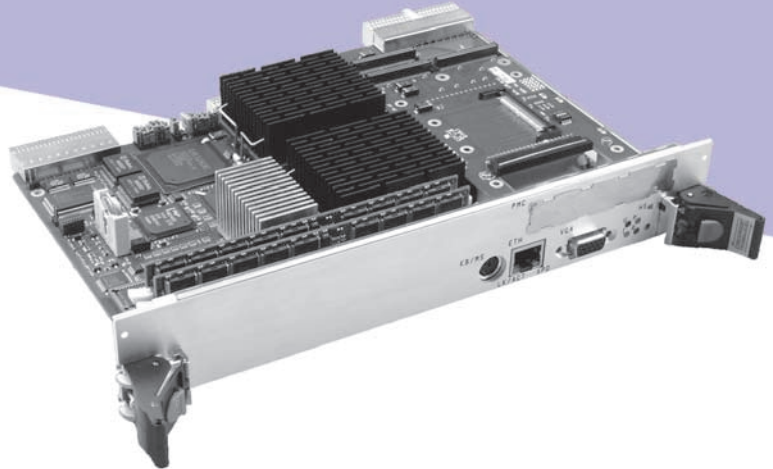


Dual Intel® Xeon™ Processors Single Board Computer



APPLICATIONS

The PP 220/01x is a PC-compatible high performance based CompactPCI® processor board supporting two Low Voltage Intel® Xeon™ processors. Featuring a selection of memory options, an optional on-board hard disk drive and a variety of interfaces, the board is suitable for a range of high-performance applications within the industrial control, telecomms, telemetry, scientific and aerospace markets. Its functionality can be

further increased through the use of PMC modules. High-performance networking is provided by dual Gigabit Ethernet links and the board is fully compliant with the PICMG® 2.16 (Packet Switching Backplane) specification. 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.

HIGHLIGHTS

- Dual 2.0 GHz Low Voltage Intel Xeon processors:
 - Intel® Pentium® 4 processor architecture
 - on-die L1 cache
 - 512 Kbytes on-die L2 cache
 - hyper threading, Netburst™ Microarchitecture
 - no CPU fan required
- Up to 4 Gbytes DDR SDRAM (with ECC)
- 1 x PMC module interface (32/64-bit at 33/66 MHz)
- High performance Ultra 160 SCSI interface
- High performance EIDE interfaces with option for an on-board disk drive
- CompactFlash™ site for CompactFlash card or IBM®/Hitachi Microdrive™
- 2 x 10/100/1000Mbps Ethernet interfaces
- Dual Gigabit Packet Switching Backplane (PICMG 2.16)
- High resolution graphics interface
- 2 x USB ports
- 512 Kbytes 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)
- Keyboard and Mouse interfaces
- 2 x asynchronous RS232 serial channels
- Watchdog timer
- Optional blank front panel (see PP 220/11x datasheet)
- Optional Transition Module for rear panel I/O
- Support for Windows NT®, Windows® 2000, Windows® XP, VxWorks®, Linux® and QNX®

Central Processors

- dual 2.0 GHz Low Voltage Intel® Xeon™ processors
- each processor:-
 - internal (L1) on-die cache
 - 512 Kbytes of secondary (L2) on-die cache
 - hyper-threading technology
 - NetBurst Microarchitecture
 - no CPU fan
- utilizes 64-bit ServerWorks® GC-LE chipset:-
 - supports 400 MHz processor bus to give peak bandwidth of 3.2 Gbytes/s

DRAM

- supporting up to 4 Gbytes of 200 MHz DDR ECC SDRAM:-
 - up to 4 Gbytes provided via two 184-pin DIMM sockets
 - DIMM modules fitted in pairs
 - error correction up to 4-bits
 - peak bandwidth of 3.2 Gbytes/s
- accessible from Xeon processor or CompactPCI bus

Hard Disk Interfaces

- EIDE interface:-
 - supports up to Ultra-DMA 100 for high performance drives
 - 2 x channels (primary and secondary)
 - secondary channel can be used for on-board 2.5 inch disk drive and/or support for 1 CompactFlash or IBM®/Hitachi MicroDrive™ Type II drive. Note : 2.5 inch disk drive occupies the PMC site
 - primary channel is accessible via J5 to the Transition Module
- Ultra 160 SCSI:-
 - implemented by a LSI53C1000R controller via 64-bit/66 MHz PCI bus
 - accessible via J3 to the Transition Module

Ethernet Interfaces

- 2 x channels supporting 10Base-T, 100Base-TX, 1000Base-T
- implemented by Intel® 82546 LAN Controller via 64-bit/66 MHz PCI bus
- support for PICMG 2.16 - Packet Switching Backplane (PSB)
- both channels available via J3:-
 - one channel is switchable between front panel RJ45 connector and J3
- optional support for rear panel RJ45's via the Transition Module

Graphics Interface

- implemented by an Asilant Technologies' 69030 providing:-
 - 4 Mbytes video memory
 - resolutions up to 1600 x 1200
 - supporting up to 16M colors
- analog interface via front panel connector
- DVI-D flat panel interface supported via J3 to the Transition Module

