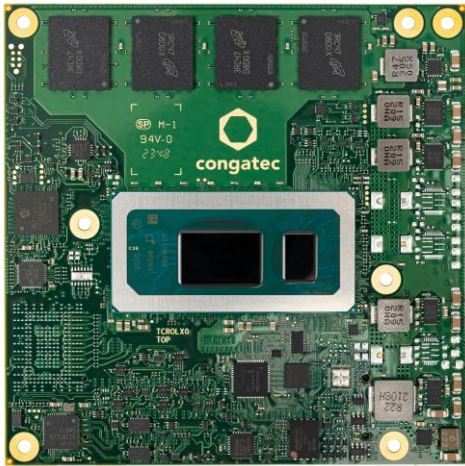


# 13<sup>th</sup> Gen Intel® Core™ Embedded mobile Processors

## conga-TC675r



**COM Express®**

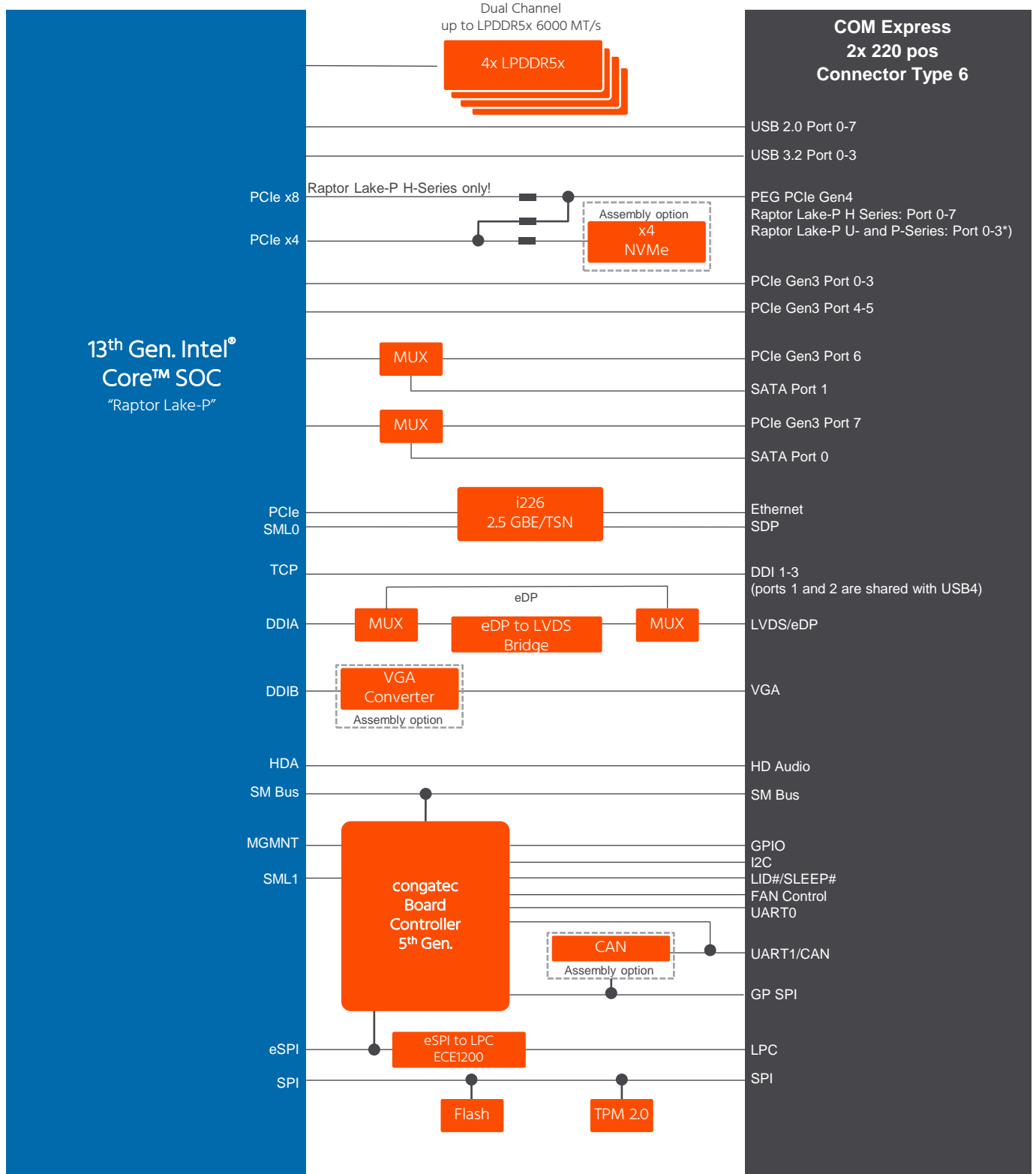


**VIRTUALIZATION READY**

- Intel® hybrid design combines Performance-cores with Efficient-cores
- Soldered LPDDR5x with up to 6000 MT/s
- PCI Express Gen 4 | up to USB 4
- Options for Industrial Temperature Range -40°C to +85°C

