1. Overview

XCalibur1002 is a 6U CompactPCI single board computer with a PICMG 2.16 Gigabit Ethernet backplane interface. An extended operating temperature range of -40C to +85C makes XCalibur well suited for industrial and military applications. With a 500MHz to 1GHz IBM PowerPC Processor, XCalibur is ideal for the high bandwidth processing require-ments of today's blade and general computing applications.

XCalibur1002 provides a highly configurable processing platform. 266MHz (Industiral Temperature) or 400MHz (Commercial Temperature) DDR DRAM provides up to 1GB of local memory. An optional CompactFlash interface accepts up to 1GB of non-volatile memory. Two PCI-X PPMC slots are available for high bandwidth IO.

Hot Swap support allows XCalibur1002 to be installed into a live system without disrupting CompactPCI bus activity. In addition, system management bus support allows the card to be powered down and reset remotely through the IPMI interface.

To the system designer, XCalibur1002 provides a feature rich solution to support the next generation of embedded applications.

Board Support Packages are available for the VxWorks, Linux, QNX, INTEGRITY, and OSE Real Time Operating Systems.

1.1 Features

The list below is a brief description of XCalibur1002 features. Refer to the specific section in the manual for additional information.

PowerPC 750GX Pro-cessor	The low power / high performance IBM 750GX PowerPC Pro-cessors operate internally at up to 933MHz (Industrial Temp) or 1GHz (Commercial Temp). In addition 32KB L1 instruction and data caches are provided, as well as a on-board 1MB L2 Cache.
Dual PCI-X PrPMC Slots	Two PCI 2.2 compliant PrPMC slots are provided. P14 PMC IO is routed to the J3 and J5 connectors per PICMG 2.3.
Autosense System / Peripheral Slot	XCalibur automatically detects and configures for either Com-pactPCI system slot or peripheral slot operation.
Hot Swap Support	PICMG 2.1 Hot Swap support allows insertion and removal from an active CompactPCI bus.
DDR SDRAM	XCalibur supports up 1GB of DDR SDRAM operating at 266MHz (Industrial Temp) or up to 400MHz (Commercial Temp).
FRAM	A 32KB FM18L08 Ramtron FRAM is provided for nonvolatile storage.

Socketed / Soldered Flash	A 512KB socketed flash is provided. Up to 144MB of soldered boot flash is also supported.
CompactFlash Socket	A CompactFlash interface provides up to 1GB of removable non-volatile storage.
Front Panel Serial and Gigabit Ethernet Ports	Front Panel Serial and Gigabit Ethernet ports are provided for debug and communication.
Extended Temperature	Supports operation from -40C to +85C.
RTOS and Protocols	Board Support packages for Wind River System's VxWorks operating system. Driver level initialization, configuration and protocol support for Discovery II and Gigabit Ethernet interfaces. Linux Support Package for Montavista's embedded linux also available, as well as OSE and QNX board support packages.

1.2 Block Diagram

Figure 1.2.1: Block Diagram