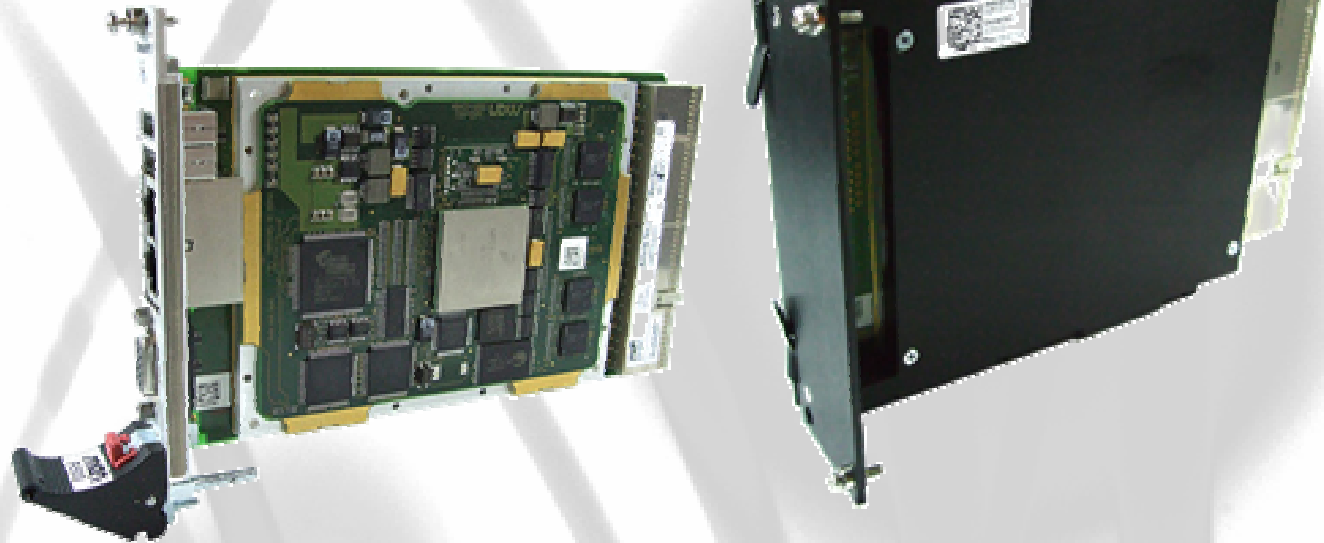


3U CompactPCI MPC8548 SBC F50P / F50C

For rugged, mobile and safety-critical applications

Conduction or convection cooling



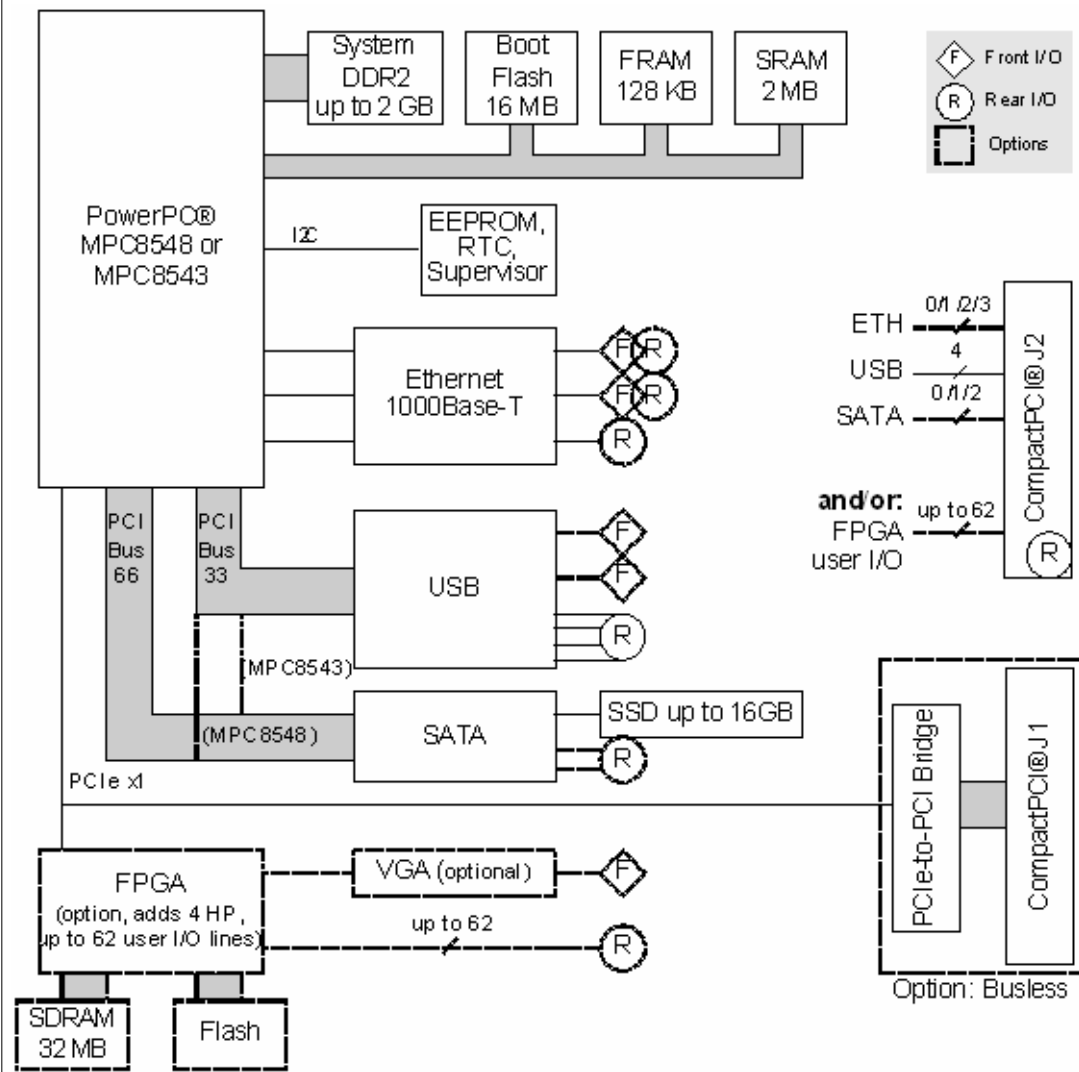
Last Update: March 3, 2009

Overview

- ◆ F50P: 4 / 8 / 12 HP with front I/O, convection-cooled
- ◆ F50C: 5 HP with rear I/O, conduction-cooled

- ◆ 32-bit/33-MHz cPCI system slot
- ◆ MPC8548 (or MPC8543), up to 1.5 GHz
- ◆ Up to 2 GB (ECC) DDR2 SDRAM
- ◆ Up to 128 KB FRAM, 2 MB SRAM
- ◆ Up to 16 GB SSD Flash
- ◆ FPGA for user-defined I/O functions
- ◆ MENMON BIOS for PowerPC cards
- ◆ -40 to +85°C

Technical Data



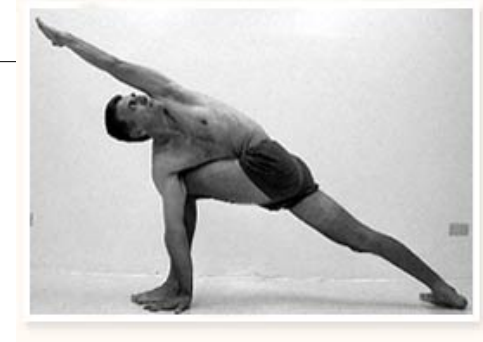
PowerPC MPC8548 or MPC8543

Up to 16 GB SSD Flash

Optional FPGA

Versatile front and rear I/O combinations

Flexibility: Maximized! (1)



