

# EMBEDDED COM EXPRESS® TYPE 6

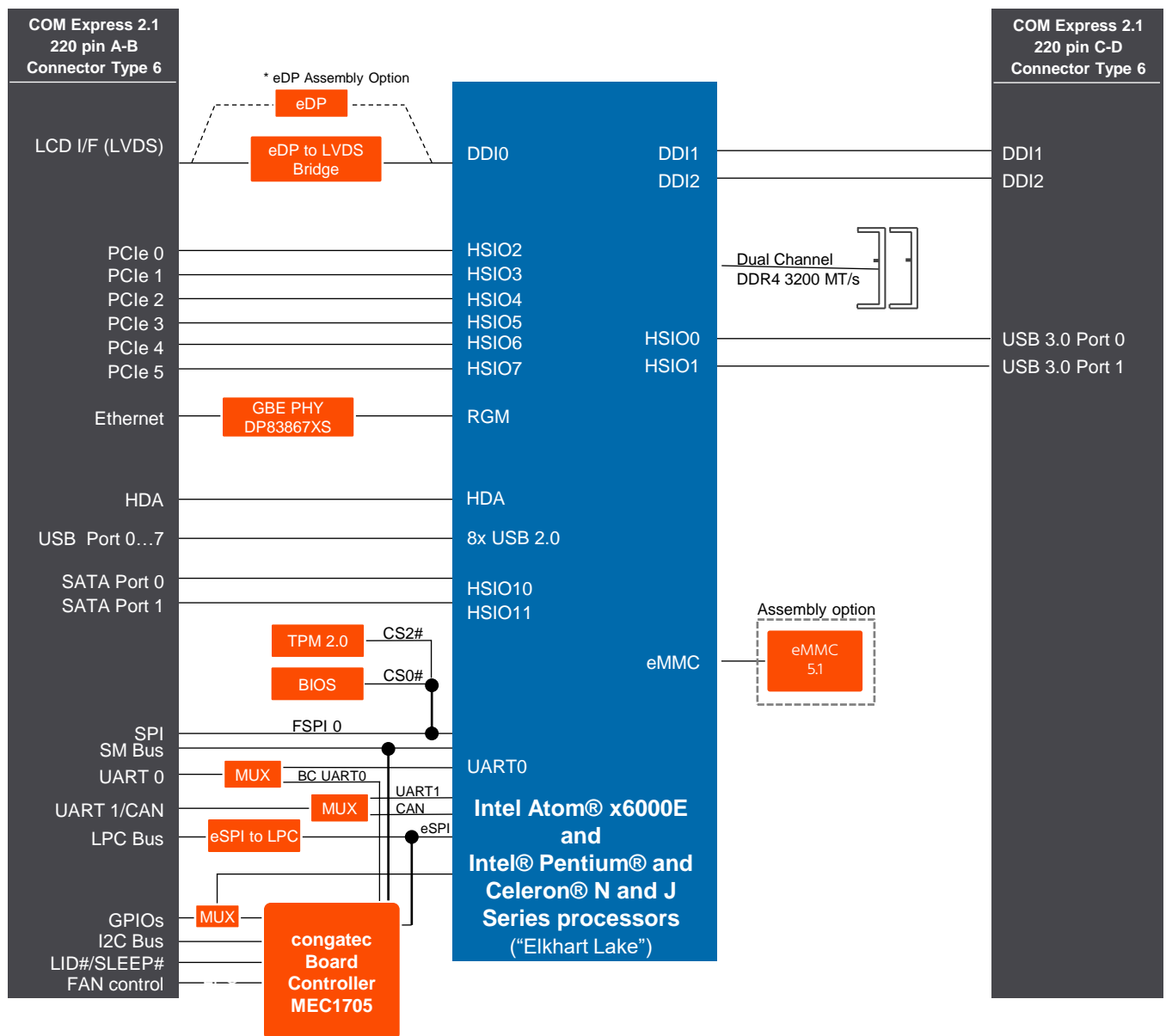
## conga-TCA7



- COM Express Type 6 Compact based on Intel Atom® x6000E Series and Intel® Pentium® and Celeron® J and N Series processors
- High performance Intel® UHD Graphics for 10<sup>th</sup> Gen Intel® Processors
- Up to 3.200 MT/s DDR4 SODIMM Memory Support
- Options for Time Sensitive Networking and Time Coordinated Computing for improved Realtime Capability
- Options for Industrial Temperature Range -40°C to 85°C

