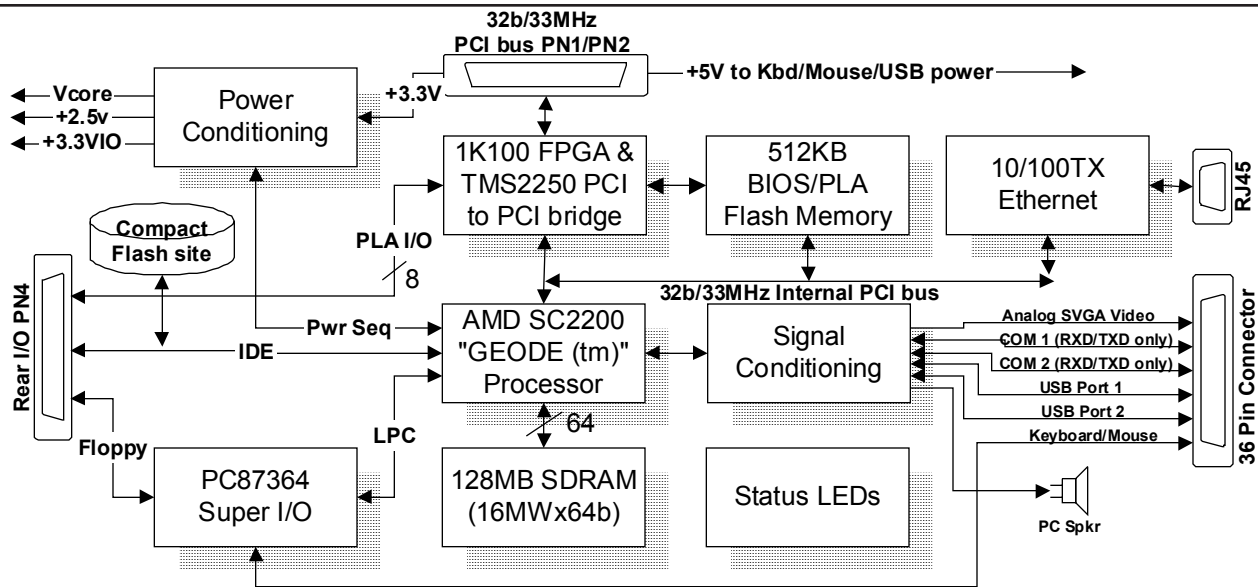# x86 Platform Coprocessor/PrPMC (PC on a PMC)

This board is a Processor PMC (PrPMC) implementing an x86-based PC architecture on a single-wide, standard height PMC form factor. This delivers a complete x86 platform with comprehensive I/O support, a 10/100-TX Ethernet interface, and disk access (both floppy and IDE drives). The board features an on-board hard drive using Compact Flash.

At the heart of the design is an Advanced Micro Devices SC2200 GEODE™ processor that integrates video, DRAM controller, PCI bus interface, IDE interface, USB, and many other standard PC peripheral devices. The Geode operates at up to 300 MHz processor clock speed, with 100 MHz 64-bit SDRAM bus speed. The product is provided with 128MB SDRAM.

A PC37364 Super I/O chip provides standard keyboard and mouse ports, as well as a floppy disk controller (FDC) interface. The FDC interface is available out the PN4 connector, while the keyboard/mouse are routed to the front panel connector.

The GEODE provides a 16-bit wide IDE interface which is available to an on-board Compact Flash device (e.g., a Hitachi Microdrive™). To support rear I/O attachment of IDE devices, the IDE interface also is presented at the PN4 connector. Only the Primary IDE interface channel is supported, for either two external drives (master/slave) or one external slave and the on-board Compact Flash master device.

An on-board Intel 82559 Ethernet controller provides 10/100-TX connectivity via a front-panel RJ45 jack.

The interface between the GEODE processor's local PCI bus and the PMC's external PCI bus is implemented in a 1K100 PLA. Two PLA configurations are supported:

A PrPMC implements a TMS2250 PCI-to-PCI bridge to the host, and a "Coprocessor" cofiguration implements back-to-back 16550 compatible COM ports. The "Monarch" signal selects either PrPMC or Co-processor mode.

A 512Kbyte FLASH memory holds the 1K100 PLA image that is automatically loaded on power up. It also contains the General Software Embedded BIOS 2000™ BIOS code that is included with each board.

A key feature of this board is its low power dissipation, consuming less than 6 watts for a typical configuration. Power conditioning logic provides operational voltages for the SC2200 and 1K100 and also assures correct sequencing on power up/down. The board only draws off of the +3.3V power rail, with +5V required for keyboard/mouse/USB operation.

A 36-position connector presents two USB ports, two COM ports, the keyboard and mouse interfaces, and analog SVGA video at the front panel. An external breakout board (P/N 3917) is available to separate the various I/O into their respective connectors. The connecting cable is the same as that used for IEEE 1284 (PC Parallel Port) applications.

Status LEDs on the back of the board monitor ALTERA 1K100 FPGA load, Ethernet, and IDE activity.

