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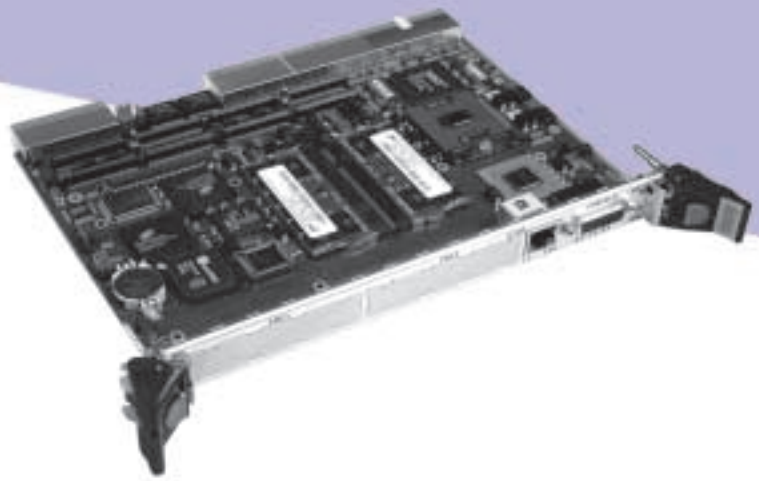
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CompactPCI

PP 312/01x

Intel® Pentium® M Processor 745 Intelligent Dual PMC Carrier



APPLICATIONS

The PP 312/01x is a PC-compatible high performance, high functionality, dual PMC CompactPCI® board supporting the 1.8 GHz Intel® Pentium® M processor 745. The PP 312/01x will operate in a system slot, a peripheral slot or independently from the CompactPCI bus. High-performance networking is provided by two Gigabit Ethernet links, and the board is compliant to the PICMG® 2.16 specification. Full system monitoring is provided by the PICMG 2.9 compliant IPMI interface. To simplify the board's integration many popular industry standard operating systems are supported. The PP 312/01x is suitable for a range of high-performance applications within the industrial control, telecomms, telemetry, scientific and aerospace markets. The board is plug compatible with the PP 310/01x family.

HIGHLIGHTS

- 1.8 GHz Intel Pentium M processor 745:
  - 64 Kbytes L1 cache
  - 2 Mbytes L2 cache
  - no CPU fan needed; low power processor
- Single slot (for all option combinations)
- Up to 2 Gbytes of DDR DRAM (with ECC)
- 2 x PMC module interfaces (32/64-bit at 33/66 MHz)
- High performance EIDE interfaces with optional on-board disk drive or optional CompactFlash™/Microdrive™ interface
- 2 x 10/100/1000Mbps Ethernet interfaces
- Dual Gigabit Packet Switching Backplane (PICMG 2.16)
- Graphics interface
- 32 Mbytes of Application Flash EPROM
- 512 Kbytes of BIOS Flash EPROM
- 512 Kbytes of battery backed SRAM
- CompactPCI controller:
  - operates in system slot or peripheral slot
  - 32/64-bit at 33/66 MHz CompactPCI interface
- Option to bypass CompactPCI bus (Satellite Mode)
- IPMI (Intelligent Platform Management Interface):
  - PICMG 2.9 (System Management Specification)
- Keyboard and Mouse interfaces
- Up to 3 x RS232 serial channel interfaces:
  - 1 or 2 on-board
  - 2 on optional Transition Module
- Watchdog timer and Long Duration Timer
- Support for VxWorks®, Windows NT® , Windows® 2000, Windows® XP, Windows® XP Embedded, QNX®, Solaris™ and Linux®
- Optional Transition Module for rear panel I/O:
  - 2 x RS232 channels, Parallel Printer Port and Floppy Disk interfaces included

CONCURRENT TECHNOLOGIES

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Central Processor
- 1.8 GHz Intel® Pentium® M processor 745:-
  - → uses FC-PGA 478 (micro Flip-Chip Pin Grid Array) package
  - → 64 Kbytes of primary (L1) on-die cache
  - → 2 Mbytes of secondary (L2) on-die cache
  - → 400 MHz Front Side Bus (FSB)
  - → no CPU fan
- utilizes 64-bit ServerWorks' GC-LE chipset
- provision for ITP debug port

DRAM
- supporting up to 2 Gbytes DDR ECC SDRAM:-
  - → up to 2 Gbytes provided via two SODIMM sockets
  - → error correction up to 4-bits
- accessible from Intel Pentium M processor 745 or CompactPCI bus

Hard Disk Interfaces
- EIDE interface:-
  - → supports up to Ultra-DMA 100 for high performance drives
  - → two channels (primary and secondary)
  - → secondary channel can be used for on-board 2.5 inch hard disk drive (within a single slot); or, support for 1 or 2 CompactFlash modules or IBM®/Hitachi Microdrive Type II drives
  - → primary channel is accessible via Transition Module

Ethernet Interfaces
- implemented by Intel 82546EB LAN Controller via 64-bit PCI bus
- two channels supporting 10 Base-T, 100 Base-TX, 1000 Base-T:-
  - → support for PICMG 2.16 R1.0 - Packet Switching Backplane (PSB)
  - → optional support for rear panel RJ45's via Transition Module
- one channel switchable to front panel RJ45, supports 10 Base-T, 100Base-Tx and 1000Base-T