Option: FPGA Altera Arria GX AGX35C

- ◆ 33K logic elements
- ◆ 1.2M RAM bits

Max. 62 FPGA I/O pins routed to rear I/O connector J2

Easy tailoring, short time-to-market, low cost

Flexible configuration through IP cores

- ◆ E.g. graphics, COMs, TTL I/O, fieldbuses

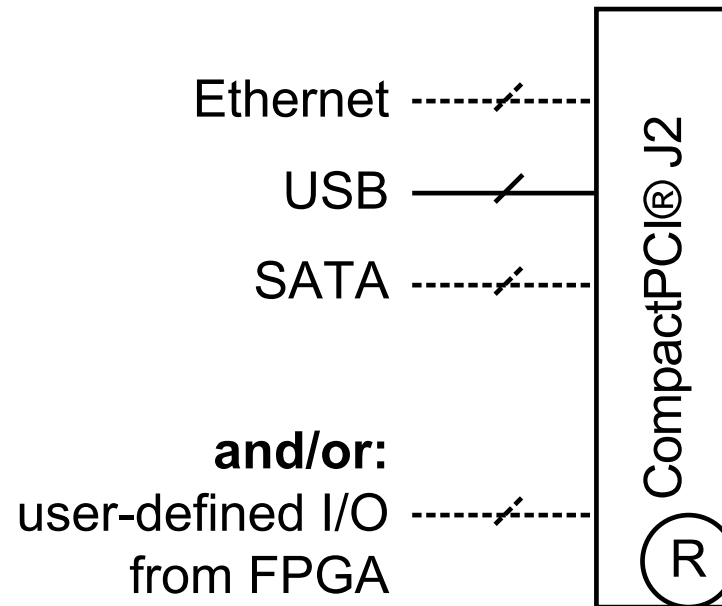
32 MB DDR2 SDRAM

Flexibility: Maximized! (2)

CPU I/O allows flexible signal routing to front and rear

F50P supports different combinations of front and rear I/O

F50P/F50C support different combinations of rear I/O



Flexibility: Maximized! (3)

F50P

FPGA I/O pins	None	24	34	44	54	28	38	48	58	32	42	52	62
Front I/O	No VGA	VGA (routed to FPGA)											
	2 USB	2 USB											
	2 ETH	-	1 ETH	2 ETH	-	-	1 ETH	2 ETH	-	-	1 ETH	2 ETH	-
Rear I/O	1 ETH	3 ETH	2 ETH	1 ETH	-	3 ETH	2 ETH	1 ETH	-	3 ETH	2 ETH	1 ETH	-
	2 SATA	2 SATA	2 SATA	2 SATA	2 SATA	1 SATA	1 SATA	1 SATA	1 SATA	-	-	-	-
	4 USB	4 USB											
Form factor	4/8 HP	8/12 HP											

F50C

FPGA I/O pins	None	24	34	44	54	28	38	48	58	32	42	52	62
Rear I/O	3 ETH	3 ETH	2 ETH	1 ETH	-	3 ETH	2 ETH	1 ETH	-	3 ETH	2 ETH	1 ETH	-
	2 SATA	2 SATA	2 SATA	2 SATA	2 SATA	1 SATA	1 SATA	1 SATA	1 SATA	-	-	-	-
		4 USB										4 USB	4 USB
Form factor		5 HP										5 HP	5 HP

Ruggedness: Vibrant!

Cooling concept

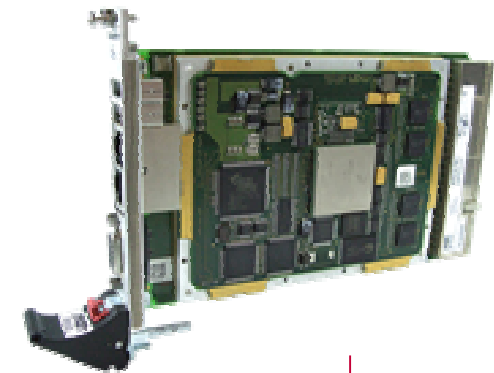
- ◆ Standard 3U cPCI (convection cooled) or
- ◆ 3U conduction cooled assembly (CCA)
For use with MEN CC rack

Extended temperature -40 to +85°C

- ◆ F50C on 5 HP with conduction cooling
- ◆ F50P on 8/12 HP with larger heat sink **or**
- ◆ F50P on 4/8 HP for reduced temperatures (-40 to tbd. °C)

