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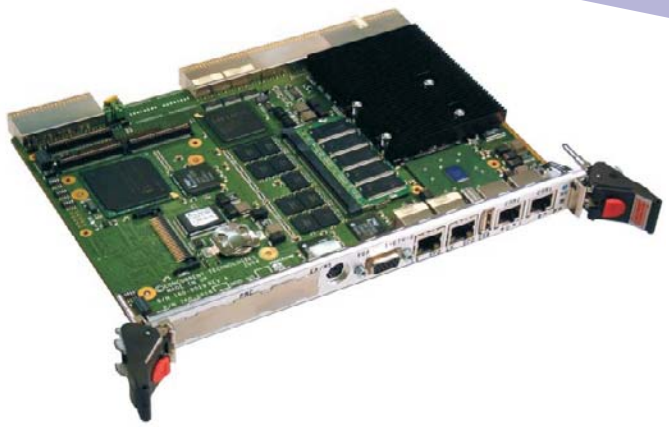
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CompactPCI

PP 300/02x
N - Series

Intel® Pentium® M Processor Slot Controller



APPLICATIONS

The PP 300/02x is a PC-compatible high performance one-slot CompactPCI® single board computer supporting the 1.6 GHz Intel® Pentium® M processor. Featuring a selection of memory options, an optional on-board hard disk drive or CompactFlash™ drive and a variety of interfaces, the board is suitable for a range of applications within industrial control, telecomms, telemetry, scientific and aerospace. Its functionality can be increased through the use of PMC modules. It is fully compliant with PICMG® 2.16 (Packet Switching Backplane) specification. Additionally, very high-performance networking is provided by four Gigabit Ethernet links. To simplify the board's integration many popular industry standard operating systems are supported. Full system monitoring is provided by the PICMG 2.9 compliant IPMI interface. The board is plug compatible with the PP 302/02x family. An RoHS compliant version of this board is available, see PP 300/02x-U datasheet.

HIGHLIGHTS

- 1.6 GHz Intel Pentium M processor:
  - 64 Kbytes L1 cache
  - 1 Mbyte L2 cache
  - no CPU fan needed; low power processor
- 1.8 GHz or 1.4 GHz processor version (2 Mbytes L2 cache) available; see PP 302/02x datasheet
- Single slot (for all option combinations)
- Up to 2 Gbytes of 333 MHz DDR DRAM (with ECC)
- High performance EIDE interfaces with optional on-board disk drive or CompactFlash™/Microdrive™ interface (in a single-slot)
- Two Serial ATA150 (SATA) channels
- Ultra-160 Wide SCSI interface
- Four 10/100/1000Mbps Ethernet interfaces
- Dual Gigabit Packet Switching Backplane (PICMG 2.16)
- PMC module interface (32/64-bit at 33/66 MHz)
- 1 Mbyte of BIOS Flash EPROM
- 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)
- High resolution graphics interface
- PS/2 keyboard and mouse port
- 3 x USB 2.0 interfaces and 2 x RS232 serial channels
- Floppy disk interface
- Watchdog timer
- Support for VxWorks®, Linux®, Windows NT®, Windows® 2000, Windows® XP, Windows® XP Embedded, Solaris™, LynxOS® and QNX®
- Optional Transition Module for rear panel I/O

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Specification

Central Processor
- 1.6 GHz Intel® Pentium® M processor:-
  - → uses µFC-PGA 478 (micro Flip-Chip Pin Grid Array) package
  - → 64 Kbytes of primary (L1) on-die cache
  - → 1 Mbyte of secondary (L2) on-die cache
  - → 400 MHz Front Side Bus (FSB)
  - → no CPU fan
- 1.8 GHz or 1.4 GHz processor version (2 Mbytes L2 cache) available; see PP 302/02x datasheet
- utilizes 64-bit Intel® 855GME chipset:-
  - → supports 400 MHz bus frequency
  - → uses Intel® 6300ESB I/O Controller Hub

DRAM
- supporting up to 2 Gbytes 333 MHz DDR ECC SDRAM:-
  - → up to 1 Gbyte soldered onboard
  - → up to 1 Gbyte provided via a SODIMM socket
  - → single bit error correction
- accessible from Pentium or CompactPCI bus

