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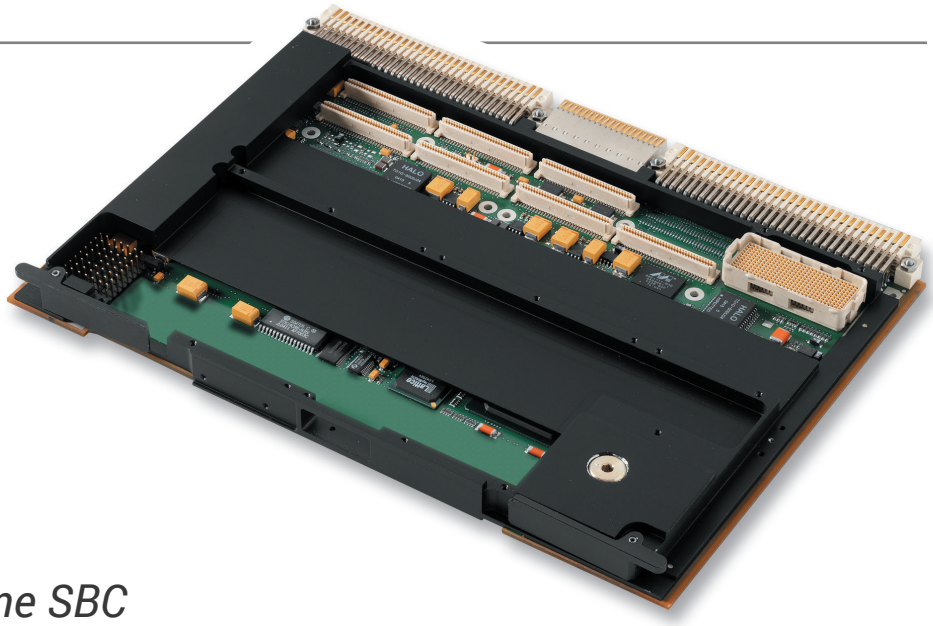
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PPC7D

5th Generation PowerXtreme SBC

PPC7D offers a combination of technology and features, plus full compatibility with the PowerXtreme feature set, first defined in 1995. PPC7D offers the 7448 PowerPC processor, fully supported by the Marvell Discovery III Integrated System Controller providing high data bandwidth to Double Data Rate memory and a bridge to two PCI-X buses. Two PMC sites and a new AFIX (Additional Flexible Interface Xtension) site provide access to further incremental system expansion.

PPC7D software support includes Abaco Systems comprehensive Deployed Test software and PPCBoot firmware, plus Board Support Packages (BSPs) and Enhanced Support Packages (ESPs) for VxWorks from WindRiver, LynxOS from LynuxWorks, INTEGRITY from Green Hills Systems and Open Source Linux. PPC7D protects the user's investment in application software by providing seamless technology insertion opportunities in existing applications.

Additional Flexible Interface Xtensions (AFIX)

For enhanced I/O flexibility the PPC7D offers a new 'plugon' module, which controls the function-ality available on the VME P2 connector. The Additional Flexible Interface Xtension (AFIX) card can be used to maintain pin-for-pin compatibility with the other Abaco Power-Xtreme SBCs, or to add wholly new interfaces. The AFIX is a factory fitted option, providing fully rug-ged flexibility to the PPC7D's already extensive I/O feature set.

Standard Feature Set (without AFIX)

- 2x 10/100/1000BaseT Ethernet ports
- Keyboard and Mouse (or 2x USB 2.0 ports)
- 16-bits GPIO (or Parallel Port)
- 6x serial ports (or Rear I/O from PMC site 2)

Feature set with AFIX1553

- Dual channel, dual redundant MIL-STD-1553B interfaces
- 2x DDC PCI MicroACE
- Each channel offers independently selectable BC, RT, MT modes
- 64 K words of RAM (with parity) per channel
- Transformer-coupled / direct-coupled

Feature set with AFIX SG

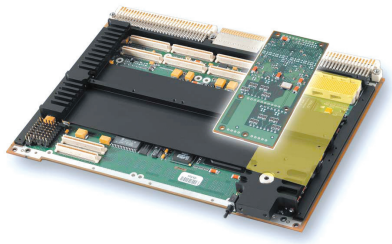
In addition to the standard feature set, the AFIX SG offers a combination of SCSI and Graphics capabilities.

- 8-bit Ultra SCSI (20 MBs/sec) or 16-bit Ultra SCSI (40 MBs/sec)
- RGB Analog Graphics (Silicon Motion SM722 Graphics Accelerator, withintegral 8 MB memory. Resolutions up to 1280x1024)

(Note: option with 16-bit Ultra SCSI results in reduced GPIO capability from host card - eight lines available)

FEATURES:

- PowerPC processor from Freescale
- High performance architecture
- Fully rugged
- Extensive Abaco Systems software support
- Key features
  - PowerPC 7448 @ 1.4 GHz
  - 2 PCI-X enabled PMC sites up to 133 MHz
  - DDR SDRAM on 133 MHz main memory bus
  - 2x 10/100/1000 BaseT ports
  - 6x serial ports
  - 2x USB 2.0 ports
  - Choice of AFIX daughter cards



PPC7D Base Board and AFIX Card

abaco SYSTEMS

PPC7D *5th Generation PowerXtreme SBC*

Specifications

Processor
- PowerPC 7448 at up to 1.4 GHz
- 1 MB on-chip L2 cache
- Supports Dynamic Frequency Switching (DFS) from 1 GHz to 500 MHz

System Controller
- Marvell Discovery III Integrated System Controller (ISC) with two PCI-X interfaces