| Form Factor               | COM Express® Compact   Type 6   (95 x 95 mm)   |     |  |                   |  |                     |
|---------------------------|--|-----|--|-------------------|--|---------------------|
| CPU                       | Processor  | TDP | Cores/Threads                                      | Base Frequ./Turbo | Gen 11 Gfx                                       | Intel Use Condition |
|                           | J6413  | 10W | 4 / 4  | 1.8 GHz / 3.0 GHz | 16 EU  | PC Client           |
|                           | J6426  | 10W | 4 / 4  | 2.0 GHz / 3.0 GHz | 32 EU  | PC Client           |
|                           | x6211E   | 6W  | 2 / 2  | 1.3 GHz / 3.0 GHz | 16 EU  | Embedded            |
|                           | x6413E   | 9W  | 4 / 4  | 1.5 GHz / 3.0 GHz | 16 EU  | Embedded            |
|                           | x6425E   | 12W | 4 / 4  | 2.0 GHz / 3.0 GHz | 32 EU  | Embedded            |
|                           | x6212RE  | 6W  | 2 / 2  | 1.2 GHz / ---     | 16 EU  | Industrial          |
|                           | x6414RE  | 9W  | 4 / 4  | 1.5 GHz / ---     | 16 EU  | Industrial          |
|                           | x6425RE  | 12W | 4 / 4  | 1.9 GHz / ---     | 32 EU  | Industrial          |
| DRAM                      | Support for 2x SO DIMM on socket (dual channel DDR4 3.200 MT/s)   max. 32 GB RAM system capacity   |     |  |                   |  |                     |
| Ethernet                  | Intel® GbE with TSN support   real-time trigger  |     |  |                   |  |                     |
| I/O Interfaces            | Up to 6x PCIe Gen3   2x USB 3.1 Gen2   up to 8x USB 2.0   2x SATA III   2x UART (UART1 muxed with CAN)   GPIO   I²C Bus   SMBus   SPI   LPC  |     |  |                   |  |                     |
| Mass Storage              | Option for onboard eMMC 5.1 flash up to 128 Gbyte  |     |  |                   |  |                     |
| Audio                     | Intel® HD Audio  |     |  |                   |  |                     |
| Graphics                  | Intel® UHD Graphics  |     |  |                   |  |                     |
| LVDS                      | Dual channel 18/24-bit LVDS interface up to 1920x1200@60Hz   shared with eDP up to 3840x2160@60Hz (option)   |     |  |                   |  |                     |
| Digital Display Interface | 2x DisplayPort 1.4 4096x2160@60Hz  |     |  |                   |  |                     |
| congatec Board controller | Multistage watchdog   non-volatile user data storage   manufacturing and board Information   board statistics   fast mode and multi-master I²C bus   power loss control                      |     |  |                   |  |                     |
| Embedded BIOS Feature     | AMI Aptio® UEFI firmware   32 MByte serial SPI with congatec Embedded BIOS features   OEM Logo   OEM CMOS Defaults   LCD Control   Display Auto Detection   Backlight Control   Flash Update |     |  |                   |  |                     |
| Power Management          | ACPI 5.0 compliant   Smart Battery Management  |     |  |                   |  |                     |
| Operating Systems         | Microsoft® Windows 11 IoT Enterprise   Microsoft® Windows 10   Microsoft® Windows 10 IoT Enterprise   Linux   Yocto  |     |  |                   |  |                     |
| Hypervisor                | RTS Real-Time Hypervisor   |     |  |                   |  |                     |
| Power Consumption         | Typ. Application: see manual for full details  |     |  |                   |  |                     |
| Temperature Range         | Commercial variants<br>Industrial variants   |     | Operation: 0° to +60°C<br>Operation: -40° to +85°C |                   | Storage: -20° to +80°C<br>Storage: -40° to +85°C |                     |
| Humidity                  | Operation: 10% to 85% r. H. non cond.<br>Storage: 5% to 85% r. H. non cond.  |     |  |                   |  |                     |
| Size                      | 95 x 95 mm (approx. 3.74" x 3.74")   |     |  |                   |  |                     |

