

Side Card Concept for 3U CompactPCI Intel SBCs

F600 – Legacy I/O

F601 – Multimedia

F602 – PCI Express

F603 – USB/COM

F604 – FireWire

F605 – XMC/PMC

F606 – Gigabit Ethernet

F608 – SATA for RAID

for:

F14 – Pentium M / i915

F15 – Core Duo / i945

F17 – Core 2 Duo / i945

F18 – Core 2 Duo / i965

...

Side Card Concept

The interfaces of a 3U controller board at the front panel are very limited:

- ◆ 2x USB
- ◆ 2x Ethernet
- ◆ 1x VGA

Solution:

⇒ **Increase the front panel**

A second board with an additional front panel realizes further different interfaces

⇒ **The Side Board**

Side Card Concept

A very robust connector can be used to extend the F14 locally

- ◆ High speed Mictor connector
- ◆ Extending all modern serial busses

- ◆ 4 PCI express
- ◆ 6 USB
- ◆ 2 SATA for high performance hard disks
- ◆ 2 SDVO channels (Intel high speed video buses e.g. for DVI)
- ◆ I²C
- ◆ High definition audio

Side board Connector



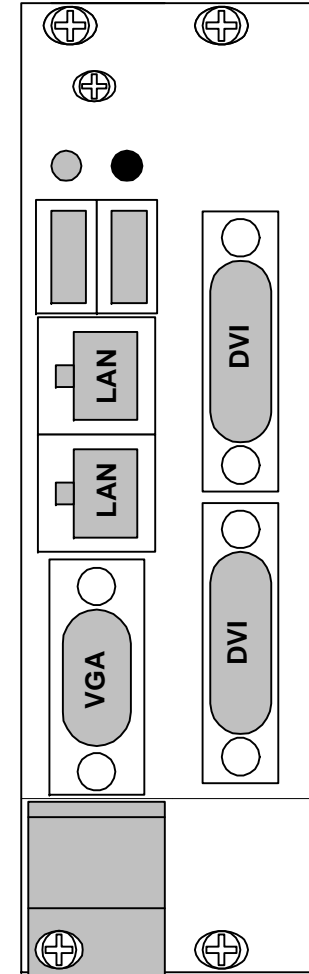
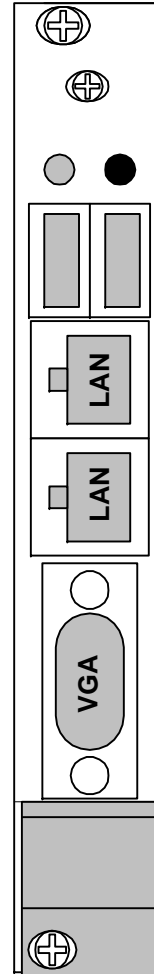
Front Panel - Example

Standard 4HP

- ◆ VGA graphics
- ◆ 2 Ethernet (RJ45)
- ◆ 2 USB 2.0

Side card extensions

- ◆ F600 Legacy I/O
- ◆ F601 Multimedia
- ◆ F602 CompactPCI Express
- ◆ F603 USB/COM
- ◆ F604 FireWire
- ◆ F605 XMC/PMC
- ◆ F606 Gigabit Ethernet
- ◆ F608 SATA for RAID