Main Memory
- 512 MB DDR SDRAM with ECC
- 64-bit data bus running at 133 MHz

Flash Memory
- 128 to 512 MB Flash via a 32-bit data bus running at 133 MHz
- 16 MB Boot Flash

Non-volatile RAM
- 32 KB autostore NVRAM

Real-Time Clock
- 1 sec resolution
- 5V standby features alarm interrupts

Ethernet Interfaces
- 2x 10/100/1000 BaseT; configurable as two 10/100BaseT

Serial Ports
- 6x RS-232; RS-232/422 or RS-485

Keyboard / Mouse
- PS/2 compatible

USB Ports
- 2x USB 2.0

Discrete Digital I/O
- Up to 16 bits of TTL-compatible discrete digital I/O capable of generating interrupts

Parallel port
- 1x Parallel port IEEE P1284 compatible

Timers
- 4x 32-bit timer/counters

Watchdog Timer
- 1.6 sec time-out

DMA Engines
- 4x DMA controllers

VME
- Tundra Universe II VME64 master/slave with SYSCON capability

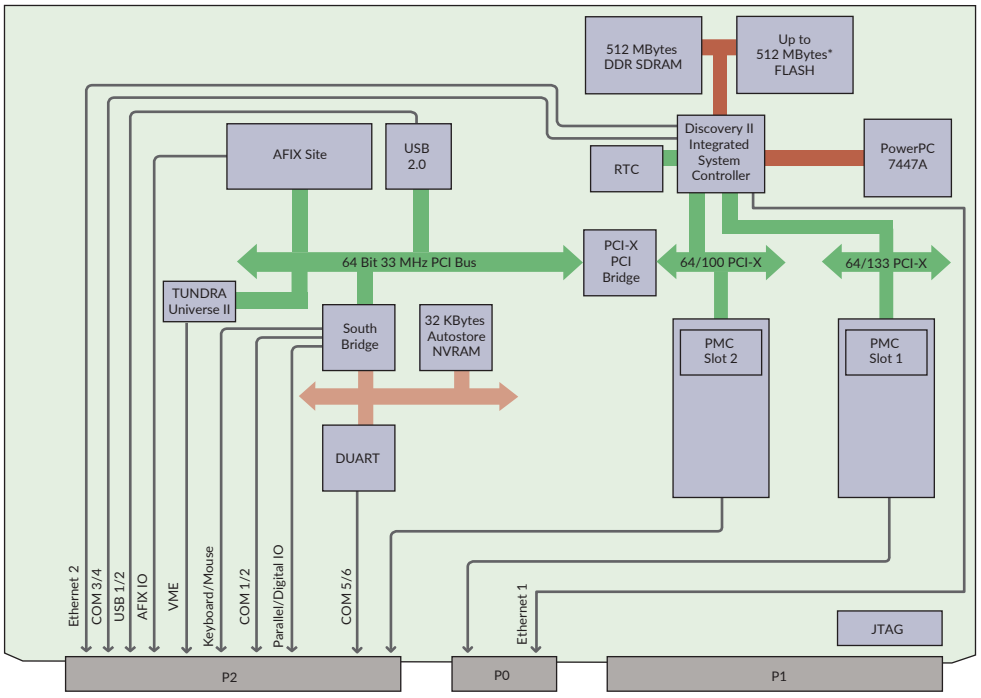
PMC
- 2x PMC sites PCI-X capable

AFIX Site
- AFIX1553 Dual channel dual redundant MIL-STD-1553 interfaces based on DDC MicroAce
- AFIXSG Integrated graphics accelerator with on-chip memory plus 8- or 16-bit Ultra SCSI (up to 40 MBs/sec)

Power Consumption
- 17W, 25W max. JTAG Interface
- 1x on-board connector

Software
- Deployed test strategy (BIT and BCS); VxWorks; LynxOS

Block diagram



Environmental

	Level 1	Level 2	Level 3	Level 4	Level 5
Cooling Method	Convection	Convection	Convection	Conduction	Conduction
Conformal Coating	Optional	Standard	Standard	Standard	Standard
High/Low Temp	0 to 55°C	-20 to +65°C	-40 to +75°C	-40 to +75°C	-40 to +85°C
Operational	(300 ft/m)	(300 ft/m)	(600 ft/m)	At cold wall	At cold wall
Random Vibration	0.002g2/Hz*	0.002g2/Hz*	0.04g2/Hz**	0.1g2/Hz**	0.1g2/Hz**
Shock	20g***	20g***	20g***	40g***	40g***

**With a flat response to 1000 Hz, 6 dB/Oct roll-off from 1000 to 2000 Hz ** From 10 to 1000 Hz ***Peak sawtooth 11 ms duration

Ordering information

Part Number	Description
PPC7D-1G55ABXx	Dual 1.4 GHz PowerPC 7448, 6U VME SBC, level 1, 512 MB DDR SDRAM, 128 MB Flash, 2x GbE, 2x USB, 16 bits GPIO, 2x RS-232, 4x RS-232/422/485, 2x PMC slots, 5 row P1 & P2, Type B 95 way PO
PPC7D-2G55ABXx	Air-cooled level 2 as above with conformal coating
PPC7D-3G55ABXx	Air-cooled level 3 as above with conformal coating
PPC7D-4G55ABXx	Conduction-cooled level 4 as above
PPC7D-5G55ABXx	Conduction-cooled level 5 as above

X=software option; x = AFIX option (0= No AFIX, 1= AFIX1553 single channel, 2= AFIX1553 dual channel, 3= AFIXSG)

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