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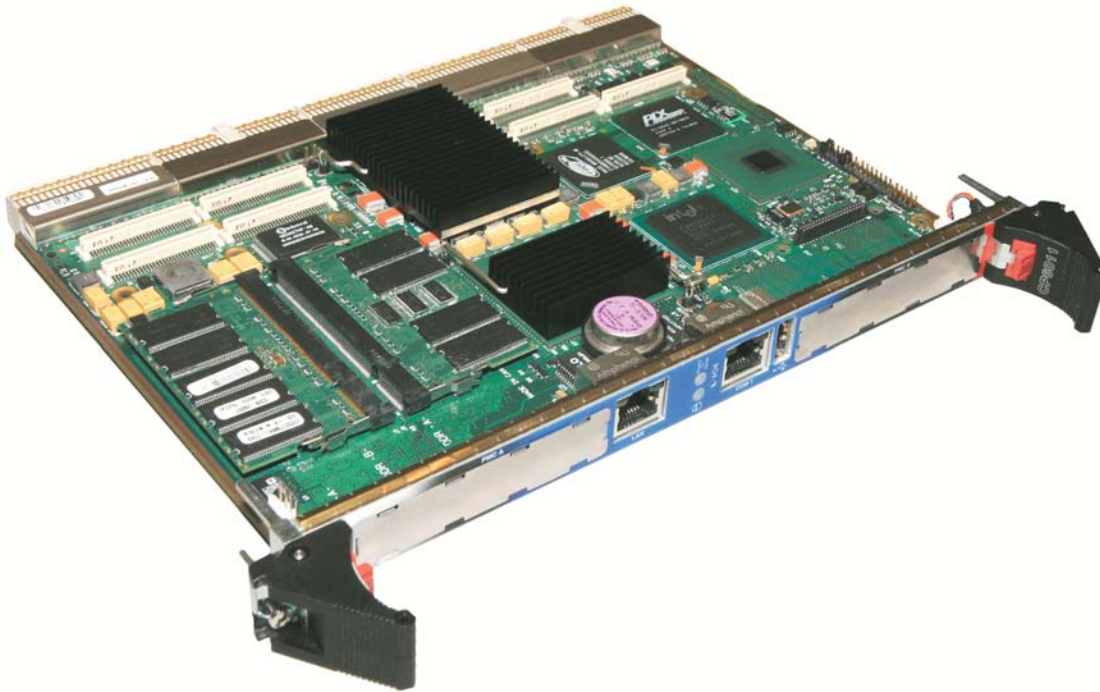
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# CP6011

## Intel Pentium-M with E7501 and Dual PMC 6U CompactPCI CPU



**Outperform**

**Be Flexible**

**Stay Sharp**



## CompactPCI

- ▶ Combine Low Power and High Performance with Intel Pentium-M processors available at 1.1GHz, 1.6GHz, 1.8GHz and 2.0GHz PCU speeds in 4HP form factor
- ▶ Memory throughput 50% faster with the Pentium-M 2.0GHz processor with 533 MHz FSB
- ▶ Maximize I/O throughput with E7501 server chipset and Dual PICMG 2.16 Gigabit Ethernet
- ▶ Increase your flexibility with dual PMC slots with up to 64-bit/133MHz PCI-X interface and PIM support

## Impossible requirements?

## Don't change the requirements...

### Outperform

The CP6011 is without a doubt the most powerful CompactPCI CPU engine you can get in a single slot (4HP). Its use of the Intel Pentium-M (and Low Voltage Pentium-M) processors at 1.6GHz, 1.8GHz and 2.0GHz (and 1.1GHz) and future speeds when they become available guarantees performance and high density. The low power features of the Pentium-M processor makes it possible to fit in a single slot and therefore potentially doubles overall system density. Combined with a high I/O throughput chipset like Intel's E7501 and up to 2GB of DDR memory distributed over two separate channels for increased memory bandwidth, this board is designed to meet the requirements of the most demanding applications. The CP6011 has two SODIMM sockets (with Registered / ECC support) for a better combination of flexibility, capacity and cost efficiency. The CP6011, with a 533 MHz FSB, got a gain of 1.5 on the dual channel memory throughput.

### Benefit From Flexibility

Finding the product that exactly matches all application requirements can be a difficult task. Kontron, however, made it easier by offering the CP6011 with two PMC slots that can be populated with Kontron or third party products. The wide acceptance of the PMC standard and the availability of several different flavors of PMC will allow customers to easily tailor the CP6011 to their requirements in a very short amount of time. The first high performance PMC slot (up to 64-bit/133MHz PCI-X) also supports the PMC I/O Module (PIM) standard, thus allowing the access of the PMC I/O signals on Kontron's rear transition module (RTM). The second PMC slot has an interface that can reach up to PCI-X 64-bit/66MHz.