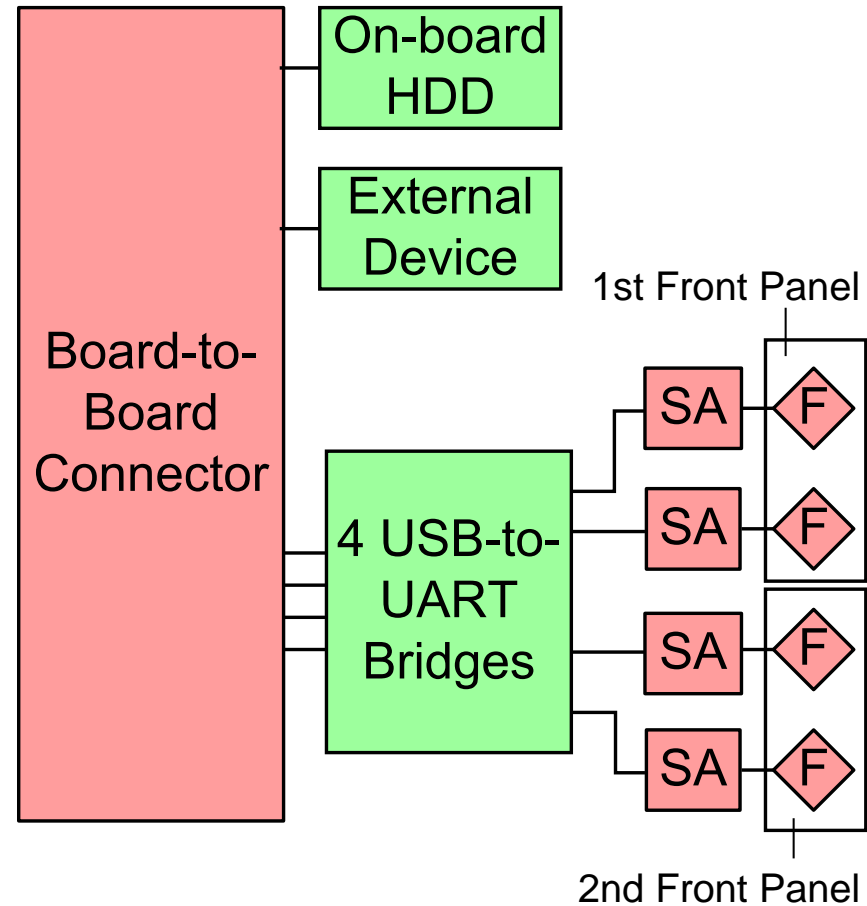
F600 – Legacy I/O

I/O

- ◆ Four UARTs
 - From 4 CPU-controlled USB channels
 - 2 at front, 2 on board, instead of SATA device
 - Via SA-Adapters

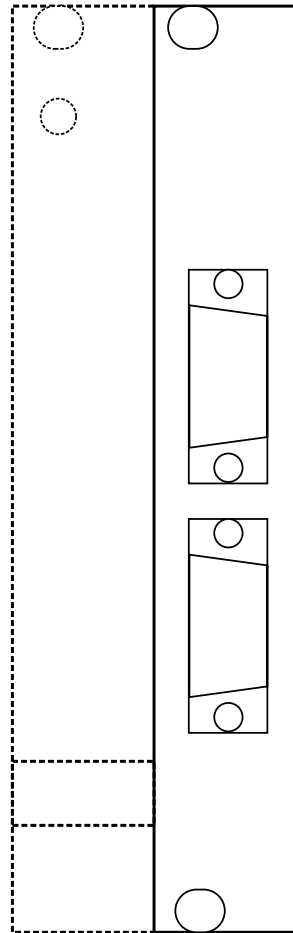
Mass storage

- ◆ Serial IDE (SATA)
 - 1 port for on-board 2.5" hard-disk drive
 - 1 port for external device
 - Transfer rates up to 150MB/s