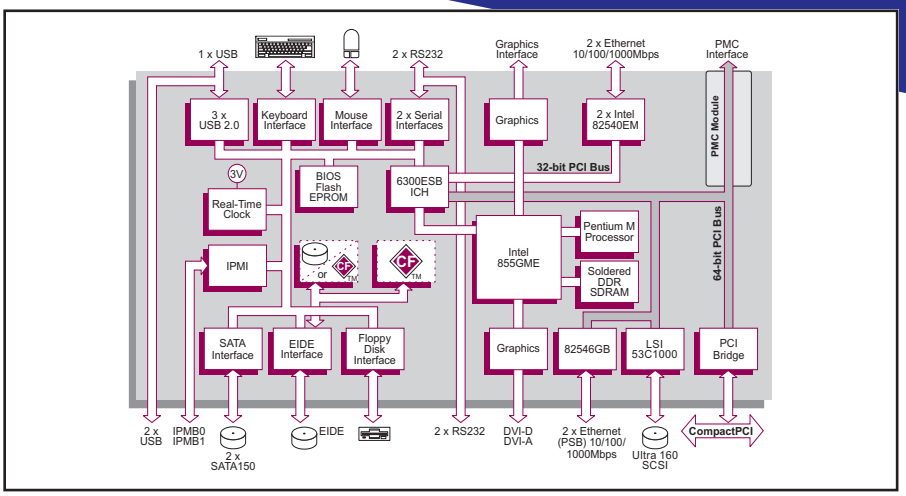
Hard Disk Interfaces
- EIDE interface:-
  - → supports Ultra-DMA 100 for high performance drives
  - → two channels (primary and secondary)
  - → secondary channel can be used for on-board 2.5 inch disk drive or, support for 1x (on-board socket) or 2x (using AD 200/001) CompactFlash or Microdrive™ Type II drives
  - → primary channel is accessible via Transition Module
- Serial ATA150:-
  - → two channels accessible via J5
  - → transfer rate up to 150 Mbytes/s
- Ultra-160 Wide SCSI:-
  - → accessible via Transition Module
  - → implemented by an LSI 53C1000

Ethernet Interfaces
- four channels supporting 10 Base-T, 100 Base-TX, 1000Base-T:-
  - → front channels implemented by 2 x Intel® 82540EM LAN controllers via 32-bit PCI bus
  - → rear channels implemented by Intel® 82546GB LAN Controller via 64-bit PCI bus
- 2 x channels accessed via J3 and 2 x channels via front panel RJ45 connectors:-
  - → support for rear panel RJ45 connectors via Transition Module
- support for PICMG 2.16 R1.0 - Packet Switched Backplane (PSB)

PMC Interface
- single PMC site:-
  - → I/O via front panel
  - → 32/64-bit, 33/66 MHz PCI operation
  - → 3.3V signaling levels

Flash EPROM
- 1 Mbyte of BIOS Flash EPROM - 8-bits wide

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



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

Graphics Interface
- implemented by the Intel® 855GME GMCH:-
  - → resolutions up to 2048 x 1536 @75Hz
  - → up to 16M colors
- accessed via a VGA connector on front panel or via J5 (DVI-A)
- DVI-D interface supported via J3

Serial Interface
- 2 x RS232 serial channels:-
  - → accessed by 2 x RJ45 connectors on front panel or via Transition Module
- each channel supports CTS, RTS, DSR, DTR and DCD via front panel and Transition Module; RI supported via Transition Module
- 16550 compatible UART

Other Peripheral Interfaces
- keyboard and mouse interfaces via a single PS/2™ type connector on front panel or via Transition Module
- PC-compatible RTC (Year 2000 compliant)
- floppy disk interface via Transition Module
- 3 x USB (Universal Serial Bus 2.0) interfaces:-
  - → one via front panel
  - → two via Transition Module
- watchdog timer
- system fan monitor; CPU temperature monitor; voltages monitor:-
  - → all accessible via IPMI
- speaker interface

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
- utilizes a PCI-PCI bridge for off-board accesses
- PICMG 2.1 R2.0 Hot Swap Specification
- operates as a System Slot controller or in a Peripheral Slot
- 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 Interface
- PICMG 2.9 R1.0 (System Management Specification):-
  - → implements the IPMB0 interface
  - → implements an IPMB1 interface
- on-board Baseboard Management Controller
- supports 8 Kbytes of non-volatile memory

Electrical Specification
- +5V@3.6A (typical with 512 Mbytes DRAM); +5% / -3%
- +3.3V@2.3A; +5% / -3%
- +12V@0.05A; -12V@0.05A
- +12V and -12V routed to PMC expansion slot

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

Environmental Specification
- operating temperatures:-
  - → 0°C to +55°C (N-Series)
- 10% to 90% Relative Humidity, non condensing (operating)
- -40°C to +85°C (storage)
- 10% to 90% Relative Humidity, non condensing (storage)
- for the RoHS compliant version of this board, see PP 300/02x-U datasheet

Mechanical Specification
- 6U form-factor: 9.2 inches x 6.3 inches (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 300/022-xy	1.6 GHz Pentium M Processor
AD PP4/00z-zz	Transition Module
AD 200/001-01	CompactFlash/Microdrive carrier assembly
AD CP1/DR1-z2	2.5 inch Disk Drive assembly
AD HSC/001-04	Board Hot Swap cover (rear mounting)

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

where x =
1 - Ethernet via rear panel
2 - Ethernet via PICMG 2.16

where y =
1 - 512 Mbytes
2 - 1 Gbyte
3 - 1.5 Gbytes
4 - 2 Gbytes

For z options please contact your local sales office:

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Specification subject to change; E and OE. This product includes some components which are lead free (Pb free).

Datasheet Code 1466/0606
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