All components soldered

Ready for coating



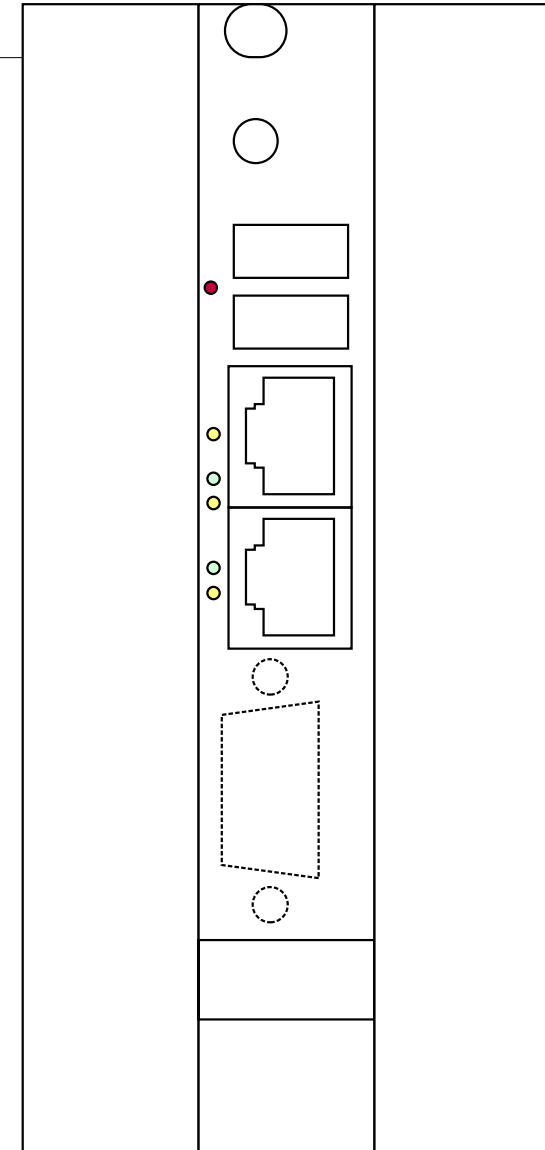
Mechanics

F50P

- ◆ 3U CompactPCI
- ◆ 4 / 8 / 12 HP
- ◆ Convection cooled, airflow min. 1.0 m/s

F50C

- ◆ 3U CompactPCI embedded in MEN-standard 3U-CCA frame
- ◆ 5 HP
- ◆ Conduction cooled



Options (1)

CPU PowerQUICC

- ◆ MPC8548/E, 1 GHz .. 1.5 GHz
- ◆ MPC8543/E, 800 MHz .. 1 GHz

Different memory configurations, e.g.

- ◆ DDR2 RAM up to 2 GB with or w/o ECC
- ◆ Flash disk (SSD) up to 16 GB

Ethernet

- ◆ Up to 2 channels at front
- ◆ Up to 3 channels at rear
- ◆ Only 2 channels total with MPC8543

SATA

- ◆ Up to 2 channels at rear



Options (2)

FPGA

- ◆ 62 user-defined I/O lines
- ◆ Functions available via rear I/O J2 connector
- ◆ FPGA Altera Arria GX AGX35C
- ◆ F50P: VGA at front via FPGA



Cooling concept

- ◆ -40..+85°C conduction cooled on F50C **or**
- ◆ On F50P 8/12 HP with larger heat sink **or**
- ◆ Reduced temperature range on F50P / 4 HP

Accessories

Rear I/O transition module tbd.

Software

MENMON firmware/BIOS



Linux



VxWorks

WIND RIVER

QNX



INTEGRITY



Summary

Compact design for mobile applications

- ◆ CPU and I/O in one chip, incl. MMU and FPU
- ◆ Space for 2 GB DRAM plus SRAM, FRAM, SSD Flash and FPGA

FPGA for flexible rear I/O

Fast and future-safe

- ◆ 3 Gb Ethernet, FPGA with PCIe, USB, SATA

Low power consumption: 15 W total

Rugged

- ◆ Conduction cooling (F50C)
- ◆ All components soldered-on, even RAM
- ◆ CPU qualified for extended temperature range

⇒ *Flexible,
scalable and
rugged for
critical
applications*

Thank you for your attention!

Our mission is to provide embedded computing and I/O solutions for demanding industrial applications while maximizing innovation, reliability and flexibility.



As a member of the UN Global Compact Initiative, MEN is committed to follow the principles of human rights, labour, environment and anti-corruption as defined by this organization.