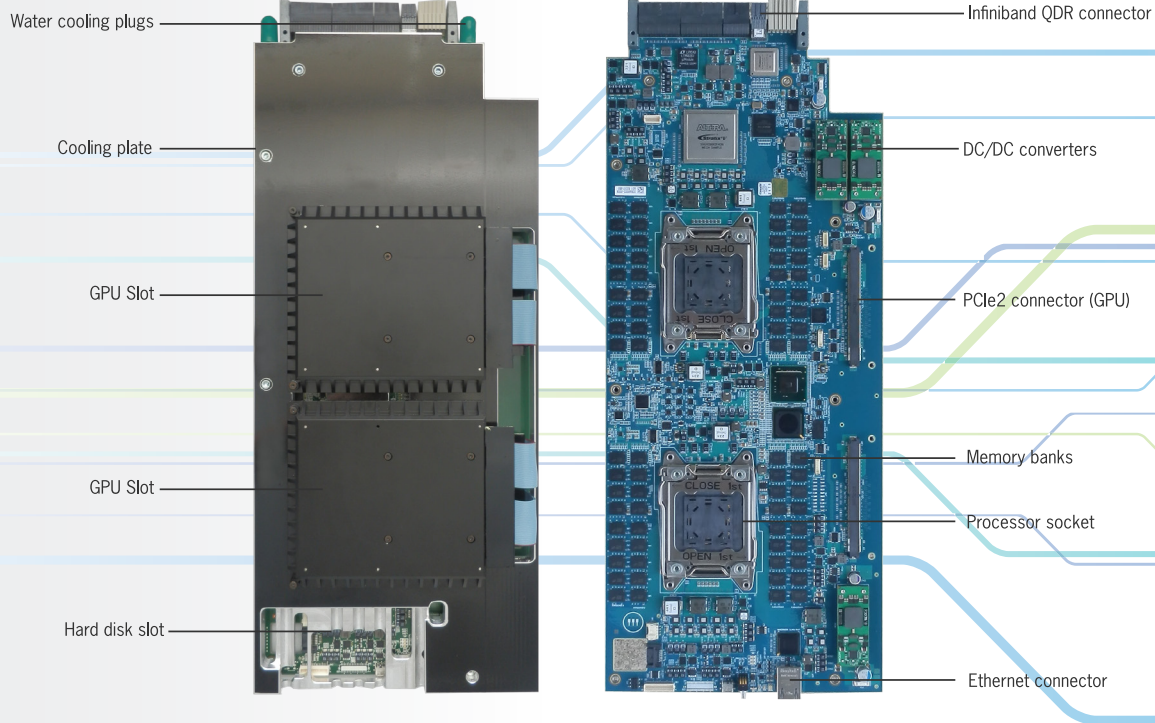


## ACPU-20-xx



### FEATURES

**Supercomputing capabilities** – ACPUs-20-xx boards are used in the Eurotech Aurora Tigon supercomputers, the greenest and most dense machines in the high performance computing market.

**GPU acceleration** – ACPUs-20-xx is able to perform at 3.3 Tflop/s. Up to two Kepler K40s or two Intel Phi's can be populated per blade

**Energy efficient** – ACPUs-20-xx marks a record in energy efficiency with > 3.15 GFlop/s per Watt.

**Reliable** – No moving parts eliminate vibrations. Direct cooling avoids hot spots while the soldered memory provides speed and robustness.

**FPGA** – ACPUs-20-xx is provided with an Altera Stratix FPGA connected with 2 links PCIe3 x8 to the CPUs.

**Optionally water cooled** – Optionally cooled with direct hot liquid cooling that doesn't require air conditioning and ventilation. Pervasive cooling is applied to every component of the board to maximize the cooling effectiveness.

- Extreme performance and high density
- Best in the market for energy efficiency
- Based on Intel® Xeon™
- GPU accelerators (ACPU-20-10)
- Intel Phi accelerators (ACPU20-30)
- Air and water cooling

### Applications

The ACPUs-20-xx is ideal for both data center and embedded usage.

- High performance computing (HPC) Heavy computational loads
- Simulation
- Signal processing
- Rugged HPC

### Cooling

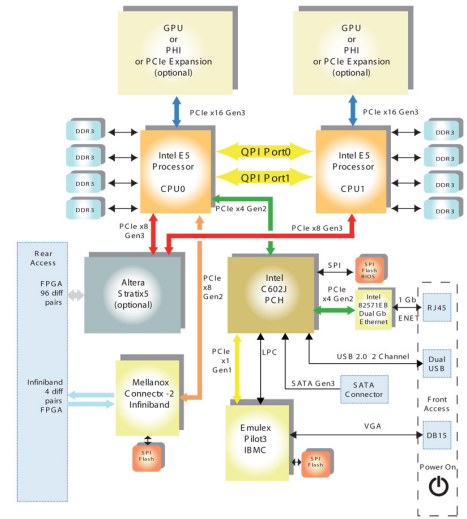
The ACPUs-20-xx board is water cooled to maximize performance, energy efficiency and deployability in demanding environments.

The ACPUs-20-xx can be easily connected to an heat exchanger through Eurotech or third party plumbing.



# ACPU-20-xx

## Specifications



## System Architecture

COMPUTING POWER	3.3 TFlop/s per board (peak)
PROCESSOR	2 x Intel Xeon E5 v2 series per node
ACCELERATORS (GPU or MIC)	2 x Nvidia Kepler Kxx GPU (K20 or K40) per node OR 2 x Intel Xeon Phi 5115D per node
ARCHITECTURE	2 CPUs connected via 8.0GT/s QPI link 2 accelerators connected via PCIe2 to the board 2 x PCIe sockets
MEMORY	Up to 128 GB soldered RAM per node. ECC DDR3 SDRAM 1866 MT/s
FPGA	Stratix V SGXB6
CHIPSET	Intel I/O hub (Patsburg)
INTERFACES	1 x 40 Gbps QDR Infiniband 1 x 1Gbps Ethernet (Intel PXE) 2 x USB host (internal) 1 x standard VGA - Matrox MGA G200 with 8Mb RAM integrated in the BMC Optional: 1+1 3D Torus or 3D mesh BW: up to 240+240Gbps, Latency: ~1us
PCI EXPRESS	2 x PCI Express x 16
SERIAL ATA	1 x 3 Gbps standard connector
BIOS	Insyde H20
LOCAL STORAGE	up to 2 TB 2,5" Sata Disk or up to 512 GB 1,8" microSATA SSD
HW MONITORING AND CONTROL	IPMI - temperature, current (hall effect current sensor) and voltage CAN BUS
OPERATING SYSTEM	Linux, Windows 7, Windows Embedded

## Environmental

DIMENSIONS	W 210mm, D 515 mm, H 16mm With cold plate: W 210mm, D 515 mm, H 36mm
COOLING	Direct Hot Liquid Cooling (external or embedded heat exchanger configuration)
POWER CONSUMPTION	1,390 W peak
POWER SUPPLY	48 V DC input 1 x Local DC/DC 48v DC to 9.6 V DC nominal 2 x Local DC/DC 48v DC to 12 V DC nominal High conversion efficiency: 98%
OPERATING TEMPERATURE	5°C to +60°C

The ACPU-20-xx is available as a board-only solution, and also within a rugged enclosure, with stand-alone or external cooling, providing a ready-to-go solution for embedded high performance applications. It fits into the Bold HPC 50-xx chassis for rack mount.