

Connectivity in MTCA Crates

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DESY

MTCA Core Components: CPU, MCH, PEM
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HELMHOLTZ
ASSOCIATION

CPUs – Adlink AMC-1000



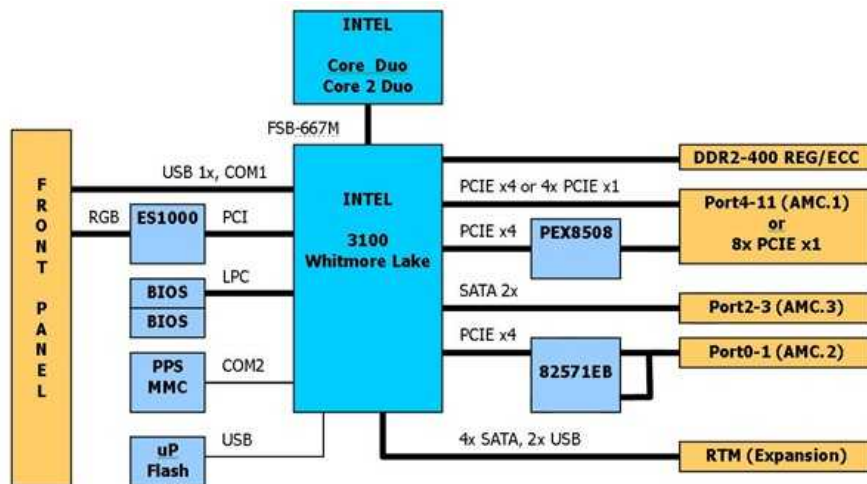
Intel® Core™2 Duo processor

AMC.0 Single-width, Mid-size

Single DDR2-400 200-pin SO-RDIMM Socket, up to 4 GB

PCIe Gen.1

Thermal problems
Availability: **available**



CPU's – Kontron AM5020



Intel® Core™ i7 with 2.0 GHz or 2.53 GHz

up to 8 GB DDR3 1066 MHz

up to 32 GB NAND Flash

4x GbE, 4x SATA, 2x PCIe x4

onboard SATA HDD, onboard SATA Flash

Availability: **available**

CPU – Concurrent

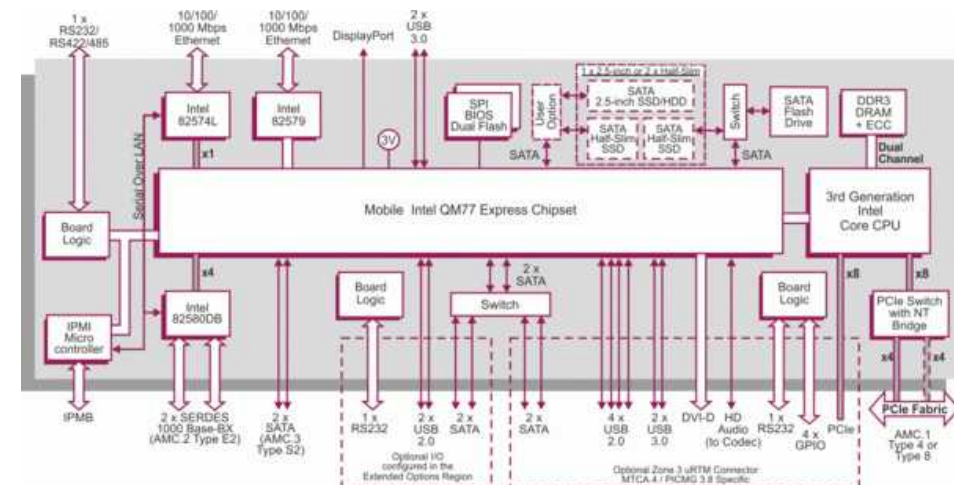
doube-width, full-height or mod-hight,
AMC.0, MTCA.4

