

EUROCOM 148

Pentium III Real-Time VMEbus CPU x86 Basic Automation Board

- Universal PC platform on the VMEbus
- Pentium III CPU
- Optimized for real-time applications

III Main Features

- Pentium III VMEbus CPU board
- PC-compatible
- Intel Pentium III, up to 1266 MHz
- Intel 815 chip set
- Double Eurocard format / single slot, passive cooling (optional)
- 64 to 512 MB SDRAM
- 128 / 256 / 512 kB on-chip second level cache
- PCI local bus, 32-bit, 33MHz
- IDE hard disk controller
- Compact Flash slot on IDE
- 10/100/1000 Mb/s network interface (1000BaseT).
- Optional dual 10/100 MB/s network interface
- Graphics on-board
- On-board PMC mezzanine board slot
- Two serial channels with hardware hand-shake
- One 16-bit programmable timer
- Keyboard and mouse interface
- USB Interface

III Technical Details

The EUROCOM 148 is an Intel Pentium III-class single-board computer with a VMEbus interface, optimized for embedded real-time applications, while maintaining full PC compatibility.

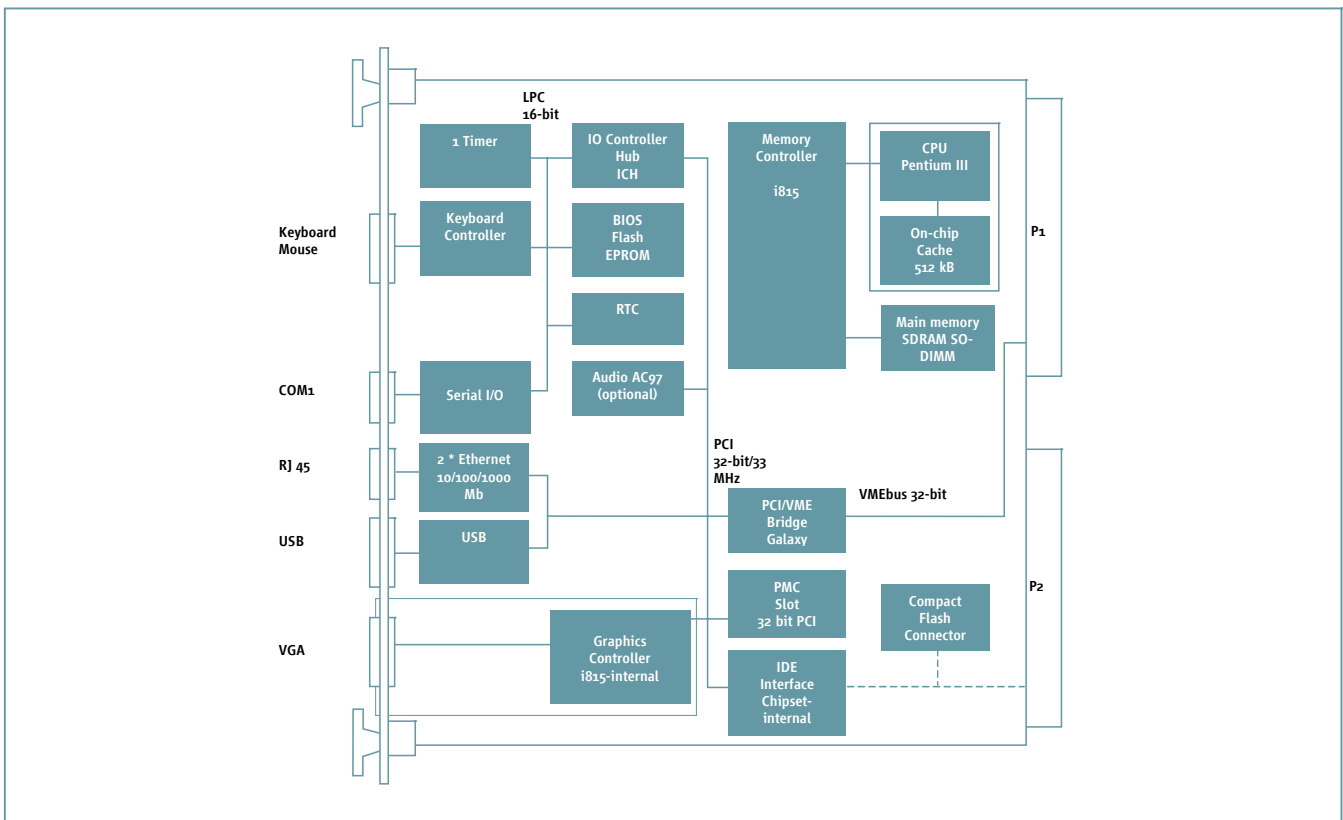
This is the ideal platform for industrial applications with real-time operating systems, extending ELTEC's successful BAB product line for Intel CPUs.

CPU

Intel socket 370 processors such as the Pentium III at 1.266 GHz are supported. The CPU has FPU, MMU and second level cache. Host bus speed is 133 MHz for the Pentium III. The standard version of the EUROCOM 148 has a 1266-MHz PIII mounted to the board.

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

CPU type	CPU clock (MHz)	Cache (kB)	FSB (MHz)
Pentium III	850-1266	256/512	100/133
Celeron	566-1200	128/256	66/100



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.

Memory Configuration

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

Firmware

The BIOS (General Software) is stored in a Boot-Block Flash-EPROM which enables easy BIOS updates. Boot from floppy, IDE, CD, and network is supported.

Graphics Interface

The graphics interface of the EUROCOM 148 is the graphics controller of the 815 chip set. It can display up to 1280*1024 pixels in true color (32 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 IDE port with Ultra DMA/66 transfer. IDE is routed to the P2. A Compact Flash connector is supplied for alternative on-board use. All types of common 3,5" Floppy drives are supported.