The CP6011 has Dual Gigabit Ethernet 2.16-compliant ports and a third 100Base-T Ethernet port on the front panel for management or other purposes. Additional Gigabit Ethernet ports and Ultra160/320 SCSI can be added through Kontron PMC cards (respectively PMC240 and PMC261). CP6011 also has VGA support through

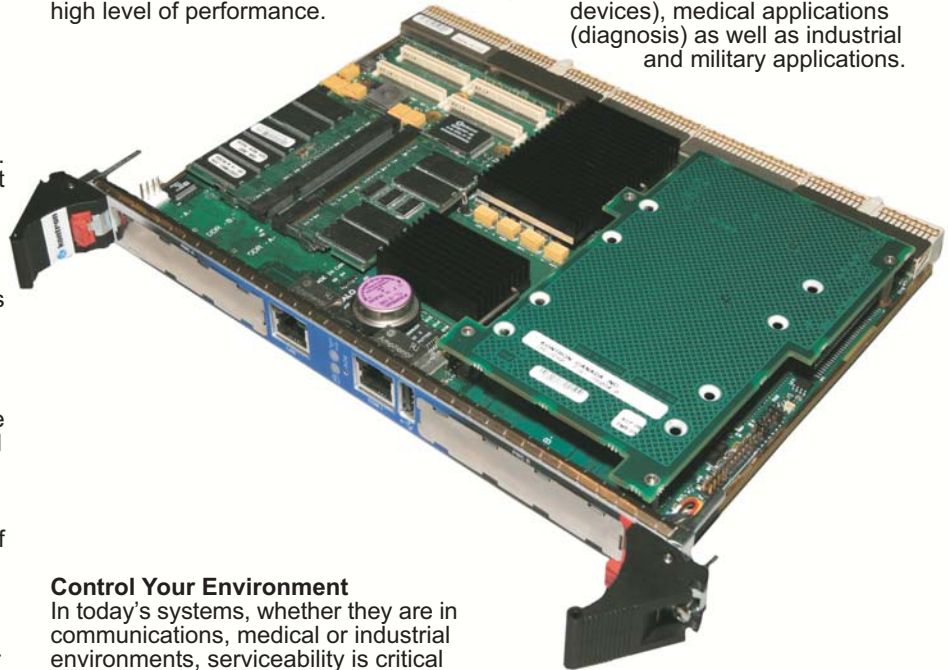
the use of ATI's Mobility-M graphics chip. It also features CompactFlash support, ATA/100 and programmable user LED's for software use.

The CP6011 is capable of driving a cPCI bus segment that can scale from 32-bit/33MHz to 64-bit/133MHz PCI-X. The universal cPCI bridge allows the CP6011 to be used as a system (transparent) or peripheral (non-transparent) on the cPCI bus, or simply disconnected from the bus (satellite). Since the chipset has two independent 64-bit/133MHz PCI-X buses, it ensures that a board driving an external bus, two PMC's and the dual Gigabit Ethernet, will maintain a high level of performance.

management capabilities; the XL-VHDS (10U carrier class platform) and the XL-LP41 (4U low profile platform).

### The Best Fit

As a powerful, very flexible and high density CPU engine, the CP6011 is intended for applications calling for distributed high processing capabilities and tremendous I/O throughput. Those are likely to be VoIP applications (Softswitch, Media Gateway, Signalling Gateway, trunking, call centers and IVR), wireless infrastructure applications (Base Stations Controller/RNC, SGSN/GGSN, SCP, HLR/VLR, billing, wireless access gateway), datacom applications (database management, routing devices), medical applications (diagnosis) as well as industrial and military applications.



### Control Your Environment

In today's systems, whether they are in communications, medical or industrial environments, serviceability is critical and the ability to manage an entire system remotely is often an obligation. The groundwork for such an environment is the Intelligent Platform Management Interface (IPMI). The CP6011 includes a Baseboard Management Controller (BMC) that incorporates Kontron's IPMI firmware, which allows the board to act as an IPMI BMC or as a satellite in one of Kontron's High Availability platforms. Kontron's Xtreamlink family of system products includes two platforms with such

## Specifications

### ... learn about the tremendous feature set

#### Processor

- Single Pentium-M® Processor at 1.6GHz, 1.8GHz or at 2.0GHz
- Single Pentium-M® LV Processor at 1.1GHz
- 1M L2 on-die cache for the 1.6GHz and 1.1GHz
- 2M L2 on-die cache for the 1.8GHz and 2.0GHz
- Passive heatsink

#### Chipset

- Intel E7501 (Pluma MCH) and south bridge Intel's ICH3-S
- Front Side Bus : 400 / 533 MHz, 64-bit
- Large I/O bandwidth : Two 64-bit/133MHz PCI-X bus plus one 32-bit/33MHz bus

#### Memory

- Up to 2GB on 2 x 200-pin latching SO-DIMM sockets
- Two DDR channels 72-bit/200MHz for Interleave operation
- PC-1600/PC-2100 DDR, Registered SDRAM non-ECC/ECC mode (ECC error correction up to a nibble, error detection for more than a nibble)

#### CompactPCI Bus Interface

- Universal bridge, system, peripheral or stand alone operation.
  - Master 3.3V (optional) at up to PCI-X 64-bit/133MHz
  - Master 5V (optional) at PCI 64-bit/33MHz
  - Peripheral 3.3V or 5V depending on the master card.