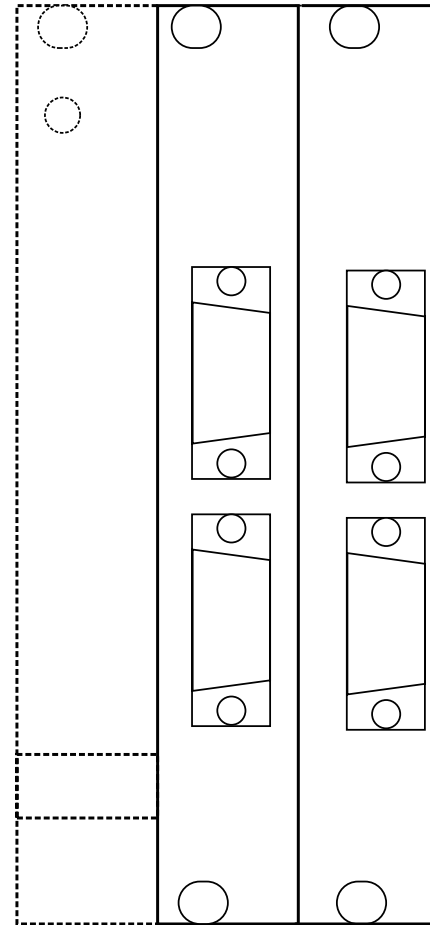


F600 – Front Panel

F600 Standard with 2 COMs



F600 with additional Front Panel



CPU Board



F6

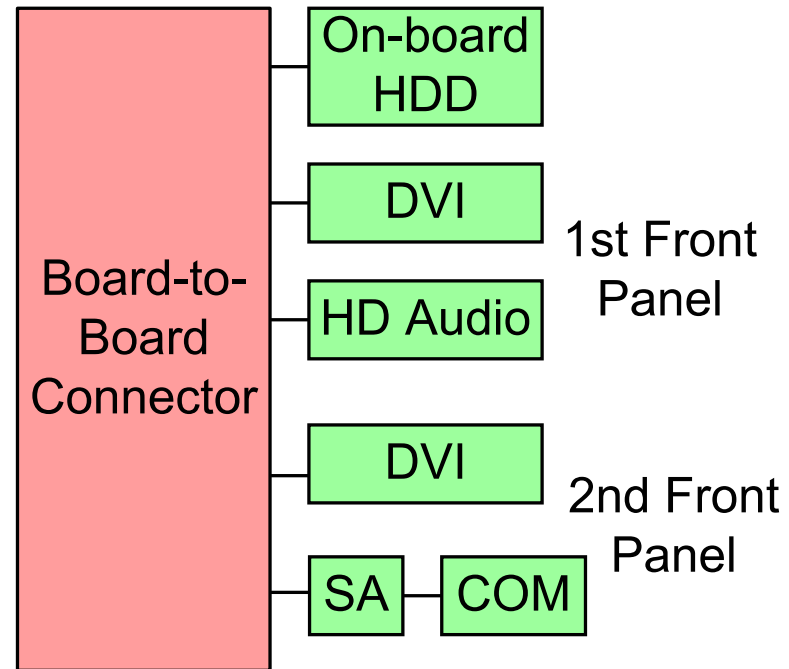
F601 - Multimedia

I/O

- ◆ 2 DVI
- ◆ 1 HD Audio
- ◆ 1 COM (via SA-Adapter)

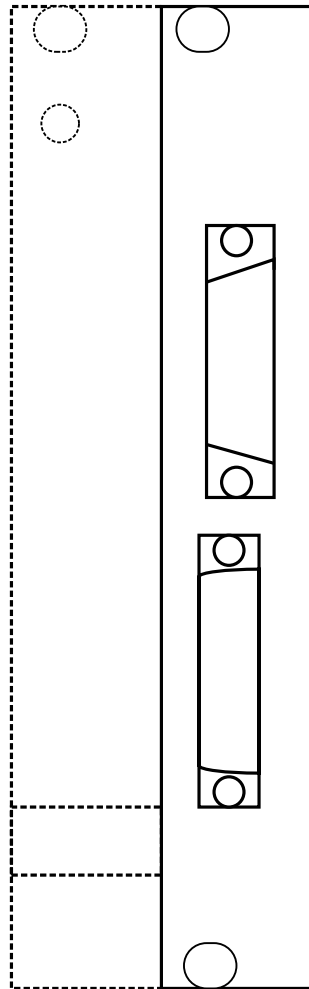
Mass storage

- ◆ Serial IDE (SATA)
 - 1 port for on-board 2.5" hard-disk drive
 - Transfer rates up to 150MB/s