PMC Interface

- 1 x PMC slot with I/O via front panel:-
 - 3.3V signaling
 - supports 32/64-bit, 33/66 MHz PCI operation

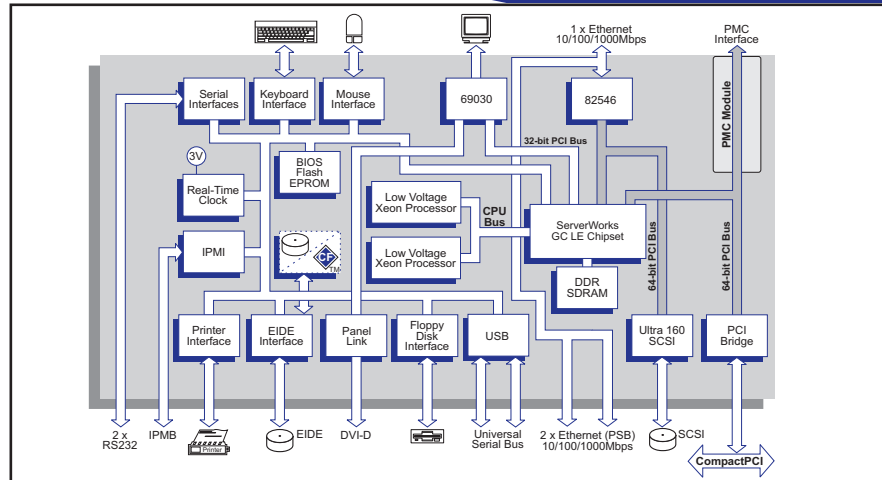
ORDERING INFORMATION

Order Number	Product Description (Hardware)
PP 220/012-xy	Dual 2.0 GHz Low Voltage Xeon Processors
AD PP4/001-10	Transition Module with COM2 D9 connector plus CompactFlash connector
AD PP4/001-11	Transition Module with COM2 D9 connector plus 1.8 inch Hard Disk Drive
AD PP4/001-20	Transition Module with DVI-I connector plus CompactFlash connector
AD PP4/001-21	Transition Module with DVI-I connector plus 1.8 inch Hard Disk drive
AD CP1/DR1-xx	2.5 inch Disk Drive assembly

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

where x =	where y =
1 - Ethernet via rear panel	0 - reserved
2 - Ethernet via PICMG 2.16	1 - 1 Gbyte
	2 - 2 Gbytes
	3 - 4 Gbytes

For blank front panel version, see separate PP 220/11x datasheet



Serial Interface

- 2 x RS232 serial channels
- 16550 compatible UART
- accessed via J5 to the Transition Module
- each channel supports CTS, RTS, RI, DSR, DTR and DCD

Other Peripheral Interfaces

- keyboard and mouse interfaces, sharing a single PS/2™ type connector on front panel or via J5 to the Transition Module
- PC-compatible Real Time Clock (Year-2000 compliant)
- floppy disk interface via J5 to the Transition Module
- 2 x USB (Universal Serial Bus) interfaces accessed via J5 to the Transition Module
- parallel printer port interface (ECP, EPP and IEEE1284) via J5 to the Transition Module
- watchdog timer
- system fan monitor; two CPU temperature monitors; voltages monitor; board temperature monitor:-
 - all accessible via IPMI
- speaker interface

Flash EPROM

- 512 Kbytes of BIOS Flash EPROM - 8-bits wide

Firmware Support

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

Software Support

- support for Windows NT, Windows 2000, Windows XP, VxWorks, Linux and QNX

CompactPCI Interface

- compliant with PICMG 2.0 R3.0; 3.3V and 5V signaling levels:-
 - universal signaling supported
- 33/66 MHz; 32/64-bit interface accessed via J1/J2 connectors
- utilizing a PCI-PCI bridge for off-board accesses
- PICMG 2.1 R2.0 Hot Swap Specification Compatible as hot swap controller only
- J4 connector not fitted

- operates as a System Slot controller or in a peripheral slot
- option to disable CompactPCI interface (Satellite Mode):-
 - use in any slot
 - receives power from CompactPCI bus
 - board can be hot swapped in this mode

IPMI

- PICMG 2.9 R1.0 (System Management Specification)
- implements the IPMB0 interface
- on-board BMC (Baseboard Management Controller)
- auxiliary IPMB interface to J2 (IPMB1)
- supports 32 Kbytes of non-volatile memory

Electrical Specification

- +5V@16A (typical with dual CPU and 2 Gbytes DRAM); +5% / -3%
- +3.3V@8A; +5% / -3%
- +12V@0.0A; -12V@0.0A
- +12V and -12V routed to PMC expansion slot

Safety

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

Environmental Specification

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

Mechanical Specification

- 6U form-factor: 9.2inches x 6.3inches (233mm x 160mm)
- dual slot: 1.6 inches (40.6mm); for blank panel see PP 220/11x
- 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)