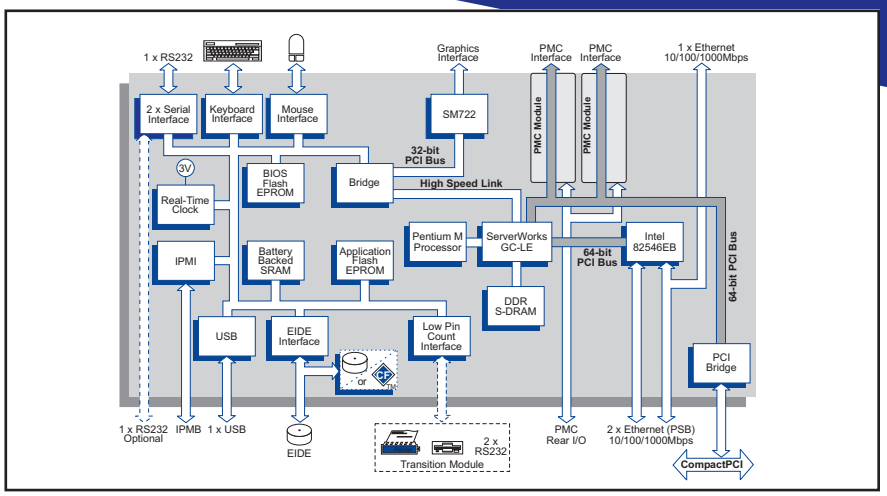
Graphics Interface
- implemented by a Silicon Motion SM722 providing:-
  - → 8 Mbytes video memory
  - → resolutions up to 1280 x 1024; supporting up to 16M colors
- accessed via a 26-way high-density connector on front panel

PMC Interface
- 2 x PMC sites; for both sites:-
  - → I/O via front panel
  - → I/O via J3 and J5
  - → 32/64-bit, 33/66 MHz PCI operation
  - → 3.3V or 5V signaling levels
- Transition Module provides rear I/O for both PMC sites

Firmware Support
- Phoenix ServerBIOS™
- comprehensive Power-On Self-Test (POST)
- LAN boot firmware included

Battery Backed SRAM
- 512 Kbytes battery backed SRAM

Serial Interface
- up to 3 x RS232 serial channels:-
  - → 1 channel via a 26-way high-density connector on front panel
  - → either 1 channel via J5 or 2 channels via optional Transition Module



- 16550 compatible UART
- channels support RI, CTS, RTS, DSR, DTR and DCD

Other Peripheral Interfaces
- keyboard and mouse interfaces accessed via a 26-way high-density connector on front panel
- PC-compatible Real Time Clock (Year 2000 compliant)
- watchdog timer
- system fan monitor; CPU temperature monitor; voltages monitor:-
  - → all accessible via IPMI
- speaker interface
- 1 x USB (Universal Serial Bus) interface via J5 Transition Module
- 1 x 32-bit Long Duration Timer with processor interrupt capability
- LPC (Low Pin Count) bus via J5 to enable the AD PP5/001 Transition Module support for:-
  - → floppy disk interface
  - → parallel printer port interface (ECP, EPP and IEEE1284)
  - → 2 x RS232 serial channels

Flash EPROMs
- 32 Mbytes of Application Flash EPROM - 8-bits wide
- 512 Kbytes of BIOS Flash EPROM - 8-bits wide

Software Support
- support for VxWorks, Windows NT, Windows 2000, Windows XP, Windows XP Embedded, QNX, Solaris and Linux

CompactPCI Interface
- compliant with PICMG 2.0 R3.0; 3.3V or 5V signaling levels:-
  - → universal signaling support
- 33/66 MHz; 32/64-bit interface accessed via J1/J2 connectors
- utilizing a PCI-PCI bridge for off-board accesses
- operates as a System Slot controller or in a Peripheral slot
- PICMG 2.1 R2.0 Hot Swap Specification compatible
- option to disable CompactPCI interface (Satellite Mode):-
  - → receives power from CompactPCI bus
  - → board can be hot swapped in this mode
- J4 connector not fitted

IPMI
- PICMG 2.9 R1.0 (System Management Specification)
- implements the IPMB0 interface
- on-board BMC (Baseboard Management Controller)
- supports 8 Kbytes of non-volatile memory

Electrical Specification
- +5V@3.9A (typical at 1.8 GHz with 512 Mbytes DRAM); +5% / -3%
- +3.3V@6.5A; +5% / -3%
- +12V@0.01A; -12V@0.01A
- +12V and -12V routed to PMC expansion slots

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

Environmental Specification
- 0°C to +55°C (operating)
- 10% to 90% Relative Humidity, non-condensing (operating)
- -40°C to +70°C (storage)
- 10% to 90% Relative Humidity, non-condensing (storage)

Mechanical Specification
- 6U form-factor: 9.2inches x 6.3inches (233mm x 160mm)
- single-slot: 0.8inches (20.3mm)
- connectors: IEC-1076-4-101 for J1-J5
- 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)

ORDERING INFORMATION

Order Number	Product Description (Hardware)
PP 312/011-xy	1.8 GHz Pentium M Processor 745
AD PP5/001-xx	Transition Module
AD 200/001-00	CompactFlash/Microdrive carrier assembly
AD CP1/DR1-xx	2.5 inch Hard Disk Drive assembly
AD HSC/001-02	Board Hot Swap cover (rear mounting)
CB 26D/124-00	26-way HD to VGA, Keyboard, Mouse, RS232 connector cable

Replace the order number suffix (xy) with selections from the following:

where x =	where y =
1 - Ethernet via rear panel	1 - 512 Mbytes
2 - Ethernet via PICMG 2.16	2 - 1 Gbyte
3 - Reserved	3 - 1.5 Gbytes
4 - Ethernet via PICMG 2.16, RS232 via J5	4 - 2 Gbytes

NOTE: compatible with AD PP5/001 Transition Module when x = 1 or 2

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