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CP620
PowerPC
6U CompactPCI CPU



Fast

Reliable

Versatile

CompactPCI

- Tailored to perfectly match the needs of demanding single- and multiprocessing applications.
- Based on the low power IBM750CXE, the CP620 is a space- and power dissipation optimized design.
- The answer to the requirements of challenging Telecom/Datacom and rugged Industrial applications.

kontron

More performance, less power consumption
Impossible ? ...

The CP620 CompactPCI board is tailored to perfectly match the needs of demanding single- and multiprocessing applications.

Based on the IBM PPC750CX(E) microprocessor, the CP620 brings a new level of performance and versatility to telecom/datacom and embedded industrial applications.
With advanced 0.18µm copper technology, the 750CXE is a superior high-performance processor especially for power and cost sensitive applications.

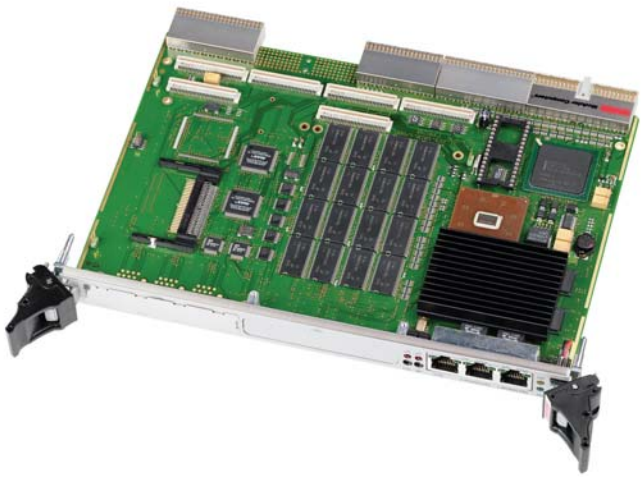
Flexibility is another major strength of the well thought out CP620 design. The board is equipped with direct soldered SDRAM with ECC up to 1GB and is therefore able to handle memory consuming tasks but may also be configured for slim embedded applications. Soldered Flash memory of 4 or 8 MByte are available to host non-volatile operating system and application code. In addition, CompactFlash discs (type 1 or 2) can be used when a shock/vibration resistant file system is required.

Two PMC sockets provide a means to adapt the CPU easily to the distinct I/O needs from different application areas. Dual Fast Ethernet and 4 configurable serial ports round out the feature set and make the board a universal platform adaptable to multiple customer demands.

The CP620 as a system master supports hotswap of peripheral boards.

A fast TCP/IP connection to other CPUs in the same system can be established easily due to the full PICMG2.16 compliance.

The Intelligent Platform Management Interface Specification (IPMI) provides the ability to monitor system facilities, generate and log events, determine when to send alarms and perform actions based on system status. The CP620 can optionally be ordered with IPMI support to offer a variety of system management features.



Specifications

... PowerPC is the solution

Processor

IBM PPC750CX(E), thermally enhanced PBGA
400 - 600 MHz
256 KB full speed L2 on-die cache, passive heat sink

Memory

128 MByte up to 1 GByte soldered SDRAM with ECC (100MHz)
4/8 MB soldered onboard Flash
Optional CompactFlash™, type 1 or 2 module

I/O

Two 16C550 compatible DUARTs providing four serial interfaces
Two Fast Ethernet ports, Intel® 82559, 10/100Base-TX

PMC slot

Two PMC sockets with rear I/O support
32-bit / 33 MHz interface, 3.3V / 5V compatible

Front Panel Functions

Ethernet:	two RJ-45 connectors
COM1:	RJ-45 (RS232)
COM1/2/3/4	RJ-45 (2xRS232, 2xRS232/485), (one PMC version only)
LED's:	two times LAN activity, link and speed, hotswap
Reset:	Reset button, guarded
Abort:	Abort button, guarded

On-board Interfaces

CompactFlash™ socket, type II
DIL32 socket for use with 512 kB NV-SRAM, EPROM or Flash memory

CompactPCI Bus Interface

PICMG 2.0 Rev. D3.0 compliant
PICMG 2.16 R1.0 compliant
32 or 64-bit/33 MHz
Universal signaling voltage (3,3V, fits 3,3V or 5V bus)

Supervisory Functions, Clock/Calendar

Watchdog, software configurable, generates exception, NMI or hardware reset
Processor temperature sensor LM75
RTC and CMOS RAM backed up by goldcap capacitor (data retention ~ 5 days), battery optional

Rear I/O via J3/(J4)/J5

All onboard and front panel interfaces are also routed to the rear side:
Two PMC modules, COM1-4, Ethernet1/2 PICMG2.16 compliant, IMPI controller.
COM2/3/4 are only accessible through rear I/O (TTL), a version with 1 PMC slot and 4 front panel COM interfaces is available on request.