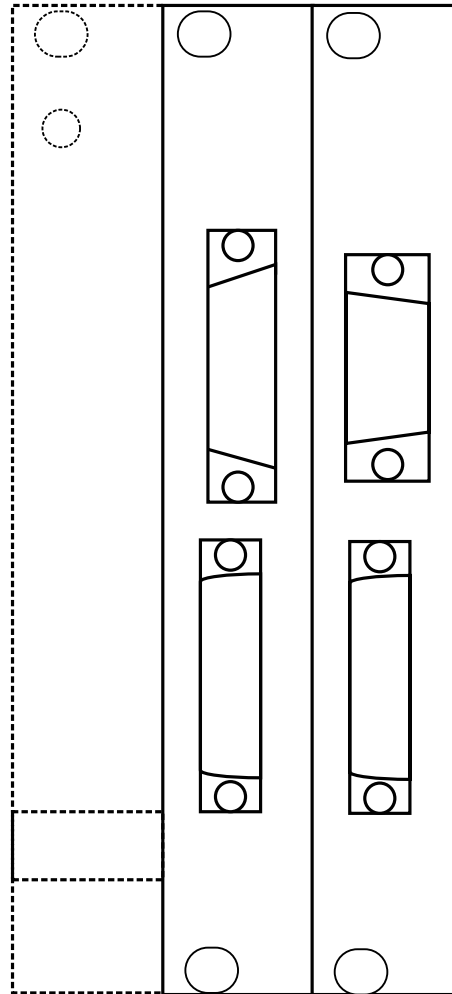


F601 – Front Panel

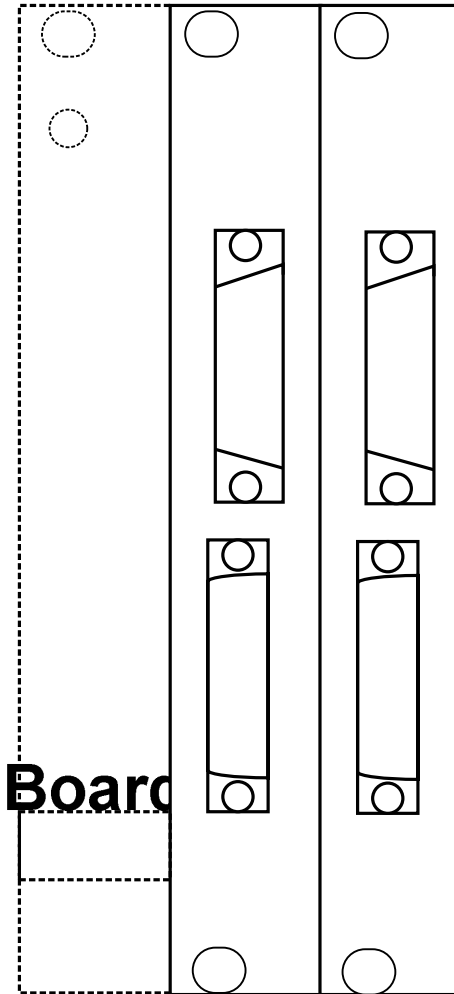
4HP Standard



8HP Standard



8HP Customer-specific



PU Board 01

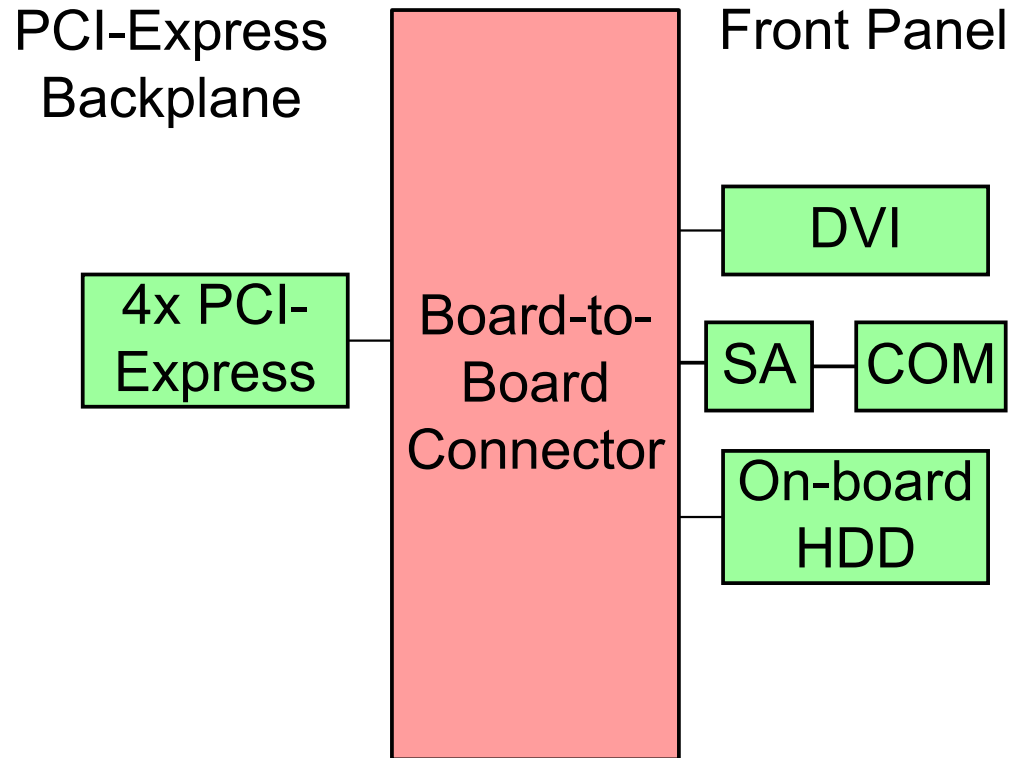
F602 – PCI-Express

I/O

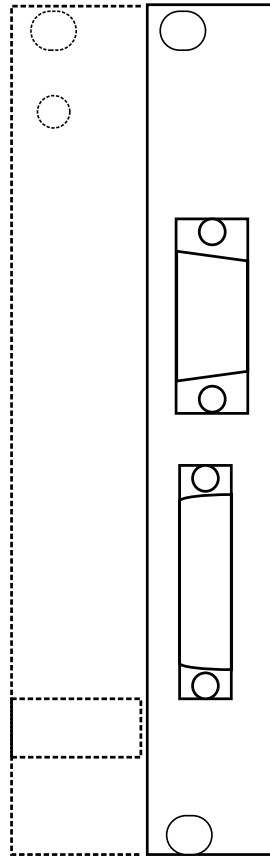
- ◆ 1 DVI
- ◆ 1 COM (via SA-Adapter)
- ◆ 4x PCI Express at the backplane

Mass storage

- ◆ Serial IDE (SATA)
 - 1 port for on-board 2.5" hard-disk drive
- Transfer rates up to 150MB/s



