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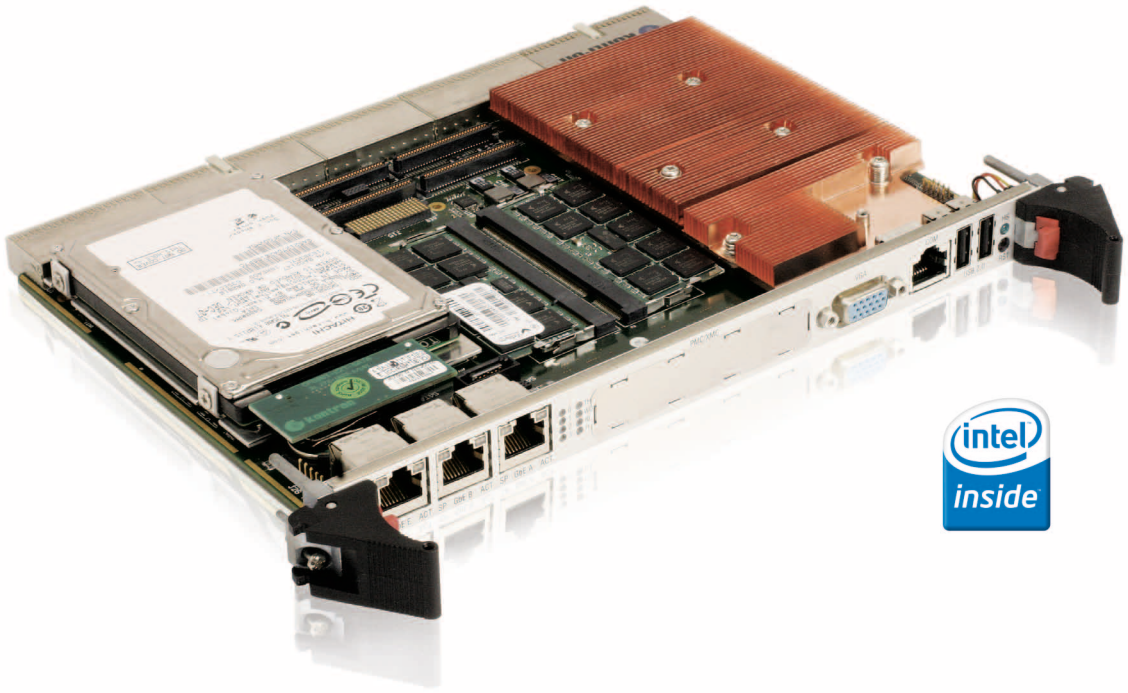
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kontron

» CP6016 «



Intel® Core™2 Duo 6U CompactPCI PICMG 2.16 Processor Blade

» Breakthrough 45nm Technology Processor
Intel® Core™2 Duo Penryn processor, 2.53 GHz, FSB 1066MHz

» Best Performance Through Server Class Chipset
Up to 16 GByte dual-channel, 667MHz Registered DDR2 ECC memory

» Highest Versatility and Excellent Power Management
Comprehensive I/O capabilities: PCIe, GigEthernet, PMC/XMC, USB, VGA, SATA RAID, USB NAND Flash ...

» Broad Software Support
Complete Board Support Packages for On Board Hardware and Toolchain

CP6016

Intel® Core™2 Duo 6U CompactPCI PICMG 2.16 Processor Blade

Benefit from the latest technology that achieves highest processor performance at optimized power consumption. The power of two cores enables virtualization and multi-threading applications to run in full 64-lbit mode using Enhanced Intel® Virtualization, Dynamic Acceleration Technology and SpeedStep®.

