

EUROCOM 248

Pentium III Real-Time CompactPCI CPU Board

- PC platform on the CompactPCI bus
- Pentium III CPU with 1266 MHz supported
- Optimized for real-time applications

III Main Features

- Fully PC-compatible CompactPCI PC
- Intel Pentium III, Celeron CPU (up to 1266MHz), socket 370
- Intel 815 chip set
- Double Eurocard format / single slot, passive cooling (available as an option)
- 64 to 512MB SDRAM on SO-DIMM
- 128 / 256 / 512kB on-chip second level cache
- PCI local bus, 32-bit, 33MHz
- IDE hard disk controller with disk on-board mountable
- Compact Flash slot on IDE
- Dual 10 / 100Mb/s network interface (10BaseT / 100BaseTX). Gigabit Ethernet optional
- Graphics on-board
- On-board PMC mezzanine board slot or 2.5" hard disk
- Two serial channels with hardware hand-shake
- Two 16-bit programmable timers
- Keyboard and mouse interface
- USB Interfaces
- Non-volatile memory 2kB

III Technical Details

The EUROCOM 248 is an Intel Pentium III single-board computer with a CompactPCI interface, optimised for real-time applications, while maintaining full PC compatibility.

This is the ideal platform for industrial applications with real-time operating systems, extending ELTEC's successful BAB product line for Intel CPUs.

CPU

Intel socket 370 processors from Celeron-566, to Pentium III (1266MHz) are supported. The CPU has FPU, MMU and second level cache. Host bus speed is 66 / 100MHz for the Celeron and 100 / 133MHz for Pentium III.

Single-slot operation of the board may be limited to specific CPU speed grades (t.b.d.).

The board is based on the Intel 815 PCI chip set, following Intel's "Universal Motherboard" design guidelines. As it is part of the "embedded product line", availability for longer periods than what is common in the PC market is guaranteed.

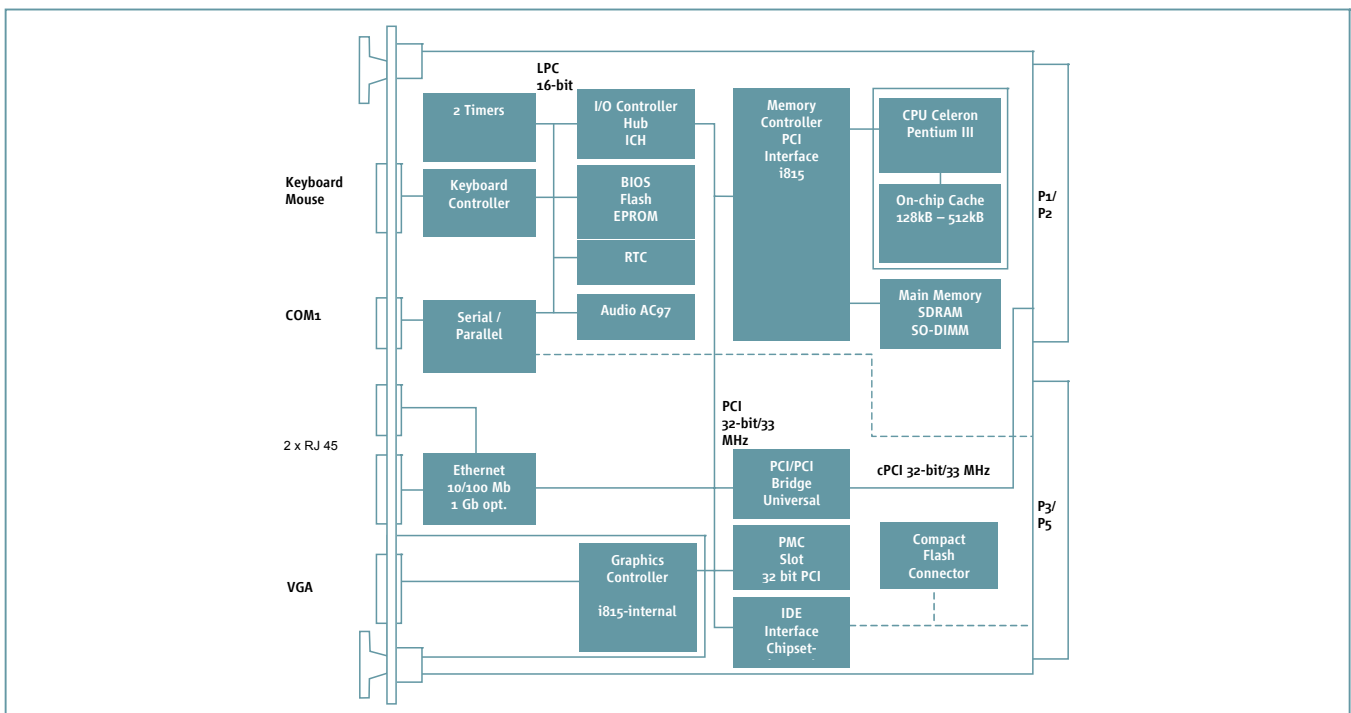
CPU type	CPU clock (MHz)	Cache
Celeron	566-1200	128 / 256kB
Pentium III	600-1266	256 / 512kB

