EUROCOM 258

Pentium M CompactPCI CPU Board

- ↪ PC platform on the CompactPCI bus
- ↪ Pentium M CPU with up to 1.8 GHz
- ↪ Optimized for industrial applications

↪ preliminary

Main Features

- Fully PC-compatible CompactPCI CPU board
- Intel Pentium M Banias power-optimized CPU up to 1.6 GHz or Dothan CPU up to 1.8 GHz, socket 479
- Intel 855GME chip set
- Double Eurocard format / single slot, passive cooling
- 256 to 1024 MB DDR RAM on SO-DIMM
- 1MB (2MB with Dothan CPU) on-chip second level cache
- PCI local bus, 32-bit, 33MHz
- IDE hard disk controller
- Disk on-board mountable
- Compact Flash slot on IDE (optional)
- Gigabit network interface (1000BaseTX)
- Graphics on-board (chip set-internal)
- On-board PMC mezzanine board slot or 2.5" hard disk
- Two serial channels
- Two 16-bit programmable timers
- Keyboard and mouse interfaces
- Non-volatile memory 2kB
- USB 2.0 Interfaces

Technical Details

The EUROCOM 258 is an Intel Pentium M single-board computer with a CompactPCI interface, optimized for real-time applications, while maintaining full PC compatibility. Processing speed of the Pentium M CPU is comparable to the Pentium 4 - at a much lower power consumption, however.

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

CPU

The EUROCOM 258 supports the Intel Pentium M processor for the socket 479. The CPU has FPU, MMU and second level cache. It is optimized for relatively low power consumption, thus minimizing heat problems on space-constrianed system boards. Host bus speed is 400MHz. The standard version of the EUROCOM 258 has a 1.6-GHz Pentium-M, mounted on a socket. Multimedia instruction set enhancement SSE2 is implemented, as well as power-saving SpeedStep modes.

CPU type	CPU clock (MHz)	2nd level Cache
Pentium M (Banias)	1600	1 MB
Pentium M (Dothan)	1800	2 MB

Chip Set

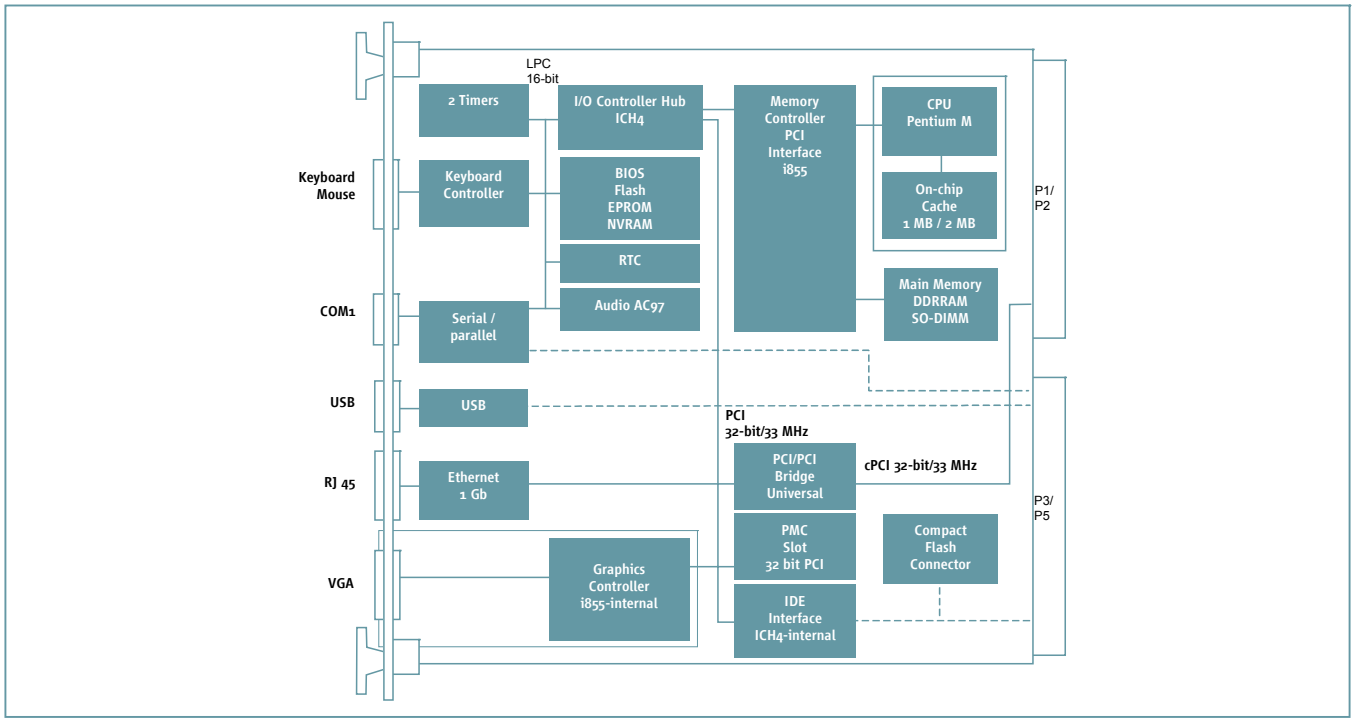
The board is based on the Intel 855GME PCI chip set, following Intel's motherboard design guidelines. As it is part of the "embedded product line", availability for longer periods than what is common in the PC market is guaranteed.