|                                  |  |                                   |
|----------------------------------|--|-----------------------------------|
| <b>Form factor</b>               | COM Express® Compact   Type 6 connector pinout   |                                   |
| <b>CPUs</b>                      | Intel® Core™ 13 <sup>th</sup> Gen Processors Raptor Lake-P (H-Series, P-Series, U-Series)  |                                   |
| <b>DRAM</b>                      | Up to 32 GB (optional 64GB) LPDDR5x with up to 6000 MT/s SDRAM   memory down   dual channel   IB ECC   |                                   |
| <b>Mass Storage</b>              | NVMe x4 SSD (optional)   |                                   |
| <b>Graphics</b>                  | Intel® UHD Graphics or Intel® Iris® Xe Graphics architecture   up to 96 EUs  |                                   |
| <b>Display</b>                   | Up to 3x DDI (2x shared with USB4)   LVDS or eDP   VGA (optional)  |                                   |
| <b>Ethernet</b>                  | 2.5 GbE with TSN support via Intel® i226 Ethernet controller series  |                                   |
| <b>I/O Interfaces</b>            | Up to 8 PCIe Gen4 PEG (H-Series) or up to 4 PCIe Gen4 PEG (P- and U-Series)   up to 8 PCIe Gen3   up to 2x USB4   4x USB 3.2 Gen2 (incl. USB 2.0) + 4x USB 2.0   up to 2x SATA   up to 2x UART   CAN (opt.)   8x GPIOs   GP SPI   LPC   SM Bus   I2C |                                   |
| <b>Audio</b>                     | HDA  |                                   |
| <b>congatec Board controller</b> | Multi-Stage Watchdog   non-volatile User Data Storage   Manufacturing and Board Information   Board Statistics I <sup>2</sup> C bus (fast mode, 400 kHz, multi-master)   Power Loss Control   Hardware Health Monitoring   POST Code Redirection     |                                   |
| <b>Embedded BIOS Feature</b>     | AMI Aptio® UEFI firmware   32 Mbyte serial SPI with congatec Embedded BIOS feature   OEM Logo   OEM CMOS default settings   LCD Control   Display Auto Detection   Backlight Control   Flash Update  |                                   |
| <b>Security</b>                  | Trusted Platform Module (TPM 2.0)  |                                   |
| <b>Power Management</b>          | ACPI 5.0a with battery support   |                                   |
| <b>Operating Systems</b>         | Microsoft® Windows 11   Microsoft® Windows 11 IoT Enterprise   Microsoft® Windows 10   Microsoft® Windows 10 IoT Enterprise   Linux   Yocto  |                                   |
| <b>Hypervisor</b>                | RTS Real-Time Hypervisor   |                                   |
| <b>Temperature Range</b>         | Operation -40°C to 85°C  | Storage -40°C to 85°C             |
| <b>Humidity</b>                  | Operation 10% to 90% r. H. non cond.   | Storage 5% to 95% r. H. non cond. |
| <b>Size</b>                      | 95 x 95 mm   |                                   |