Memory Configuration

The 64-bit wide memory allows configurations from 64MBytes to 512MBytes using one SO-DIMM with 133MHz SDRAM. Memory size is detected automatically. The second-level cache is located on the CPU chip. There is a non-volatile memory with 2kBytes capacity on the board.

Firmware

The BIOS (General Software) is stored in a Boot-Block structured Flash-EPROM which enables easy BIOS updates. Boot from floppy, IDE hard disk, CD-ROM, CompactFlash is supported. A net boot is supplied in the same Flash Prom.



Graphics Interface

The graphics interface of the EUROCOM 248 is the graphics controller of the 815 chip set. It can display up to 1280 * 1024 pixels in true colour (24 bpp). Since it uses an unified memory graphics frame buffer, there is a trade-off between the bandwidth used for display and for CPU access. The table gives an idea of the bandwidth reserved for graphics:

Display	Video bandwidth	Bus load (relative to total approx. bandwidth @ 133 MHz)
800 * 600 (16 bpp)	80 MB/s	< 10%
1024 * 768 (8 bpp)	80 MB/s	< 10%
1280 * 1024 (24 bpp)	290 MB/s	30%

The graphics interface is fully compatible with the VGA standard at the hardware, register and BIOS level. Mode initialisation is supported at the BIOS and register levels ensuring compatibility with all application software.

Hard Disks / Mass Storage

Hard Disks are supported by the PCI-based E-IDE port with Ultra DMA/66 transfer. Secondary IDE is routed to the P5 connector. Primary IDE is routed to an on-board connector, allowing for an on-board 2.5" disk (mounted as an alternative to PMC modules) with up to 9,5 mm height. A Compact Flash connector is supplied on-board for alternative or simultaneous on-board use. All types of common 3,5" Floppy drives are supported.

Ethernet Interfaces

The two network interfaces on the EUROCOM 248 use the network controller i8259ER for 10/100 Mb connectivity with the 10BaseT or 100BaseTX standards. Optionally, one port can be ordered with 1Gb capability (i82540). Remote boot from LAN is supported.

I/O Features

Two asynchronous 16550-compatible serial channels with up to 115 kbaud transfer rate and 16-byte FIFO with RS232 levels are available. PS/2-compatible keyboard and mouse are provided, as well as two USB ports, one routed to the back panel.

Universal CompactPCI Interface

The CompactPCI interface is implemented with the Hint HB6 universal bridge chip. It features FIFOs for fast transfers. This bridge is a universal (transparent or non-transparent) bridge, intended for use in system as well as peripheral slots. The standard version of the EUROCOM 248 has a transparent-only bridge, however.

The use of atomic cycles through the CompactPCI interface cannot be guaranteed.

A Power Fail signal on the CompactPCI can generate an interrupt for the EUROCOM 248 CPU.