Intel core processors
4-core 2.1 GHz i7 **(ONLY full-height)**
2-core 2.5 GHz i7

16 Gbytes of DDR3-1600 DRAM

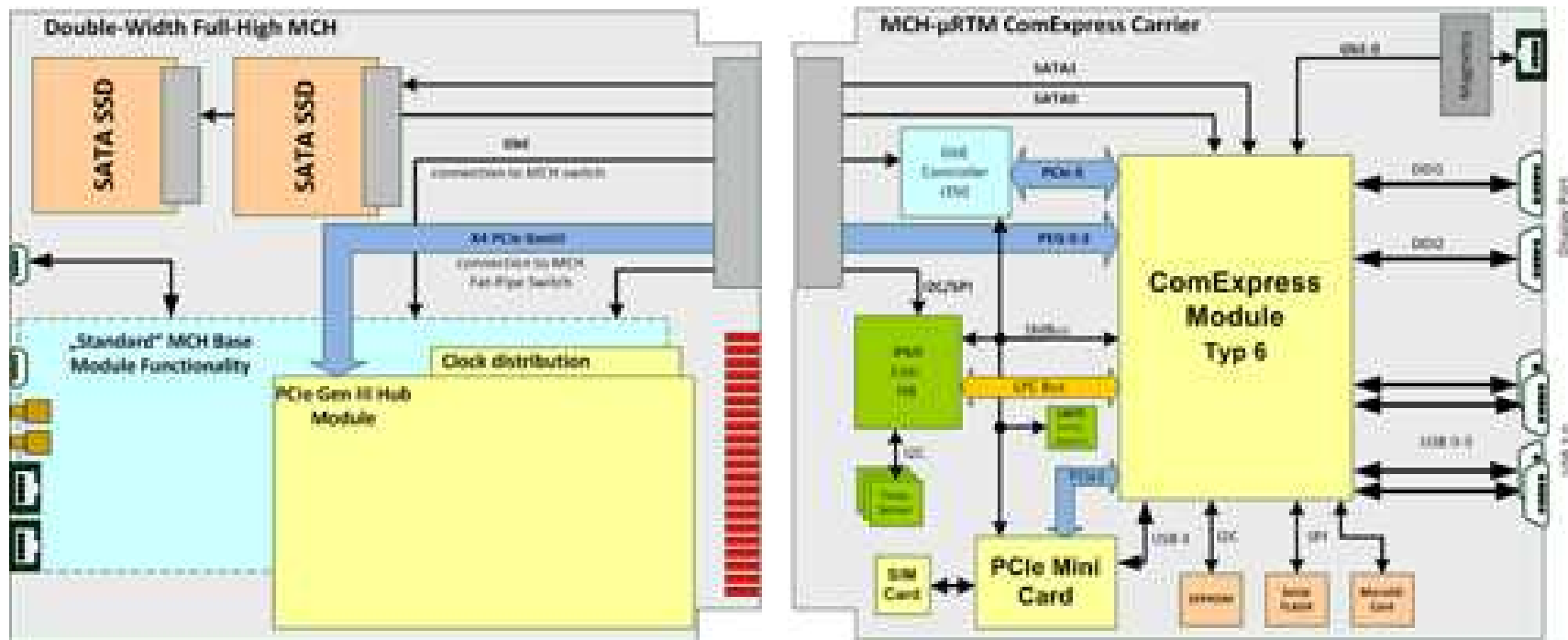
x8 PCIe (Gen.1&2&3)
4 x Gigabit Ethernet interfaces
2xSATA on board (2xhalf-slim SSD)