# conga-TC675r | Block Diagram



\*) If Assembly option for NVMe is used there is no PCIe support on PEG Port

# conga-TC675r | Modules Order Information

| Article                      | PN     | Description   |
|------------------------------|--------|---|
| conga-TC675r/i7-13800HRE-32G | 045330 | COM Express Type 6 Compact module based on Intel® Core™ i7-13800HRE processor with 6 P-cores 2.5GHz up to 5.0GHz Turbo and 8 E-cores 1.8GHz up to 4.0GHz Turbo   24MB Intel® Smart Cache   Intel® Iris® X <sup>e</sup> Graphics architecture with 96 EUs   32 GByte dual channel LPDDR5x memory down   Industrial grade temperature range from -40°C to +85°C   Intel® code name Raptor Lake-P (H-Series) |
| conga-TC675r/i7-1370PRE-16G  | 045331 | COM Express Type 6 Compact module based on Intel® Core™ i7-1370PRE processor with 6 P-cores 1.9GHz up to 4.8GHz Turbo and 8 E-cores 1.2GHz up to 3.7GHz Turbo   24MB Intel® Smart Cache   Intel® Iris® X <sup>e</sup> Graphics architecture with 96 EUs   16 GByte dual channel LPDDR5x memory down   Industrial grade temperature range from -40°C to +85°C   Intel® code name Raptor Lake-P (P-Series)  |
| conga-TC675r/i7-1365URE-16G  | 045332 | COM Express Type 6 Compact module based on Intel® Core™ i7-1365URE processor with 2 P-cores 1.7GHz up to 4.9GHz Turbo and 8 E-cores 1.2GHz up to 3.7GHz Turbo   12MB Intel® Smart Cache   Intel® Iris® X <sup>e</sup> Graphics architecture with 96 EUs   16 GByte dual channel LPDDR5x memory down   Industrial grade temperature range from -40°C to +85°C   Intel® code name Raptor Lake-P (U-Series)  |
| conga-TC675r/i5-13600HRE-16G | 045333 | COM Express Type 6 Compact module based on Intel® Core™ i5-13600HRE processor with 4 P-cores 2.7GHz up to 4.8GHz Turbo and 8 E-cores 1.9GHz up to 3.6GHz Turbo   18MB Intel® Smart Cache   Intel® Iris® X <sup>e</sup> Graphics architecture with 80EUs   16 GByte dual channel LPDDR5x memory down   Industrial grade temperature range from -40°C to +85°C   Intel® code name Raptor Lake-P (H-Series)  |
| conga-TC675r/i5-1350PRE-16G  | 045334 | COM Express Type 6 Compact module based on Intel® Core™ i5-1350PRE processor with 4 P-cores 1.8GHz up to 4.6GHz Turbo and 8 E-cores 1.3GHz up to 3.4GHz Turbo   12MB Intel® Smart Cache   Intel® Iris® X <sup>e</sup> Graphics architecture with 80 EUs   16 GByte dual channel LPDDR5x memory down   Industrial grade temperature range from -40°C to +85°C   Intel® code name Raptor Lake-P (P-Series)  |
| conga-TC675r/i3-1320PRE-16G  | 045337 | COM Express Type 6 Compact module based on Intel® Core™ i3-1320PRE processor with 4 P-cores 1.7GHz up to 4.5GHz Turbo and 4 E-cores 1.2GHz up to 3.3GHz Turbo   12MB Intel® Smart Cache   Intel® UHD Graphics with 48EUs   16 GByte dual channel LPDDR5x memory down   Industrial grade temperature range from -40°C to +85°C   Intel® code name Raptor Lake-P (P-Series)                                 |

# conga-TC675r | Accessories Order Information

| Article               | PN     | Description  |
|-----------------------|--------|--|
| conga-TC675/CSA-HP-B  | 049750 | Standard active cooling solution for high performance COM Express module conga-TC675 with integrated heat pipes, 25.5mm height and integrated 12V fan. All standoffs are with 2.7mm bore hole. |
| conga-TC675/CSA-HP-T  | 049751 | Standard active cooling solution for high performance COM Express module conga-TC675 with integrated heat pipes, 25.5mm height and integrated 12V fan. All standoffs are M2.5mm threaded.      |
| conga-TC675/CSP-HP-B  | 049752 | Standard passive cooling solution for high performance COM Express module conga-TC675 with integrated heat pipes, 24.7mm height. All standoffs are with 2.7mm bore hole.                       |
| conga-TC675/CSP-HP-T  | 049753 | Standard passive cooling solution for high performance COM Express module conga-TC675 with integrated heat pipes, 24.7mm height. All standoffs are M2.5mm threaded.                            |
| conga-TC675/HSP-HP-B  | 049754 | Standard heatspreader for high performance COM Express module conga-TC675 with integrated heat pipes, 11mm height. All standoffs are with 2.7mm bore hole.                                     |
| conga-TC675/HSP-HP-T  | 049755 | Standard heatspreader for high performance COM Express module conga-TC675 with integrated heat pipes, 11mm height. All standoffs are M2.5mm threaded.  |
| conga-TEVAL2          | 065810 | Evaluation carrier board for COM Express Type6 rev3.0 modules.   |
| conga-TEVAL3/COMe 3.1 | 065820 | Evaluation carrier board for COM Express Type6 rev3.1 modules.   |