Watchdog / Timers

The EUROCOM 248 has an on-board watchdog for automatic reboot after software failures. The timer has programmable two 16-bit counters, clocked with 2MHz.

PMC

An on-board PCI extension for one 32-bit / 33MHz PMC board is provided. It can be used to plug in an additional PMC board, such as SCSI, graphics, I/O, network interfaces. The PMC module shares its mounting space with the on-board IDE hard disk.

Audio

AC97-compatible audio with digital interface routed to the P5 connector is also on the board.

Operating Systems

Software support includes all standard PC software such as: Windows 98 / ME, Windows NT, Windows 2000, Windows XP as well as Linux.

LED Indicators

There are LED indicators on the front panel for Power status, hard disk activity, user-programmable (2*), Ethernet Link indicator, and for Ethernet speed.

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III Specifications

Environmental Conditions

- Storage Temperature: -20 °C - 70 °C
- Operating Temperature (1200 MHz): 0 - 40 °C (2 m/s forced air cooling)
- Operating Temperature (566 MHz): 0 - 55 °C (2 m/s forced air cooling)
- Cooling requirements for different environments and CPU frequencies should be discussed with ELTEC.
- Maximum Operating Humidity: 85 % relative

Power Requirements (without PCI extensions)

- 10A max. 5,0A typ. at + 5 VDC ± 5 %
- 10A max. 5,0A typ. at + 3,3 VDC ± 5 % (for the 1200 MHz version)
- 100mA max. 30mA typ. at + 12 VDC ± 10 %
- 100mA max. 30mA typ. at - 12 VDC ± 10 %

MTBF Values

- T.b.d. hrs (computed after MIL-HDBK-217E)
- CE Compliance (industrial)

Transition board

The transition board, connecting the I/O pins on the CompactPCI back plane to connectors, is compatible to the existing adapter for the EUROCOM 238. All I/O features of the EUROCOM 248 are supported, except timer I/O.

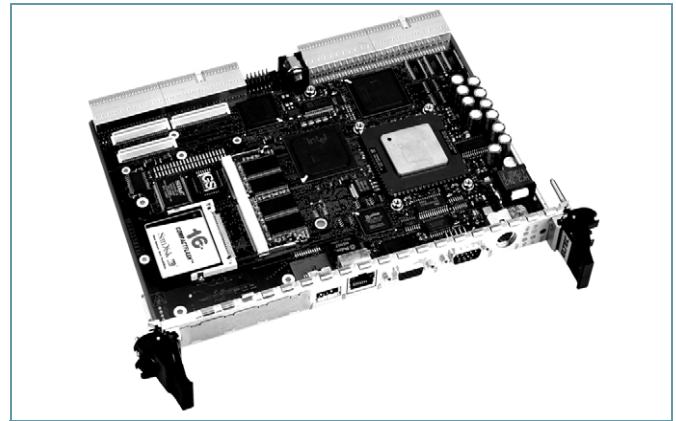
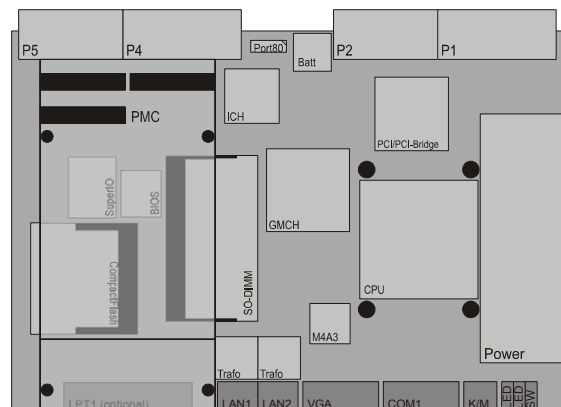
Front Panel Connectors

The figure shows the dual (100Mb) Ethernet version, there is also a mixed 1Gb / USB version available.

Documentation

- Free Internet

Please contact your local sales office for detailed information.

**Parts Placement****Front Panel Options**