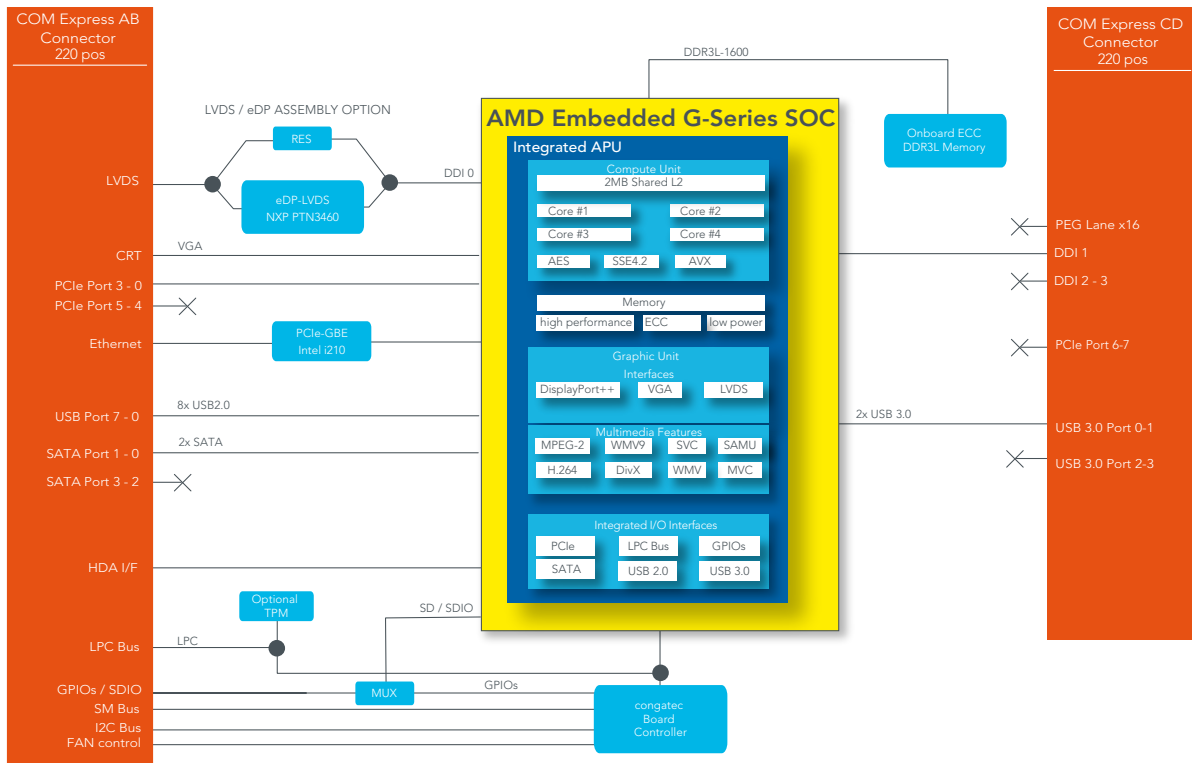


- AMD Embedded G-Series SOC APU
- Power saving „Steppe Eagle“ processors
- ECC protected memory up to 8 GByte
- High performance integrated graphics
- Extended longevity, min. 10 years

**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
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	1x DDI			
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 10   Microsoft® Windows 10 IoT Enterprise   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 standoffs are 2.7mm bore hole
conga-TCG/HSP-T	042052	Standard heatspreader for COM Express module conga-TCG. All standoffs 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 standoffs 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 standoffs are M2.5mm thread.
<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