IPMI (optional)

Onboard independent IPMI compliant baseboard management controller (BMC) with Zircon LT controlling all onboard voltages, processor temperature and external fans if connected to the rear I/O interface.

Compliancy

CompactPCI Core Specification PICMG 2.0 Rev. 3.0
CompactPCI Hot Swap Specification PICMG 2.1 R2.0
CompactPCI System Management PICMG 2.9 R1.0
CompactPCI Packet Switching Backplane PICMG 2.16 R1.0

General

Dimensions:	233 x 160 x 20.5 mm, 6U, 4HP
Weight:	400 g
MTBF:	119.700h

Software Support

Operating system independent bootloader supporting download and programming of operating system and application software via Ethernet/Internet or serial line.
Board support package for VxWorks
Board support package for Linux

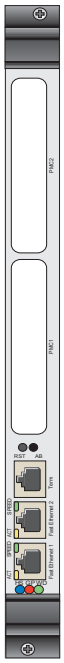
Power Consumption

+5V:	3W
+3.3V:	5W
typically at 400 MHz/128 MB	
+5V:	6W
+3.3V:	7,5W
typically at 600 MHz/512 MB	
+/-12V (connected to PMC)	

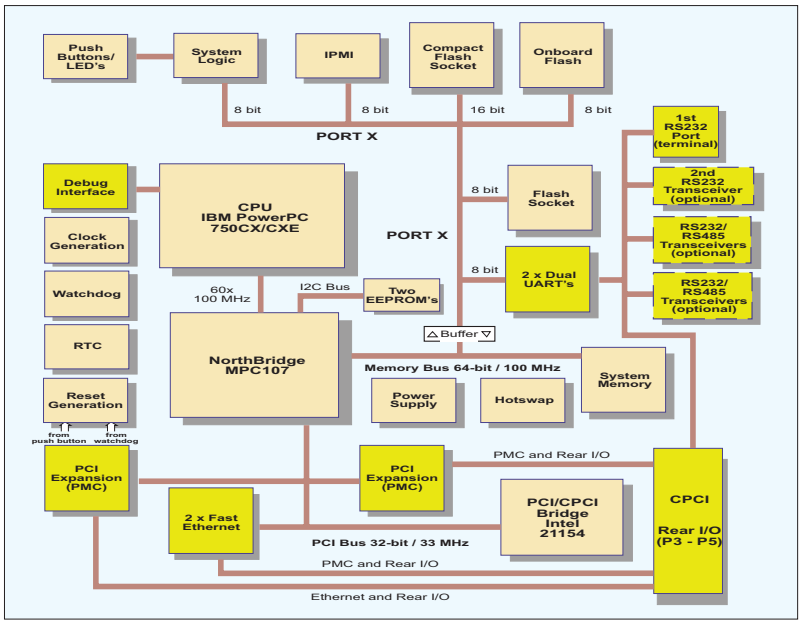
Environmental

Operating temperature:	0°C to +60°C (standard)
Storage temperature:	-55°C to +95°C
Operating humidity:	0% to 90% non-condensing
Altitude limit:	50,000 ft. (15,240 m)

Frontpanel



Functional Block Diagram



Ordering Information

Product	Description	Order No.
CP620[1)]	System Master, IBM PPC750CXE 600 MHz, 512 MByte SDRAM, 8 MB Flash, Ethernet PICMG2.16 compliant	24093
CP620[1)]	System Master, IBM PPC750CXE 600 MHz, 512 MByte SDRAM, 8 MB Flash, Ethernet on front panel	24791
CF128[2)]	128 MB CompactFlash disc, type 1	23441
CF512[2)]	512 MB CompactFlash disc, type 1	24230
PMC-HDD1	PMC Hard disk module with 2,5" HDD	24397
VXW-BSP-CP620	VxWorks Board Support Package	23445
LIN-BSP-CP620	Linux Board Support Package	23446
KIT-CP620	Hardware user's manual in PDF format on CD-ROM, distribution independent	24094

Note:
1) All variants available PICMG2.16 compliant (backplane Ethernet) or with front panel connection
2) If a PMC module is applied in the upper socket, only type 1 cards can be used
IPMI available only on request

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