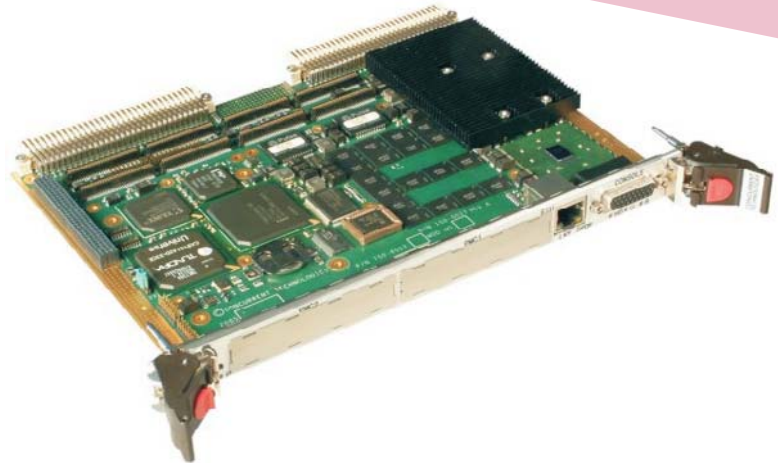


Intel® Pentium® M Processor Dual PMC Embedded Controller



APPLICATIONS

The VP 337/02x is a PC-compatible high performance, high functionality VME processor board supporting the 1.8 GHz Intel® Pentium® M Processor 745 or the 1.4 GHz Intel® Pentium® M processor Low Voltage 738. This single slot board features 2 PMC sites, 1 Gbyte of soldered DDR ECC SDRAM and a variety of interfaces including an option for an on-board Hard Disk Drive, CompactFlash™ or Hitachi GST MicroDrive™. The VP 337/02x is suitable for a range of demanding

applications within the defense, industrial control, telecomms, telemetry, scientific and aerospace markets. To simplify the board's integration many popular industry standard operating systems are supported. The board is plug compatible with the VP 335/02x family and rear plug compatible with the VP 110/01x family. The VP 337/02x-U is the RoHS compliant version of the VP 337/02x family.

HIGHLIGHTS

- 1.8 GHz or 1.4 GHz Intel Pentium M Processor:
 - 64 Kbytes L1 cache
 - 2 Mbytes L2 cache
 - no CPU fan needed; low power processor
- 1.6 GHz Pentium M processor (1 Mbyte L2 cache) and 1.0 GHz ULV Celeron M (512 Kbytes L2 cache) versions available; see VP 335/02x-U datasheet
- 1 Gbyte of 333 MHz DDR ECC SDRAM
- High performance EIDE interfaces with optional on-board disk drive or optional dual CompactFlash or MicroDrive carrier (in a single slot)
- 2 x PMC module interfaces (32/64-bit and 33/66 MHz):
 - expansion carrier for 2 more PMC sites
- 1 x 10/100/1000 Mbps Ethernet interface
- 64 Mbytes of Application Flash EPROM
- 512 Kbytes of BIOS Flash EPROM
- High resolution graphics interface
- Keyboard and mouse interfaces
- 1 x serial channel interface
- 1 x Universal Serial Bus (USB 2.0) interface
- Floppy disk interface
- Long duration timer, watchdog timer
- VME-64 interface supporting A32/A24/A16/D64/D32/D16/D8(E0), MBLT64 and with support for fast hardware byte-swapping
- Single slot
- Extended temperature versions available:
 - -25°C to +70°C (E-Series)
 - -40°C to +85°C (K-Series, includes humidity sealant)
 - supporting 1.4 GHz processor
- Support for VxWorks®, Linux®, Windows NT®, Windows® 2000, Windows® XP Embedded, RTX®, Windows® XP, QNX®, Solaris™, LynxOS® and MS-DOS®

