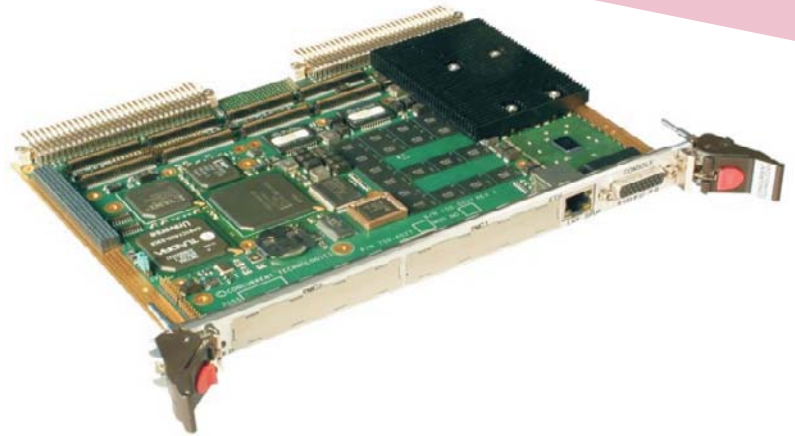


Intel® Pentium® M or Intel® Celeron® M Processor Dual PMC Embedded Controller



APPLICATIONS

The VP 335/02x is a PC-compatible high performance, high functionality VME processor board supporting the 1.6 GHz Intel® Pentium® M Processor. For lower power applications the board supports the Intel® Celeron® M processor Ultra Low Voltage 373. 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 335/02x is suitable for a range of

demanding applications within the defense, industrial control, telecomms, telemetry, scientific and aerospace markets. Options to operate in harsh temperatures, ranging from -40°C to +85°C are available. To simplify the board's integration many popular industry standard operating systems are supported. The board is rear plug compatible with the VP 110/01x family. The VP 335/02x-U is the RoHS compliant version of the VP 335/02x family.

HIGHLIGHTS

- 1.6 GHz Intel Pentium M Processor or 1.0 GHz Intel Celeron M processor Ultra Low Voltage 373:
 - 64 Kbytes L1 cache
 - up to 1 Mbyte L2 cache
 - no CPU fan needed; low power processor
- 1.8 GHz or 1.4 GHz processor versions (2 Mbytes L2 cache) also available; see VP 337/02x-U datasheet
- Up to 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 version available:
 - -25°C to +70°C (E-Series)
 - -40°C to +85°C (K-Series, includes humidity sealant)
 - supporting 1.0 GHz processor
- Support for VxWorks®, Linux®, Windows NT®, Windows® 2000, Windows® XP Embedded, Windows® XP, RTX®, QNX®, Solaris™, LynxOS® and MS-DOS®

Central Processor

- 1.6 GHz Intel® Pentium® M Processor:-
 - using a µFC-PGA 478 (micro Flip-Chip Pin Grid Array) package
 - 1 Mbyte of secondary (L2) on-die cache
- 1.0 GHz Intel® Celeron® M Processor Ultra Low Voltage 373:-
 - using a µFC-BGA 479 (micro Flip-Chip Ball Grid Array) package
 - 512 Kbytes of secondary (L2) on-die cache
- common processor features are:-
 - 64 Kbytes of primary (L1) on-die cache
 - 400 MHz Front Side Bus (FSB)
 - no CPU fan
- 1.8 GHz and 1.4 GHz processor versions (2 Mbytes L2 Cache) available; see VP 337/02x-U datasheet
- 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

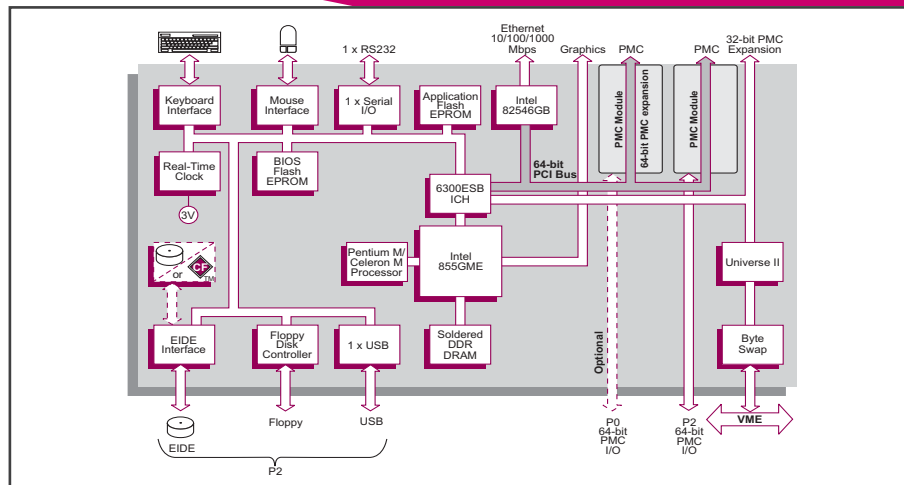
- implemented by Intel® 82546GB LAN Controller via 64-bit/66 MHz PCI bus
- supporting 10Base-T, 100Base-TX and 1000Base-T:-
 - accessed via front panel RJ45

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 UART
- 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

- Phoenix® 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@4.1A (typical at 1.6 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: up to 1.6 GHz)
 - -25°C to +70°C (E-Series: 1.0 GHz)
 - -40°C to +85°C (K-Series: 1.0 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

ORDERING INFORMATION

Order Number	Product Description (Hardware)
VP 335/021-xyU	1.0 GHz Celeron M ULV 373 with 2 PMC sites
VP 335/022-xyU	1.6 GHz Pentium M with 2 PMC sites
AD CP1/DR1-z2	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
- 2 - 5-row, P2 = PMC1 64-bit I/O, 1 x USB, Floppy, EIDE, P0 = PMC2 64-bit I/O
- 3 - 5-row, P2 = PMC1 64-bit I/O, 1 x USB, Floppy, EIDE

Where y = memory size

- 1 - 512 Mbytes (Celeron M only)
- 2 - reserved
- 3 - 1 Gbyte (Pentium M only)

For z options please contact your local sales office

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