Ethernet Interface

The network interface uses the network controller i82541PI for 10/100/1000 Mb/s connectivity with the 10/100/1000BaseT (twisted pair), 100BaseTX or 1000BaseT standards. 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. One USB-Port is provided. The parallel printer port is optional; if used, the floppy interface is no longer available.

VMEbus Interface

The VMEbus interface is implemented with ELTEC's PCI-to-VME interface chip implementing most of the Tundra Universe II features, except for DMA support. It has 8 PCI/VME and 2 VME / PCI windows in the 4 GB address range. It features FIFOs for write posting, Master and Slave transfer modes such as BLT, ADO, RMW, A32/A24/A16, D64(MBLT), D32/D16/D8 and a full VMEbus system controller.

VMEbus TAS transfers are not supported in EUROCOM 148 memory when accessed from VME.

A software driver for Windows 2000/XP (WDM) is supplied for most VMEbus transfer modes, including several block transfers (BLT).

Watchdog / Timers

The EUROCOM 148 has an on-board watchdog for operator-less environments. One timer has programmable 16-bit counters, clocked with 2.083 MHz.

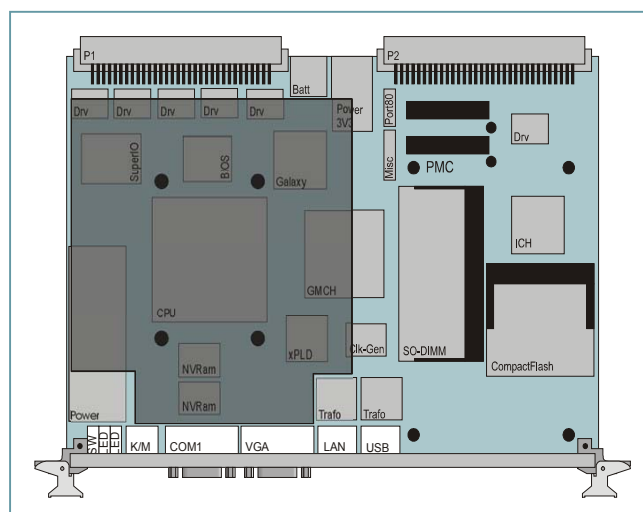
PMC

An on-board PCI extension for one PMC board is provided. It can be used to plug in an additional PMC board, such as SCSI, graphics, I/O, network interfaces.

Operating Systems

Software support includes all standard PC software such as: Windows 2000, Windows XP as well as Linux and VxWorks.

Miscellaneous



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III Specifications

Environmental Conditions

- Storage Temperature: -20 °C - 70 °C
- Operating Temperature: 0 °C - 45 °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. 5,5A typ. at +5 VDC ± 5 %, (for the 850 MHz version)
- 100mA max. 30mA typ. at + 12 VDC ± 10 %
- 100mA max. 30mA typ. at - 12 VDC ± 10 %

MTBF Values

- 19662 hrs (computed after MIL HDBK-217E),
263474 hrs (realistic value from industry standard experience)
- CE Compliance (industrial)

I/O Compatibility

Front panel

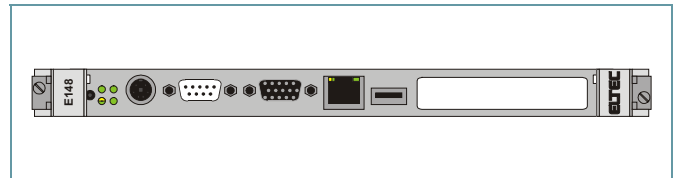
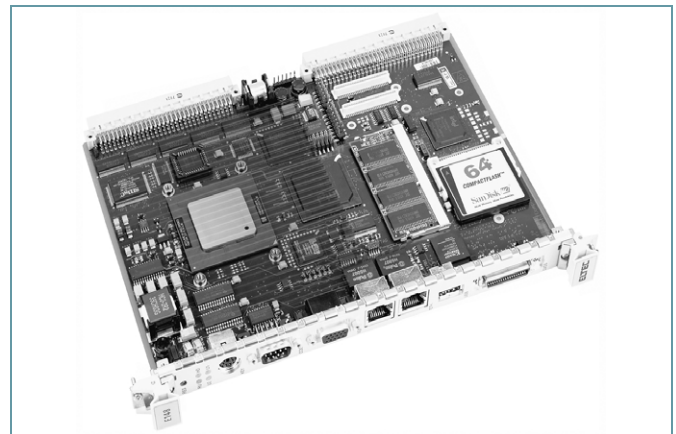
Keyboard/Mouse	Mini-DIN, 6-pin	PS/2-Keyboard and – with ELTEC Splitadapter – PS/2-Mouse
COM1	Min-D, 9-pin	serial port 1 (RS232)
VGA	Min-D, 15-pin	VGA port for standard monitors and displays
LAN	RJ-45	1000BaseT-interface
USB	USB-A	USB 1.1 interface

Rear I/O (P2)

E-IDE	Secondary E-IDE (UDMA 66)
Floppy	Standard floppy port
Parallel	Optional (there is no floppy port when using parallel port)
Keyboard	PS/2-Keyboard
Mouse	PS/2-Mouse
Speaker	PC-Speaker
Drive-LED	Activity for E-IDE (primary or secondary)
E-IDE	Secondary E-IDE (UDMA 66)

On-board

COM2	Serial port 2 (RS232)
IrDA	IrDA 1.1
AC97	AC97 sound interface
Timer	Output of 16-bit timer (2.083 MHz)



Documentation

- Free Internet

Please contact your local sales office for detailed information.