Availability: available



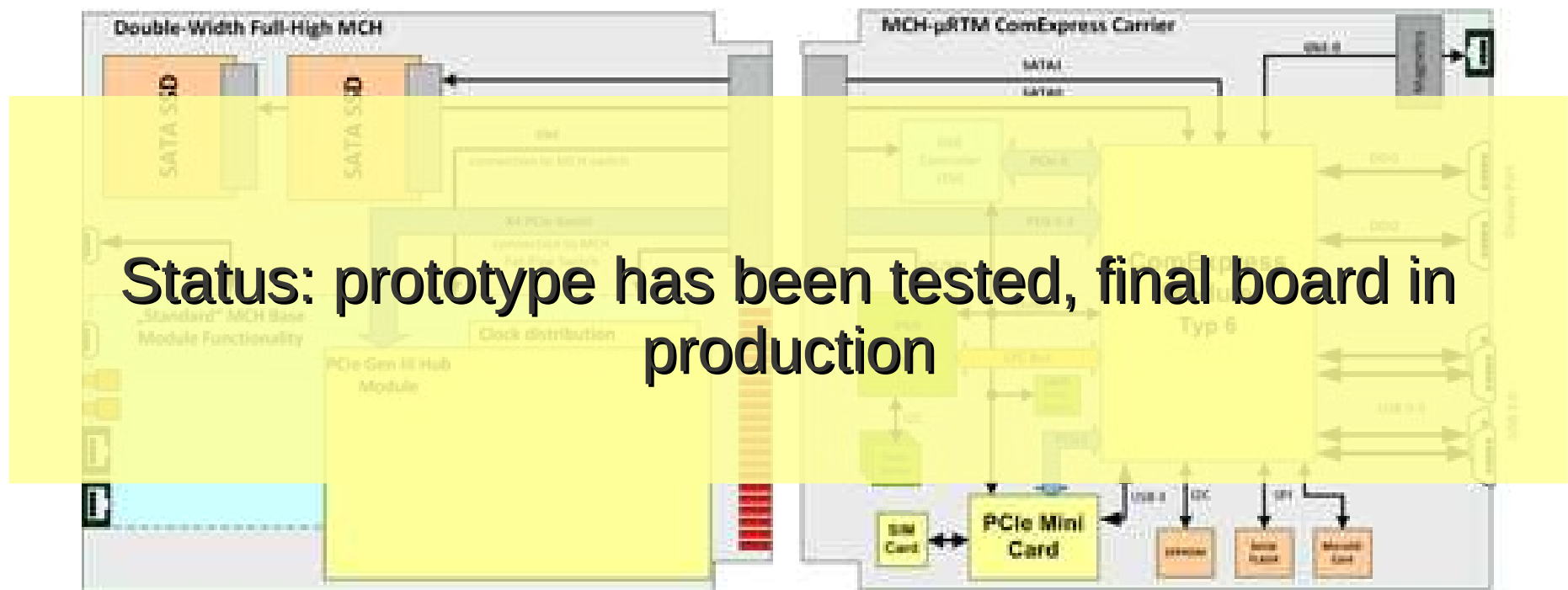
CPU_s – NAT MCH + RTM

NAT-MCH double-width with μ RTM COM Express Carrier
double-width MCH with rear transition modules (μ RTM).
MRTM - COM Express Carrier, type 6 Computer on the module (COM)

