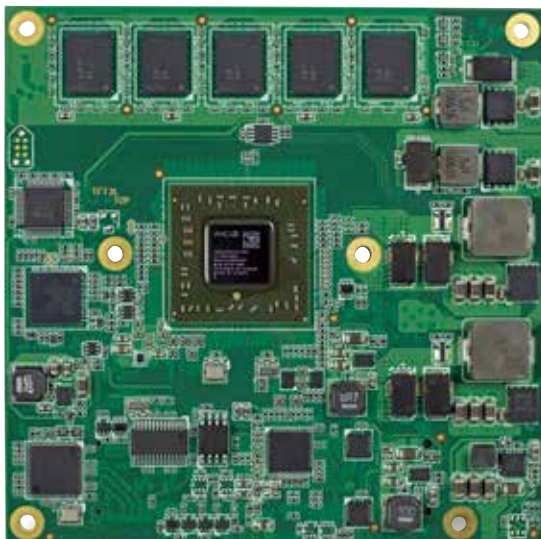


ERROR PROTECTED RAM

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 | <p>AMD Embedded G-Series SOC</p> <table border="1"> <thead> <tr> <th>Model</th> <th>Frequency</th> <th>Core</th> <th>L2 cache</th> <th>TDP</th> </tr> </thead> <tbody> <tr> <td>AMD Embedded GX-420CA</td> <td>2.0 GHz</td> <td>Quad Core</td> <td>L2 cache 2MB shared</td> <td>25W TDP</td> </tr> <tr> <td>AMD Embedded GX-415GA</td> <td>1.5 GHz</td> <td>Quad Core</td> <td>L2 cache 2MB shared</td> <td>15W TDP</td> </tr> <tr> <td>AMD Embedded GX-217GA</td> <td>1.65 GHz</td> <td>Dual Core</td> <td>L2 cache 1MB shared</td> <td>15W TDP</td> </tr> <tr> <td>AMD Embedded GX-209HA*</td> <td>1.0 GHz</td> <td>Dual Core</td> <td>L2 cache 1MB shared</td> <td>9W TDP</td> </tr> <tr> <td>AMD Embedded GX-210HA</td> <td>1.0 GHz</td> <td>Dual Core</td> <td>L2 cache 1MB shared</td> <td>9W TDP</td> </tr> <tr> <td>AMD Embedded GX-424CC</td> <td>2.4 GHz</td> <td>Quad Core</td> <td>L2 cache 2MB shared</td> <td>25W TDP</td> </tr> <tr> <td>AMD Embedded GX-411GA*</td> <td>1.1 GHz</td> <td>Quad Core</td> <td>L2 cache 2MB shared</td> <td>15W TDP</td> </tr> <tr> <td>AMD Embedded GX-412HC</td> <td>1.2 GHz 1.6 GHz (Boost)</td> <td>Quad Core</td> <td>L2 cache 2MB shared</td> <td>7W TDP</td> </tr> <tr> <td>AMD Embedded GX-212JC</td> <td>1.2 GHz 1.4 GHz (Boost)</td> <td>Dual Core</td> <td>L2 cache 1MB shared</td> <td>6W TDP</td> </tr> <tr> <td>AMD Embedded GX-222GC</td> <td>2.2 GHz 2.4 GHz (Boost)</td> <td>Dual Core</td> <td>L2 cache 1MB shared</td> <td>15W TDP</td> </tr> </tbody> </table> <p>*Industrial Temperature Version</p> | | | | Model | Frequency | Core | L2 cache | TDP | 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 |
| Model | Frequency | Core | L2 cache | TDP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 I ² C 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 I ² C 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 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. |
| 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 |

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Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

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- Оперативные сроки поставки под заказ (от 5 рабочих дней);
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- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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