To effectively develop and deploy the product, the customer is required to purchase a turn-key development system (P/N 4390) consisting of a 3797 PrPMC, a 3923 ATX platform, and a 3917 I/O breakout board; the development system comes with a cabinet, power supply, hard disk (insalled with Red Hat ver 9.0), CD ROM, keyboard, and mouse. The user supplies the monitor.
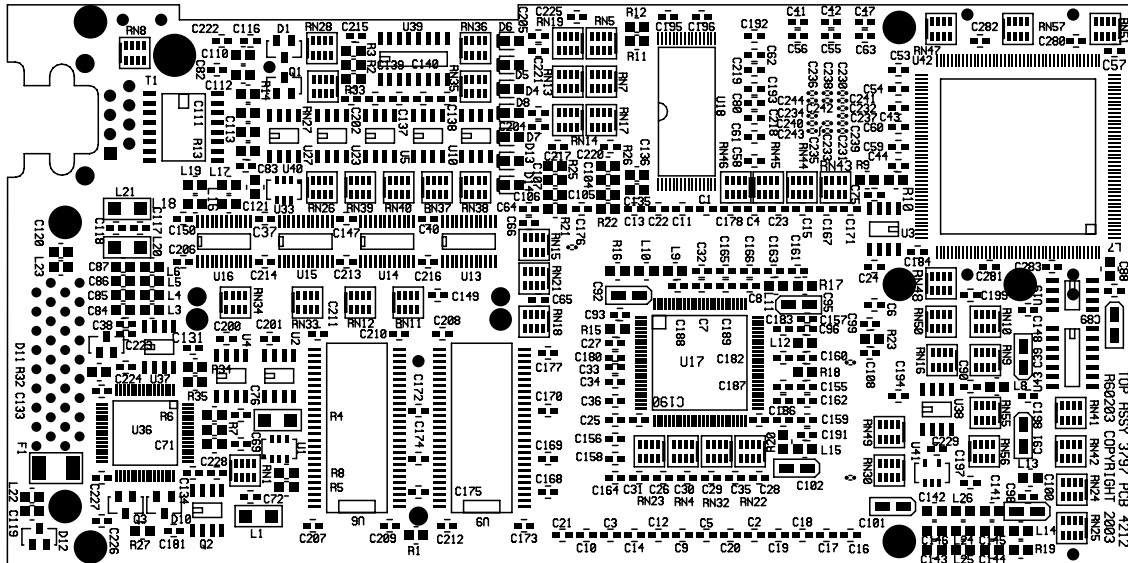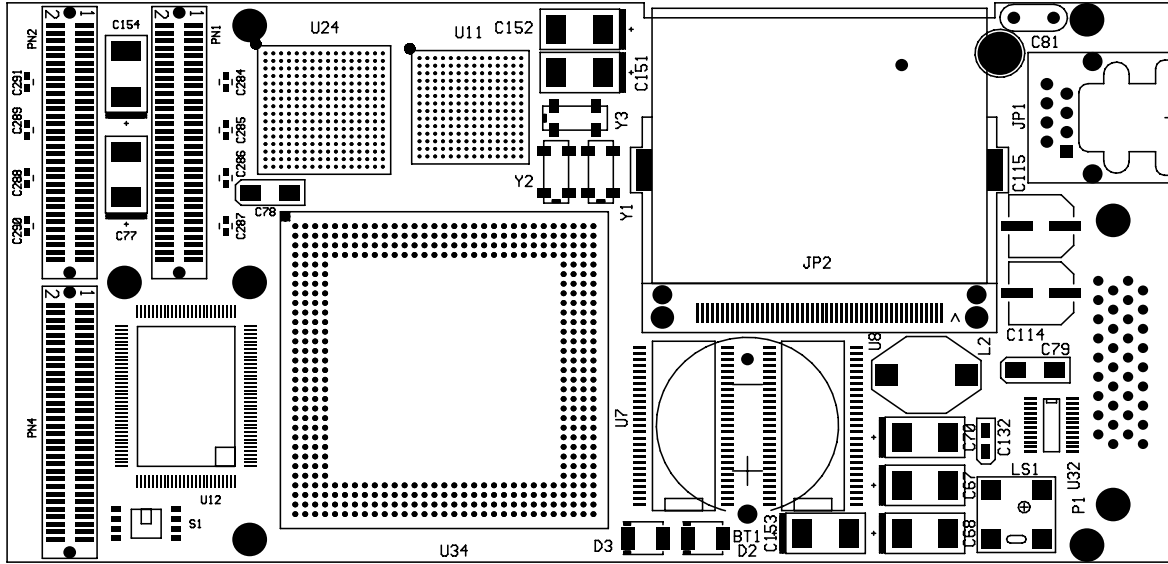
Product Summary

Technobox Part Numbers:	3797 (Processor PMC – 128 MB DRAM)
	3917 (External connector breakout board)
	4390 (Development System Platform)
Typical Power Dissipation:	6 watts typical
Power Supplies Required:	+5 Volt for Keyboard/Mouse/USB. +3.3V for Processor
PCI Signaling Environment:	5 Volt or 3.3 Volt

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