#### PMC slot

- PMC A: Up to 64-bit/133MHz PCI-X (3.3V & 5V VIO)
- PMC B: Up to 64-bit/100MHz PCI-X (3.3V & 5V VIO)
- PMC I/O module (PIM) support through J4

#### Flash Memory

- 1MB BIOS (field upgradable with BIOS mezzanine)
- 32Kb user serial EEPROM

#### I/O

I/O controller: Winbond super I/O

Description	Front Plate	Rear I/O	Mezzanine	Total
Video	-	1	-	1
USB	1	2	-	3
Serial	1	2	-	2
PS/2 Mouse	-	1	-	1
PS/2 Keyboard	-	1	-	1
Ethernet (F/R)	1	2	2*	5
Hard Disk	-	2	1*	3
SCSI (optional)	-	-	2*	2
CompactFlash	-	-	1*	1
Floppy	-	1	-	1
Reset Button	1	-	-	1

\* Various combinations of mezzanine options are possible.

F/R	Front or Rear
Video	PCI video controller (ATI Mobility-M) with 4 MB video memory Supports CRT with resolution up to 1600 x 1200, 65K colors
USB	USB 1.1 compliant
Serial	COM2 configurable as RS-232/RS-422/485
Ethernet	10Base-T/100Base (Intel 82551) on faceplate and 10Base-T/100Base/1000Base-T (Intel 82544) on rear I/O Two optional Gigabit Ethernet port available on PMC
Hard Disk	PCI EIDE Ultra DMA/100, Rear I/O: Channel 1 Onboard: Channel 0
SCSI	Dual Channel Ultra 160/320 SCSI, LVD/SE based on LSI 53C10XX using PMC
Compact Flash	Can be installed on EIDE channel 0 through the onboard connector

#### Clock

- Real-time clock with 256 bytes battery backup CMOS RAM

#### BIOS

- Phoenix BIOS in Boot Block Flash with recovery code
- Save CMOS in Flash option
- Boot from LAN and from USB capability
- Auto configuration, extended setup
- Onboard peripheral can be enabled or disabled by software and VGA by jumper
- Diskless, keyboardless, and videoless operation extensions
- System, video and LAN BIOS shadowing
- Programmable memory wait states
- HDD S.M.A.R.T. support
- Advanced Configuration and Power Interface (ACPI 1.0), Intelligent System Monitoring (advanced thermal management such as resume, overheat alarm and auto slow down)
- Setup console redirection to serial port (VT100 mode) with CMOS setup access

#### Supervisory

- Support of a system management interface via an IPMI V1.5 compliant controller
- Two-stage software programmable watchdog timer, time out from 16 msec to 4.5 min
- Silicon Serial ID TAG for unique board identification accessible via software
- Hardware system monitor (voltages, temperature), CPU temperature monitor / alarm; board temperature sensor, power failure / low battery detector; SMBus
- Current monitoring using IPMI

#### OS Compatibility

- Windows® 2000, Windows® XP, Windows® Server 2003, Linux, FreeBSD and other OSs

#### Mechanical

- 6U (10.5") x 6.3" x 4HP, Standard cPCI 6U board

#### Compliance

- CompactPCI Core Specification PICMG 2.0 R3.0
- 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

#### Power Requirements

- Supply Voltage Vcc =+3.3V +5% -3%, +5V +5% -3%, +12V ±5%, -12V ±5%

	2.0GHz	1.8GHz	1.6GHz	1.1GHz
• ICC +5V:	8.8 A max.	5.6 A max.	7.4 A max.	3.4 A max.
• ICC +3.3V:	4.2 A max.	6.1 A max.	5.9 A max.	5.9 A max.
• ICC +12V:	0.3 A max.	0.3 A max.	0.3 A max.	0.3 A max.
• ICC -12V:	< 10mA	< 10mA	< 10mA	< 10mA

#### Environmental

	Operating	Storage and Transit
<b>Temperature:</b>	0-50°C/32-122°F	-40 to +70°C/-40 to 158°F
<b>Humidity:</b>	5% to 90% @40°C/104°F non-condensing	5% to 95% @ 40°C/104°F non-condensing
<b>Altitude*:</b>	4,000 m / 13,123 ft	15,000 m / 49,212 ft
<b>Shock:</b>	30G, half-sine, 11ms each axis	Bellcore GR-63-CORE Section 4.3
<b>Vibration:</b>	1.0G, 5-500Hz each axis	2.0G, 5-50Hz; 3.0G, 50-500Hz each axis