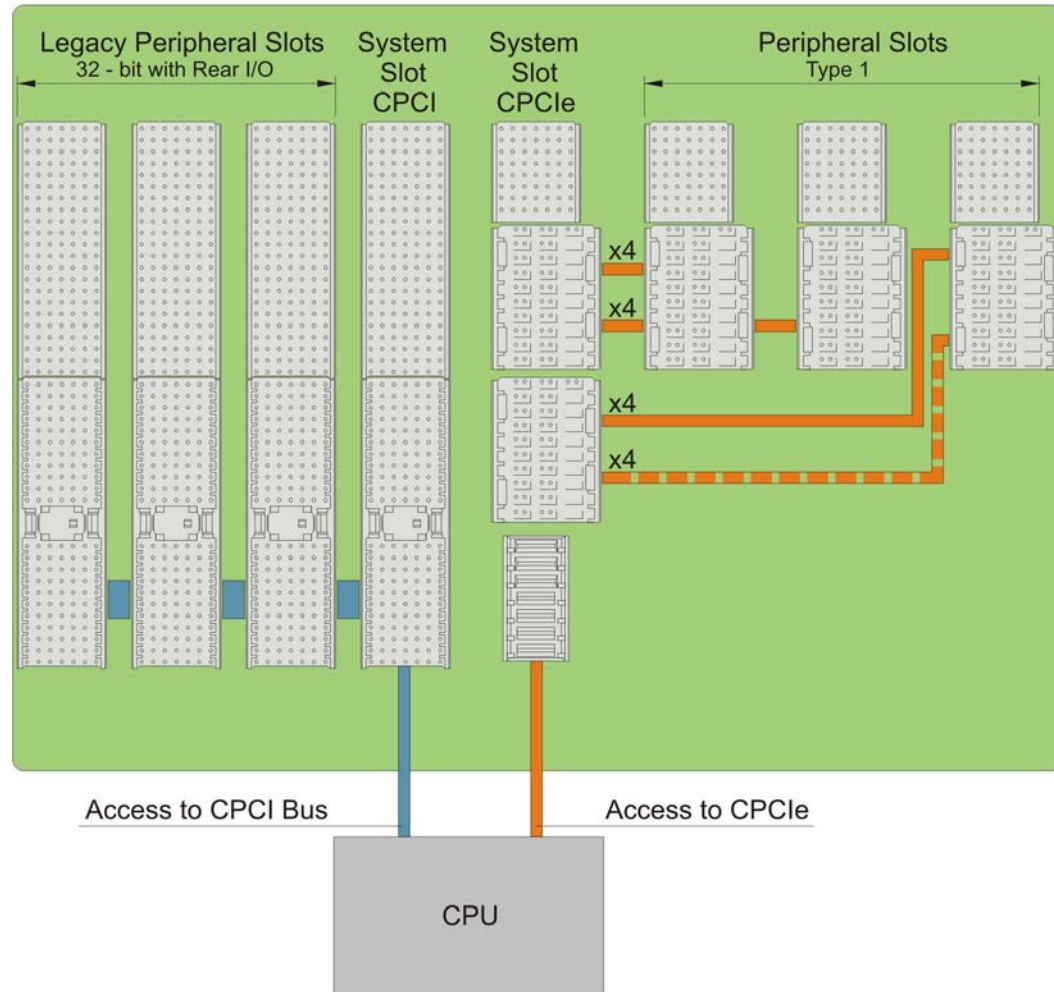
F602 – Front Panel



PCI-Express Backplane for F602

CPCI / CPCI express hybrid backplane

- ◆ 4 slot CPCI
- ◆ 4 slot CPCI Express
- ◆ Migration from CPCI to CPCI express
- ◆ High speed data connection to the peripheral boards via PCI express
=>2Gb per lane