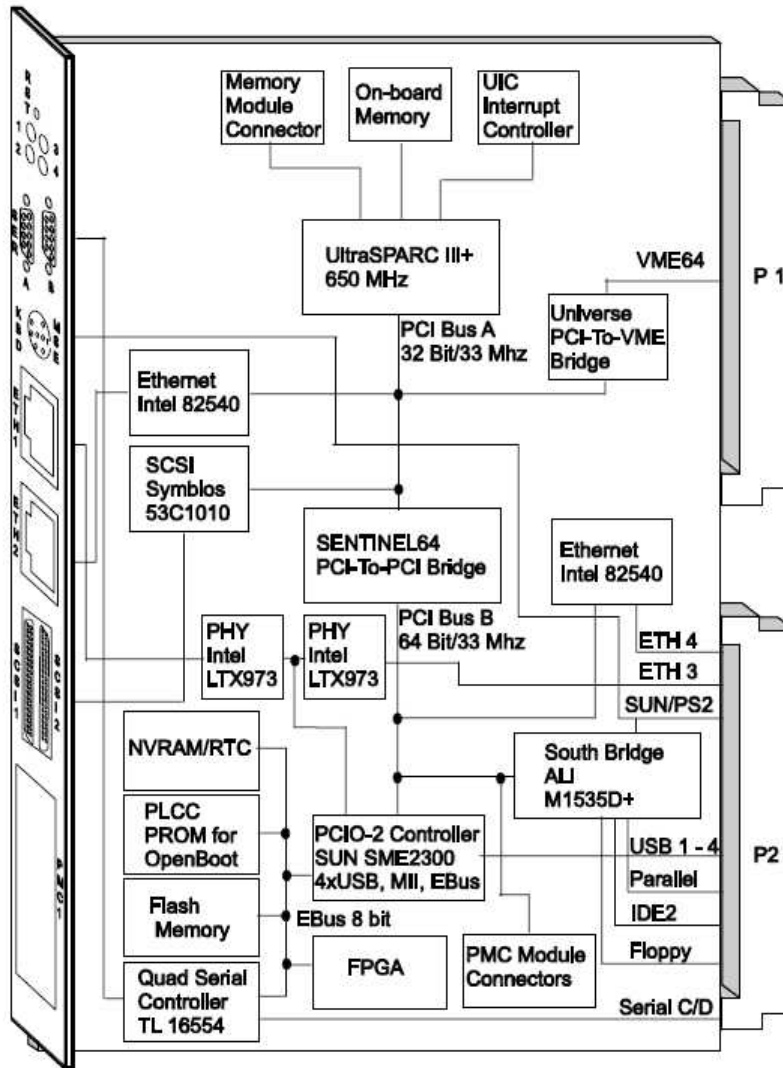


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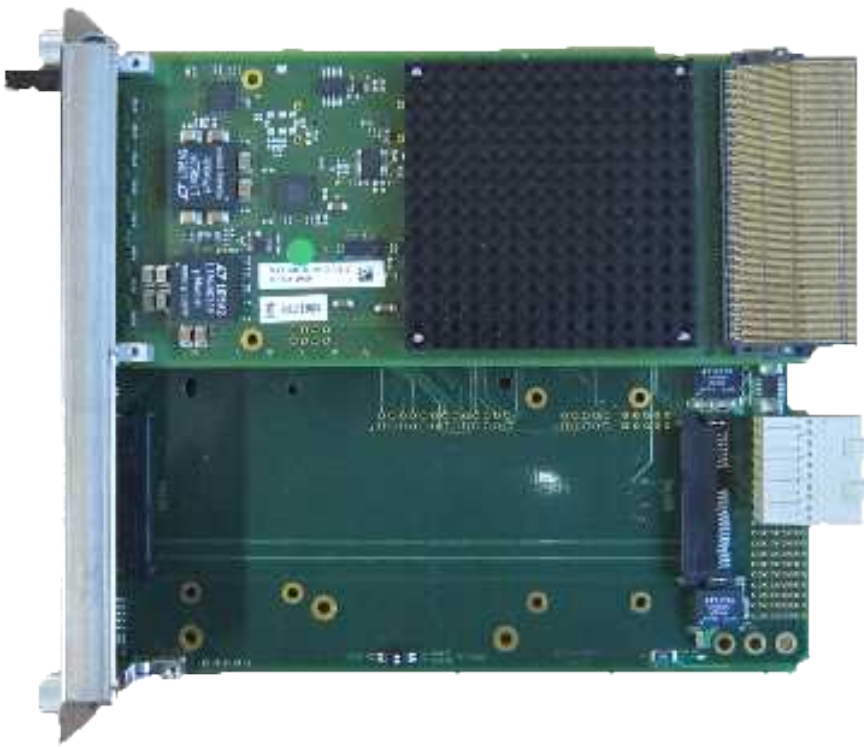
CPU's – VME SPARC CPU56



The UltraSPARC III+ processor is based on the SPARC V9 architecture with VIS instruction set and supports up to 4 GByte of memory. Important features are:

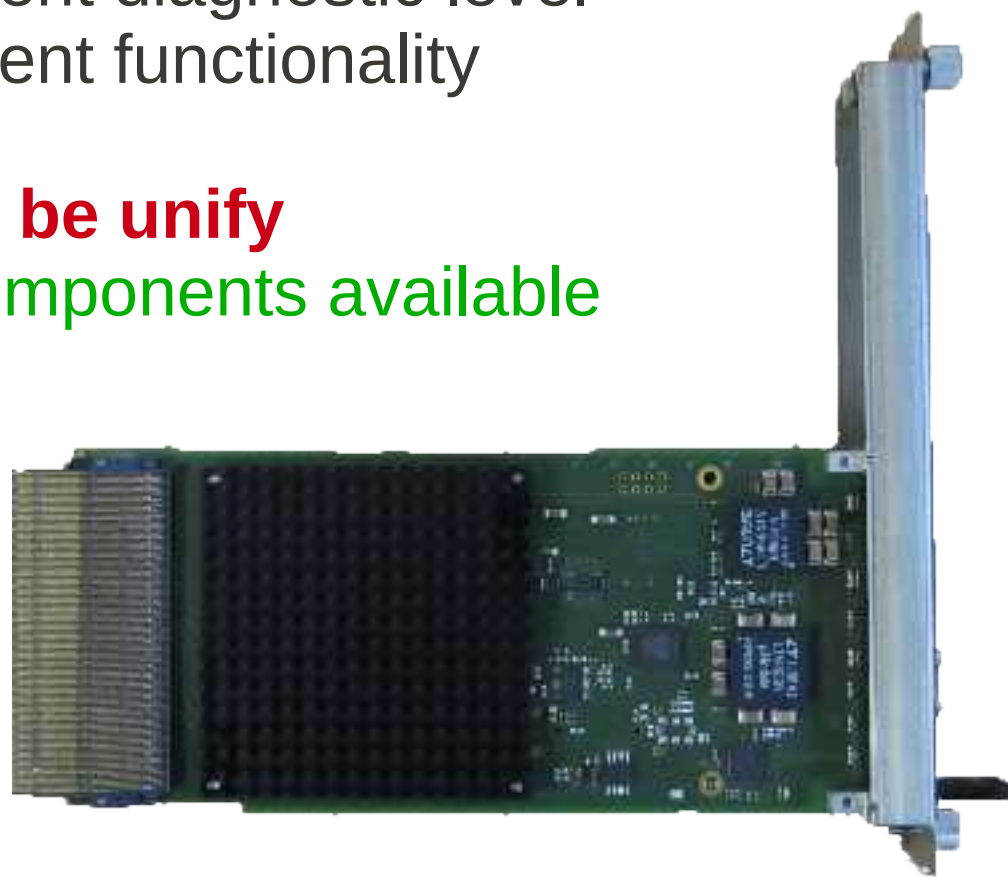
- 650 MHz frequency
- Four-way superscalar processor
- 64-bit data paths
- 64-bit address arithmetic
- 41-bit virtual addressing
- 16 KByte instruction cache
- 16 KByte non-blocking primary data cache
- 512 KByte second level cache
- Sensors for observing CPU on-die temperature

MCHs – NAT



3 (?) different types of MCHs are used:
PCIe Gen.2&3 (1?)
Different diagnostic level
Different functionality

Shall be unify
All components available



PEMs – Telkoor



PS-1136

600 W output power

900-1142-0000

1000 W output power

Input: AC

16 channels of 12 V

Hot swappable N+1 output redundancy

Problems with redundancy

Availability: available

PEMs – Emerson



Compact, high power-density, single-width module: dc-input module is 9 HP high, ac-input module is 12 HP high

600 watts output power

16 output channels

Supports 1+1 input redundancy, N+1 output redundancy, and hot-swap operation

Availability: **available**

PEMs – uBlade

Puma900

Full-Size /Single-Width

Problems with cooling

Availability: not available
Enhanced version will be
available from NAT



PEMs – NAT

NAT-PM-DC780

780 W output power

Input: DC 48V

Hot swappable N+1 output
redundancy

Availability: **available**

AC version available soon ...



PEMs – Vadatech

UTC010

Single-width, full-height module

Dual -36VDC to -75VDC input

792W (available in 396W)

Hot swappable

Support for power module redundancy

Availability: **available**



Thank you for your attention