\* Designed to meet

#### Reliability

- MTBF: > 134 000 hours @ 25°C / 77°F (Telcordia SR-332, Issue 1)
- USB voltage protected by an active breaker
- Mouse / keyboard voltage protected by self-resetting fuses
- Whole board protected by active breaker

#### Safety/EMC

Meet or exceed:

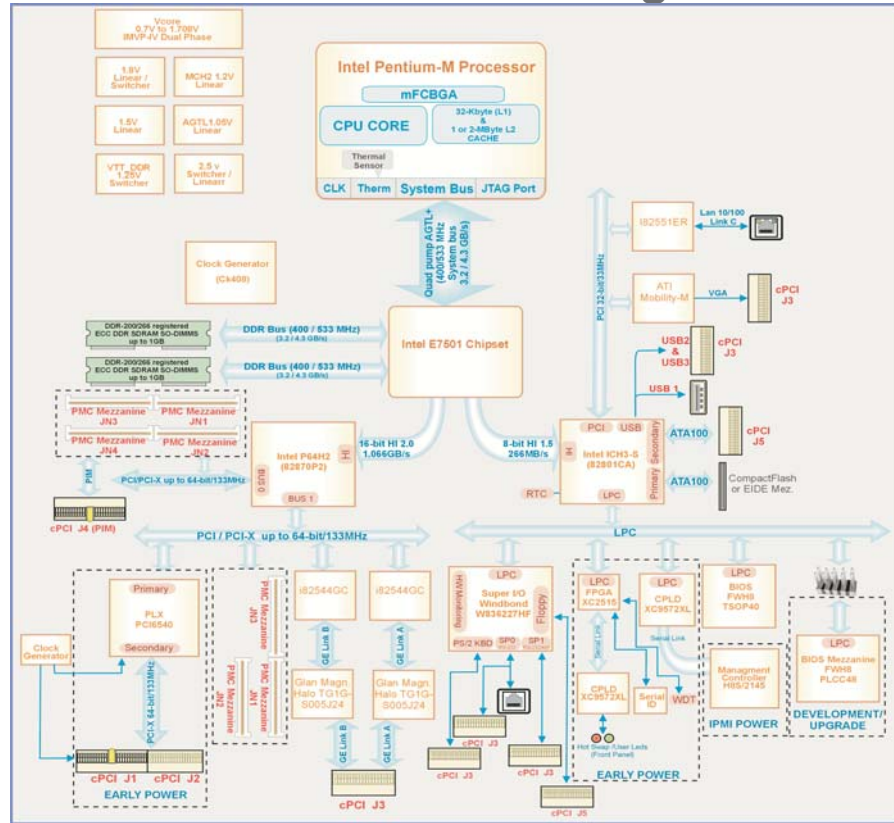
**Safety:** UL 60950 3rd ed.; CSA C22.2 No. 60950-00; EN 60950; IEC 60950-1  
**EMI/EMC:** FCC 47 CFR Part 15, Class B; CE Mark to EN55022/EN55024

- 2 year limited warranty

## Frontpanel



## Functional Block Diagram



## Ordering Information

Product	Description <sup>1</sup>	Order No.
CP6011	Pentium-M 2.0GHz, 2GB	T6011DA##A_1-80000
CP6011	Pentium-M 1.8GHz, 2GB	T6011CA##A_1-80000
CP6011	Pentium-M 1.6GHz, 1GB	T6011AA##A_1-75000
CP6011	Pentium-M 1.6GHz, 2GB	T6011AA##A_1-80000
CP6011	LV Pentium-M 1.1GHz, 512MB	T6011BA##A_1-70000
CP6011	LV Pentium-M 1.1GHz, 1GB	T6011BA##A_1-75000
CP6011	LV Pentium-M 1.1GHz, 2GB	T6011BA##A_1-80000
CP6011	Pentium-M 1.8GHz, 1GB, VIO 5V, 60GB HDD	T6011CC#B#_1-75#AD
<b>More options available, call your Kontron sales representative</b>		
<b>Rear Transition Module (RTM)</b>		
CTM80-2	Single slot (4HP) RTM, SCSI and LAN connectors	T6701AA_1-00
CTM80-2	Single slot (4HP) RTM, SCSI connector and 2.16 configuration	T6701AC_1-00
CTM80-2	Single slot (4HP) RTM, PIM and 2.16 configurations	T6701AD_1-00
CTM80-2	Dual slot (8HP) RTM, PIM and LAN connectors, 1 x 60GB HD	T6701BB_1-AD
Note: <sup>1</sup> higher processor frequencies available in the future		

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