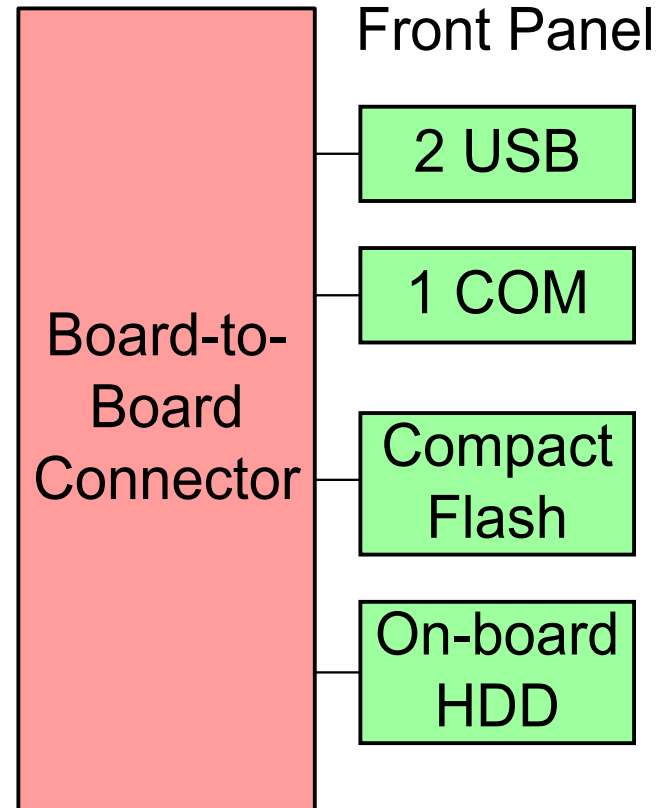
F603 – USB/COM

I/O

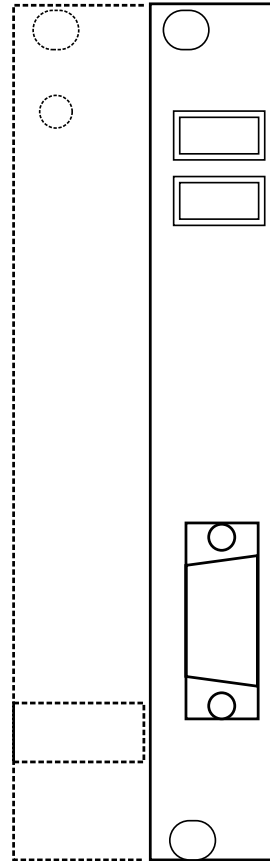
- ◆ 2 USB
- ◆ 1 COM

Mass storage

- ◆ Serial IDE (SATA)
 - 1 port for on-board 2.5" hard-disk drive
 - Transfer rates up to 150MB/s
- ◆ CompactFlash
 - True IDE mode
 - Multiword DMA 2 and
 - UDMA 4 support



F603 – Front Panel



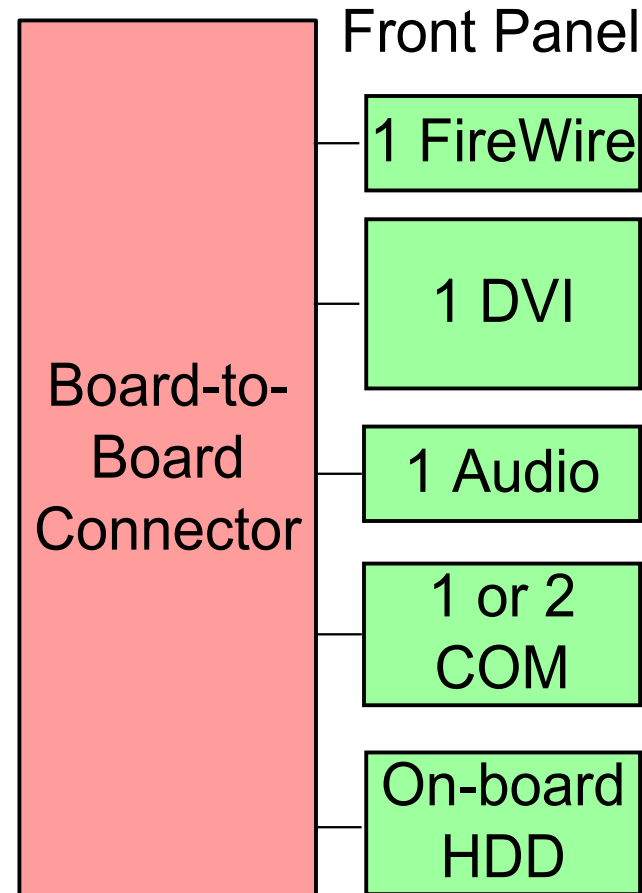
F604 – FireWire

I/O

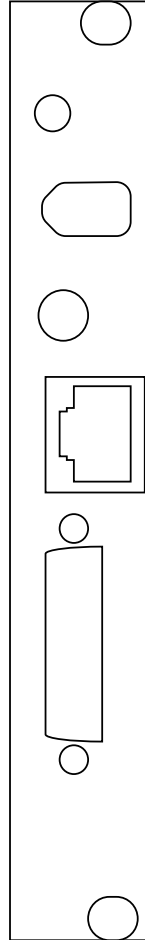
- ◆ 1 FireWire
- ◆ 1 DVI
- ◆ 1 Audio
- ◆ 1 or 2 COM (via RJ45 at front)

Mass Storage

- ◆ Serial IDE (SATA)
 - 1 port for on-board 2.5" hard-disk drive
 - Transfer rates up to 150MB/s