Memory Configuration

The 64-bit wide memory allows configurations up to 1GByte using one SO-DIMM with 166 MHz DDR-RAM. 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 258 is the graphics controller of the 855GME chip set. It can display up to 2048 x 1536 pixels in true color (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 @ 400 MHz/8 Byte)
1024 * 768 (8 bpp)	80 MB/s	2.5%
1280 * 1024 (24 bpp)	290 MB/s	9%
1600 * 1200 (24 bpp)	522 MB/s	16%

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-133 transfer. Secondary IDE is routed to the P5 connector. All types of common 3,5" Floppy drives are supported.

Ethernet Interfaces

The network interface on the EUROCOM 258 uses the network controller i82541PI for 1Gb connectivity with the 1000BaseTX standard. 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 three USB 2.0 ports, routed to the back panel. One USB port is routed to the front.

Universal CompactPCI Interface

The CompactPCI interface of the EUROCOM 258 is available 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 use of atomic cycles through the CompactPCI interface cannot be guaranteed.

Watchdog / Timers

The EUROCOM 258 has an on-board watchdog for automatic reboot after software failures. A timer has programmable 16-bit counters, clocked with 1.193MHz.

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 2.2-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 2000, Windows XP as well as Linux and VxWorks.

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: 0 - 40 °C (1 m/s forced air cooling)
- Operating Temperature: 0 - 50 °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)

- 7A max. 5,0A typ. at + 5 VDC ± 5 %
- 5A max. 3,0A typ. at + 3.3 VDC ± 5 %, (for the 1600 MHz version)
- 100mA max. 30mA typ. at + 12 VDC ± 10 %
- 100mA max. 30mA typ. at - 12 VDC ± 10 %

MTBF Values

- 13910 hrs (computed after MIL-HDBK-217E)
- 186393 hrs (computed after ELTEC experience)

- CE Compliance (industrial)

Transition Board

The transition board ADAP-600, connecting the I/O pins on the CompactPCI back plane to connectors, contains an AC-97 codec, 3 * USB 2.0, IDE, Floppy, PMC I/O, parallel, and serial I/O.

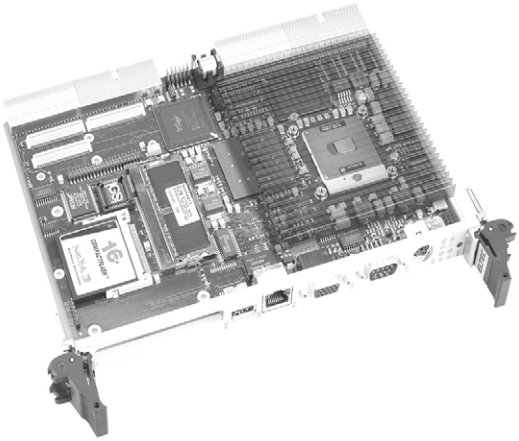
Options

The following options of the EUROCOM 258 are available for OEM product versions:
Transparent bridge only (i21154); this CompactPCI bridge is fully functional for master-only CPU boards.
One or both Ethernet ports can be equipped with 10/100 Mb capability (i82551ER).
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 can be supplied on-board.

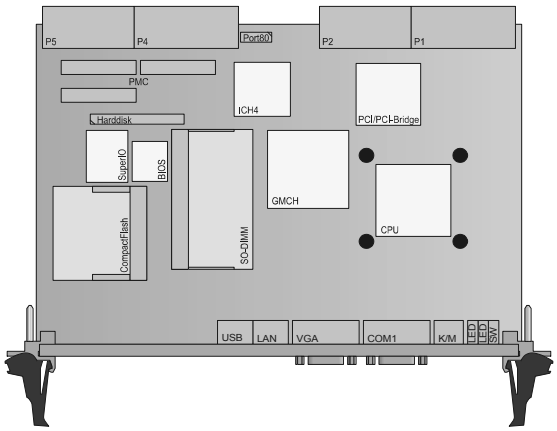
Documentation

- Free Internet

Please contact your local sales office for detailed information.



Parts Placement



Front Panel