Central Processor

- Two processor versions available
- 1.8 GHz Intel® Pentium® M processor 745:-
 - uses µFC-PGA 478 (micro Flip-Chip Pin Grid Array) package
- 1.4 GHz Intel® Pentium® M processor Low Voltage 738:-
 - uses µFC-BGA 479 (micro Flip-Chip Ball Grid Array) package
- Common processor features are:-
 - 64 Kbytes of primary (L1) on-die cache
 - 2 Mbytes of secondary (L2) on-die cache
 - 400 MHz Front Side Bus (FSB)
- 1.6 GHz Pentium M processor (1 Mbyte L2 cache) and 1.0 GHz ULV Celeron M (512 Kbytes L2 cache) versions available; see VP 335/02x-U datasheet
- no CPU fan
- utilizes 64-bit Intel® 855GME chipset:-
 - supports 400 MHz bus frequency
- utilizes Intel® 6300ESB I/O Controller Hub
- ITP debug port

DRAM

- supporting 1 Gbyte of 333 MHz DDR ECC SDRAM soldered on the board
- single bit error correction; double-bit error detection
- accessible from processor or VME bus

EIDE Hard Disk Interfaces

- supports up to Ultra-DMA 100 for high performance drives
- two channels (primary and secondary)
- primary channel is accessible via P2 connector (see note 2):-
 - connects to an optional hard disk/flash/CD-ROM drive board
- secondary channel can be used for on-board disk drive or dual CompactFlash/MicroDrive Type II drive carrier

Ethernet Interface

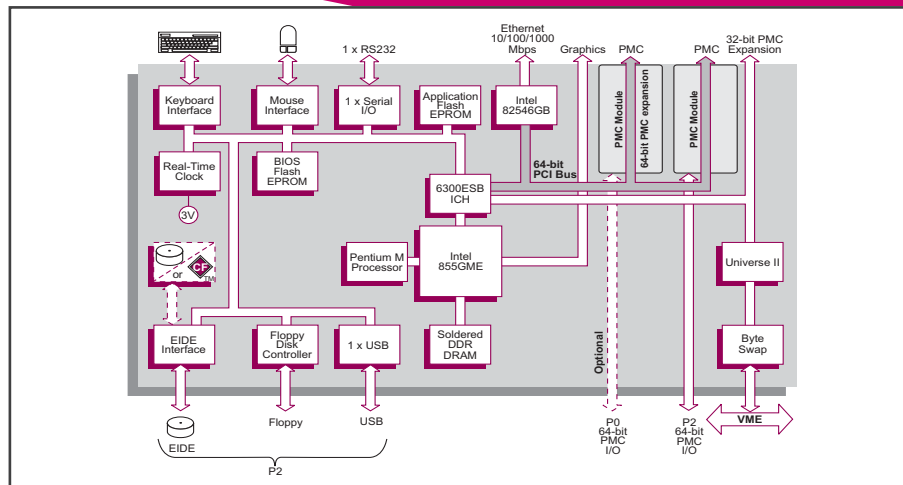
- implemented by Intel® 82546GB LAN Controller via 64-bit/66 MHz PCI bus
- supporting 10Base-T, 100Base-TX and 1000Base-T:-
 - accessed via front panel RJ45

Graphics Interface

- implemented by the Intel® 855GME GMCH host bridge providing:-
 - resolutions up to 2048 x 1536 @75Hz
 - up to 16M colors
- VGA interface accessed via a 26-way high-density connector on front panel

PMC Interfaces

- 2 x PMC sites and for both sites:-
 - I/O via front panel, via P2 for site 1 and optionally via P0 for site 2
 - 32/64-bit and 33/66 MHz PCI operation
 - 3.3V or 5V PCI signaling
- expansion to optional dual PMC carrier board:-
 - using expansion connector (32-bit/33 MHz)
 - or using one baseboard PMC site (64-bit/66 MHz)



Serial Interface

- 1 x serial channel interface
- 16550 compatible UART
- front panel access:-
 - 1 x RS232 via 26-way high density connector