# conga-TCA7 | Block Diagram



**Note:** Assembly options on request only

| Article              | PN     | Description  |
|----------------------|--------|--|
| conga-TCA7/x6425E    | 049300 | COM Express Compact module with Intel Atom® x6425E quad core processor with 2.0GHz core frequency up to 3.0GHz, 1.5MB cache and up to 32GB 3200MT/s DDR4 SODIMM memory support   |
| conga-TCA7/x6413E    | 049301 | COM Express Compact module with Intel Atom® x6413E quad core processor with 1.5GHz core frequency up to 3.0GHz, 1.5MB cache and up to 32GB 3200MT/s DDR4 SODIMM memory support   |
| conga-TCA7/x6211E    | 049302 | COM Express Compact module with Intel Atom® x6211E dual core processor with 1.3GHz core frequency up to 3.0GHz, 1.5MB cache and up to 32GB 3200MT/s DDR4 SODIMM memory support   |
| conga-TCA7/i-x6425RE | 049310 | COM Express Compact module with Intel Atom® x6425RE quad core processor with 1.9GHz core frequency, 1.5MB cache and up to 32GB 3200MT/s DDR4 SODIMM memory support. Industrial grade temperature range from -40°C to 85°C. |
| conga-TCA7/i-x6414RE | 049311 | COM Express Compact module with Intel Atom® x6414RE quad core processor with 1.5GHz core frequency, 1.5MB cache and up to 32GB 3200MT/s DDR4 SODIMM memory support. Industrial grade temperature range from -40°C to 85°C. |
| conga-TCA7/i-x6212RE | 049312 | COM Express Compact module with Intel Atom® x6212RE dual core processor with 1.2GHz core frequency, 1.5MB cache and up to 32GB 3200MT/s DDR4 SODIMM memory support. Industrial grade temperature range from -40°C to 85°C. |
| conga-TCA7/J6426     | 049320 | COM Express Compact module with Intel® Pentium® J6426 quad core processor with 2.0GHz core frequency up to 3.0GHz, 1.5MB cache and up to 32GB 3200MT/s DDR4 SODIMM memory support.   |
| conga-TCA7/J6413     | 049321 | COM Express Compact module with Intel® Celeron® J6413 quad core processor with 1.8GHz core frequency up to 3.0GHz, 1.5MB cache and up to 32GB 3200MT/s DDR4 SODIMM memory support  |
| conga-TCA7/i-HSP-B   | 049350 | Standard heatspreader for COM Express Compact module conga-TCA7 with lidded Intel Atom x6000E processors. All standoffs are with 2.7mm bore hole.  |
| conga-TCA7/i-HSP-T   | 049351 | Standard heatspreader for COM Express Compact module conga-TCA7 with lidded Intel Atom x6000E processors. All standoffs are M2.5mm thread.   |
| conga-TCA7/i-CSP-B   | 049352 | Passive cooling solution for COM Express Compact module conga-TCA7 with lidded Intel Atom x6000E processors. All standoffs are with 2.7mm bore hole.   |
| conga-TCA7/i-CSP-T   | 049353 | Passive cooling solution for COM Express Compact module conga-TCA7 with lidded Intel Atom x6000E processors. All standoffs are M2.5mm thread.  |
| conga-TCA7/HSP-B     | 049354 | Standard heatspreader for COM Express Compact module conga-TCA7 with open silicon Intel Pentium/Celeron J and N processors. All standoffs are with 2.7mm bore hole.  |
| conga-TCA7/HSP-T     | 049355 | Standard heatspreader for COM Express Compact module conga-TCA7 with open silicon Intel Pentium/Celeron J and N processors. All standoffs are M2.5mm thread.   |
| conga-TCA7/CSP-B     | 049356 | Passive cooling solution for COM Express Compact module conga-TCA7 with open silicon Intel Pentium/Celeron J and N processors. All standoffs are with 2.7mm bore hole.   |
| conga-TCA7/CSP-T     | 049357 | Passive cooling solution for COM Express Compact module conga-TCA7 with open silicon Intel Pentium/Celeron J and N processors. All standoffs are M2.5mm thread.  |

| Article                          | PN     | Description   |
|----------------------------------|--------|---|
| DDR4-SODIMM-3200 (4GB)           | 068793 | DDR4 SODIMM memory module with up to 3200 MT/s and 4GB RAM, commercial temp 0°C to +60°C    |
| DDR4-SODIMM-3200 (8GB)           | 068794 | DDR4 SODIMM memory module with up to 3200 MT/s and 8GB RAM, commercial temp 0°C to +60°C    |
| DDR4-SODIMM-3200 (16GB)          | 068798 | DDR4 SODIMM memory module with up to 3200 MT/s and 16GB RAM, commercial temp 0°C to +60°C   |
| DDR4-SODIMM-3200 (4GB) / i-temp  | 068825 | DDR4 SODIMM memory module with up to 3200 MT/s and 4GB RAM, industrial temp -40°C to +85°C  |
| DDR4-SODIMM-3200 (8GB) / i-temp  | 068826 | DDR4 SODIMM memory module with up to 3200 MT/s and 8GB RAM, industrial temp -40°C to +85°C  |
| DDR4-SODIMM-3200 (16GB) / i-temp | 068827 | DDR4 SODIMM memory module with up to 3200 MT/s and 16GB RAM, industrial temp -40°C to +85°C |
| DDR4-SODIMM-3200 (32GB) / i-temp | 068837 | DDR4 SODIMM memory module with up to 3200 MT/s and 32GB RAM, industrial temp -40°C to +85°C |

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