F604 Front Panel



F605 – XMC/PMC

XMC or PMC slot

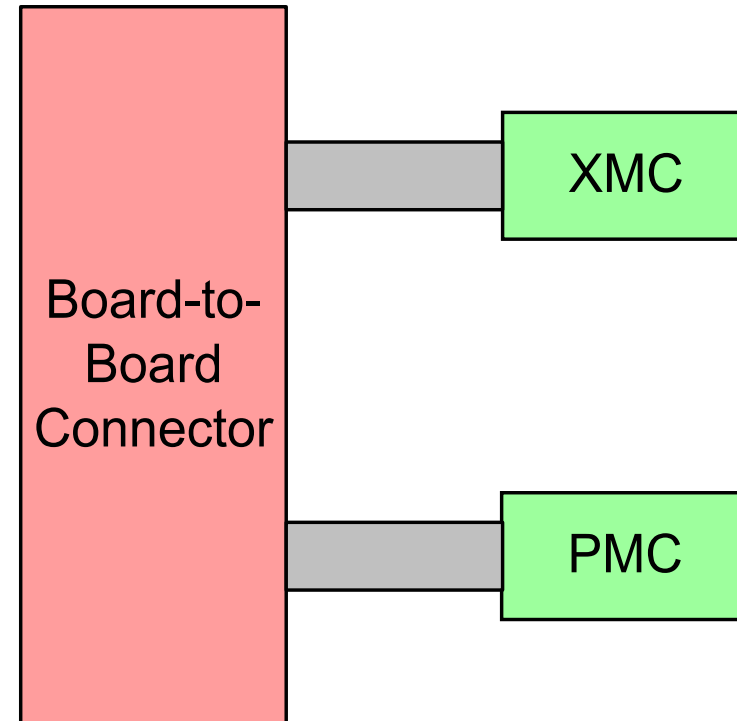
XMC

- ◆ Via one x4 PCIe link on J15 or
- ◆ Via two x1 PCIe links on J15 and J16

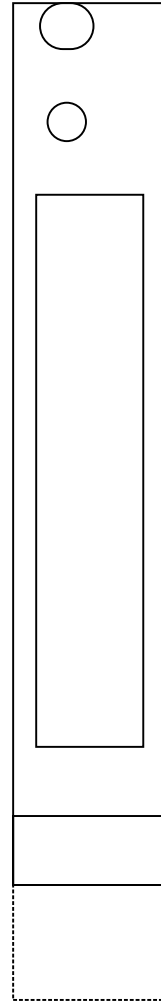
PMC

- ◆ 32/64 bits, 33/66/133MHz, PCI-X
- ◆ Via PCIe-to-PCI-X bridge

SATA hard disk optional



F605 Front Panel



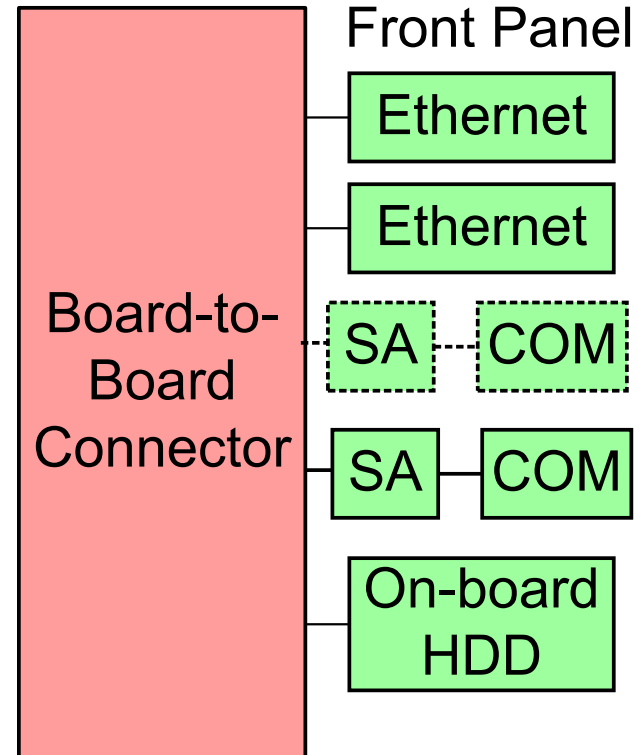
F606 – Gigabit Ethernet

I/O

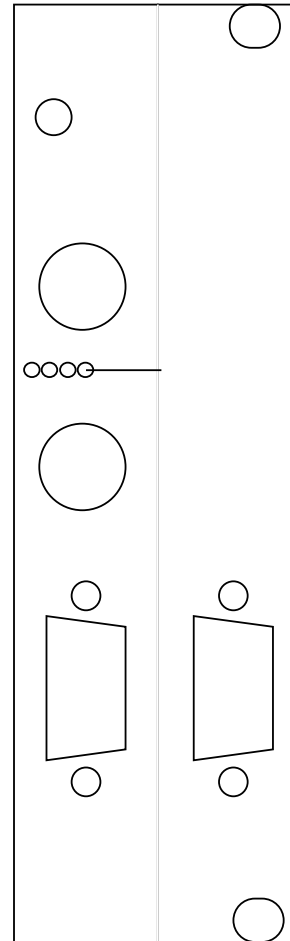
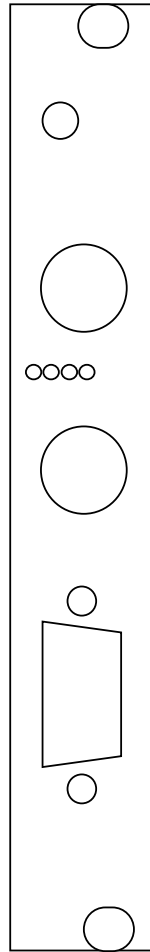
- ◆ 2 Gb Ethernet
Lemo connectors
Via PCI Express
- ◆ 1 UART via SA-Adapter

Mass Storage

- ◆ Serial IDE (SATA)
1 port for on-board 2.5"
hard-disk drive
Transfer rates up to 150MB/s



F606 Front Panel



1-s

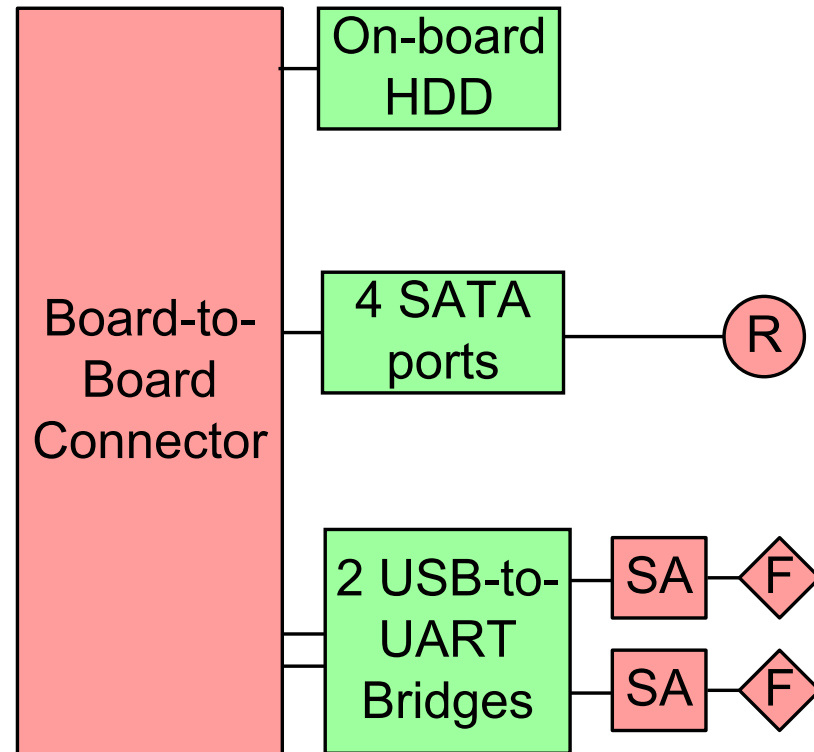