Flash EPROM

- 64 Mbytes Application Flash EPROM
- 512 Kbytes of BIOS Flash EPROM

Other Peripheral Interfaces

- PC-compatible Real Time Clock (Year 2000 compliant)
- floppy disk interface via P2 connector (see note 2)
- 1 x USB 2.0 interface via P2 connector (see note 2)
- keyboard and mouse interfaces accessed via a 26-way high-density connector on front panel
- watchdog timer
- 1 x 32-bit Long Duration Timer with processor interrupt capability

Software Support

- support for VxWorks, Linux, Windows NT, Windows 2000, Windows XP Embedded, Windows XP, RTX, QNX, Solaris, LynxOS and MS-DOS

Firmware Support

- PhoenixPico BIOS™
- comprehensive Power-On Self-Test (POST)
- LAN boot firmware included

VME Interface

- implemented by Tundra® Universe II™ device
- VME Master/Slave
- A32/A24/A16/D64/D32/D16/D8(E0)/MBLT64
- fast hardware byte swapping
- auto system controller detect
- full interrupter / interrupt handler support
- bus error interrupt hardware

Safety

- PCB (PWB) manufactured with flammability rating of 94V-0

Electrical Specification

- +5V@4.4A (typical at 1.8 GHz with 1 Gbyte DRAM)
- +12V@0A; -12V@0A
- +12V and -12V routed to both PMC sites and PMC expansion connector

Environmental Specification

- operating temperatures:-
 - 0°C to +55°C (N-Series: 1.8 GHz, 1.4 GHz)
 - 25°C to +70°C (E-Series: 1.4 GHz)
 - 40°C to +85°C (K-Series: 1.4 GHz)
- 10% to 90% Relative Humidity, non condensing (operating):-
 - K-Series includes humidity sealant
- 40°C to +85°C (storage)
- 10% to 90% Relative Humidity, non condensing (storage)

Mechanical Specification

- 6U form-factor
- single VME slot - front panel width 0.8inch (20.3mm)
- utilizes 160-way DIN connectors for P1 and P2:-
 - compatible with normal 96-way DIN connectors
- optional P0 (for VME64x backplanes only)
- shock:
 - 20g, 11ms, ½ sine (operating);
 - 30g, 11ms, ½ sine (non-operating)
- vibration:
 - 5Hz-2000Hz at 2g, 0.38mm peak displacement (operating);
 - 5Hz-2000Hz at 5g, 0.76mm peak displacement (non-operating)

Note 1: selected variants are supplied with VME64x handles

Note 2: 5-row backplane is required to provide P2 access to USB, EIDE and floppy disk interfaces

ORDERING INFORMATION

Order Number	Product Description (Hardware)
VP 337/020-xyU	1.4 GHz Pentium M with 2 PMC sites
VP 337/021-xyU	1.8 GHz Pentium M with 2 PMC sites

AD CP1/DR1-zz2	2.5 inch Hard Disk Drive Assembly
AD 200/001-01	Dual CompactFlash/MicroDrive Carrier
AD CRz/PMC-zzU	PMC Carrier Boards for 2 PMC modules
CB 26D/124-00	VGA, Keyboard, Mouse, RS232 connector cable
DS MSS/001-zzU	Board with HDD, CD-RW/DVD, CompactFlash

Replace the order number suffix (-xy) with selections from the following:
Where x = P2/P0 Breakout combinations

1 - 3-row, P2 = PMC1 64-bit I/O	1 - reserved
2 - 5-row, P2 = PMC1 64-bit I/O, 1 x USB, Floppy, EIDE, P0 = PMC2 64-bit I/O	2 - reserved
3 - 5-row, P2 = PMC1 64-bit I/O, 1 x USB, Floppy, EIDE	3 - 1 Gbyte

Where y = memory size

For z options please contact your local sales office

For extended temperature, E-Series, K-Series, please contact your local sales office