F608 – SATA for RAID

Serial IDE (SATA)

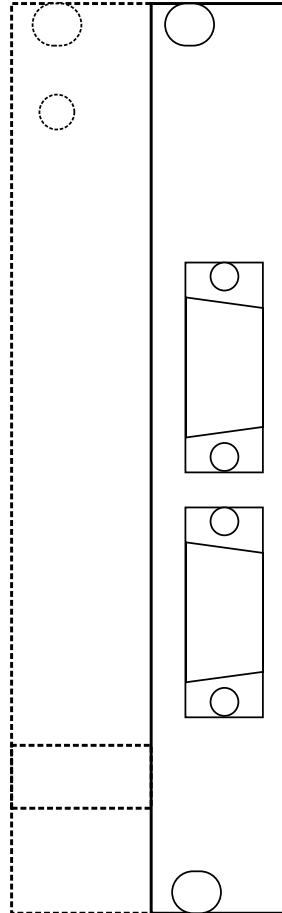
- ◆ 1 port for on-board 2.5" hard-disk drive
- ◆ 4 ports via rear I/O
RAID 0,1,5 support
CPCI PlusIO compliant
- ◆ Transfer rates up to 150MB/s

I/O

- ◆ Two UARTs
From 2 CPU-controlled USB channels
Via SA-Adapters
- ◆ Option: Two DVI and/or two USB



F608 Front Panel



Why is this a concept?

- ⇒ *The side card front panel replaces the Fxx front panel*
- ⇒ *All side boards can be used with all new generation 3U CPCI Intel based boards (F14, F15, F17, F18...)*
- ⇒ *Independent of the CPU performance class I/O, the connectors, the mechanics stay unmodified*
- ⇒ *That's unique*

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