Greater Performance / Watt

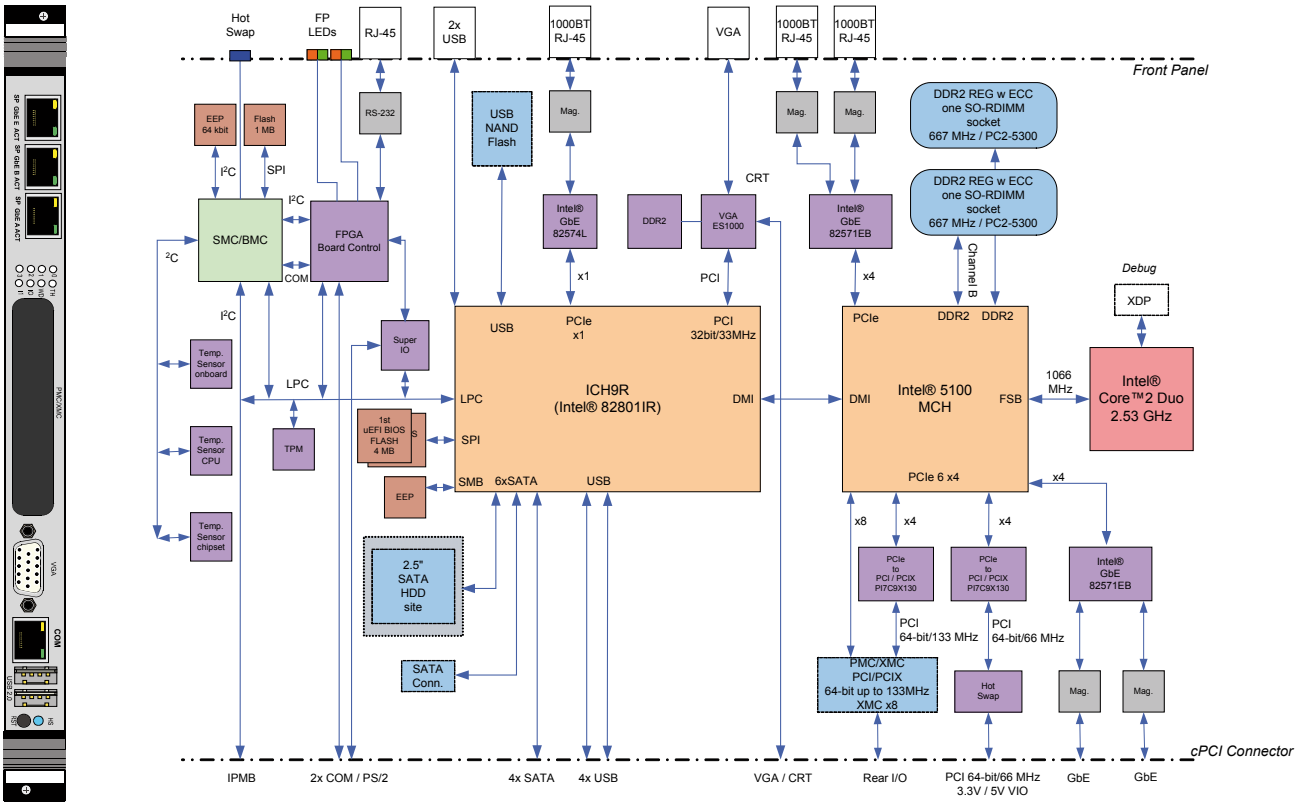
Compared to previous processor designs the 45nm dual-core Penryn technology allows much better performance at similar power consumption.
The PICMG 2.16-compliant Kontron CP6016 offers up to 16 GB dual-channel 667 MHz DDR2 registered ECC memory via two SO-RDIMM sockets, providing up to 8.5 GB/sec data throughput. The CP6016 is designed for bandwidth intensive applications and thanks to hotswap support and IPMI (PICMG 2.9- compliant Intelligent Platform Management Interface) the CPU board meets the highest demands for the management of high-availability applications. Many of these are data and tele-communications applications, but also include highly sensitive, security related solutions as well as image processing systems in medical technology and other vertical industries.

Unique Versatility

The highly integrated CP6016 features a XMC site according to XMC.3 supporting x8 PCI Express (alternatively a 64-bit/ 133MHz PCI PMC site), an onboard 2.5- inch SATA hard disk and USB NAND Flash device - all usable at the same time in a single slot.
The Intel® ICH9R I/O Controller Hub provides advanced I/O technology including USB 2.0 and Serial ATA300. Five independent Gigabit Ethernet ports (3x ports at the front and 2x for full PICMG 2.16 support) provide comprehensive connectivity capabilities, enabling innovative applications today by offering enough room for the emerging next generation requirements. Highly versatile, the CP6016 can be used in a system or peripheral slot. A rich set of LEDs at the front panel for debug and diagnostic, as well as full rear I/O connectivity completes the CP6016.

Longterm Availability

Delivering a stable product based on Intel®'s embedded product line, the CP6016 ensures long term availability. This eliminates the risk of unplanned design changes and unexpected expensive application modification. While minimizing deployment risks, the CP6016 provides a broad range of software support to ease the process of product integration and maximize the competitive advantage of meeting the time-to-market window.



Technical Information

Processor	Intel® Penryn SV Processor in uFBGA package (45 nm manufacturing process) 2.53 GHz, 1066 MHz FSB, 6 MB L2 cache
Memory Controller Hub	Intel® 5100 chipset with dual-channel DDR2 memory controller with ECC, six x4 PCI Express ports
I/O Controller Hub	Intel® ICH9R, 6x SATA II controllers, 7x USB 2.0, one x1 PCI Express, LPC, HDA
Memory	
System Memory	Dual channel registered DDR2 memory with ECC and data speed of 667 MHz per channel, and up to 16 GB on two SO-RDIMM sockets
USB Flash	Up to 8 GB NAND Flash Module
Flash BIOS	Two redundant 4 MByte SPI Flashes
EEPROM	Serial EEPROM (24LC64) 64 kbit
Front Panel Functions	
Gigabit Ethernet	Three 1000BASE-T Ethernet on the FP
Serial Port	One RS232 interface on RJ45 connector
USB interface	Two USB 2.0 ports, 4-pin standard USB host
VGA	One 15-Pin D-Sub connector for analog monitors; ATI ES1000 graphic controller with PCI 32-bit / 33MHz interface
Reset button	One reset button
Micro Switch	For Hot Swap
LEDs	Eight bicolor (red and green) control and status LEDs Two IPMI LEDs One Watchdog and one thermal LED Four GP LEDs One blue hot Swap LED
Onboard Interfaces	
Gigabit Ethernet	Two PICMG 2.16 rear I/O 1000BASE-T ports
SATA	Four ports fixed to rear I/O One port routed to a standard SATA connector One port available for mounting an optional 2.5" HDD
USB NAND Flash	One port available for mounting an optional NAND Flash module
Serial Ports	Two RS232 ports: COM1 routed to front panel and rear I/O COM2 routed to rear I/O only
CPCI Bus	PICMG 2.0 Rev. 3.0 compatible, 64-bit / 66 MHz Universal V(I/O) 5V or 3.3V signalling Operating in system slot as system master and in peripheral slot in PCI passive mode (no communication to CompactPCI bus)
PMC/XMC	One 64-bit / 133 MHz PMC slot, Pn1-Pn4, rear I/O Pn3 to J4, 3.3 volt V(I/O) Alternatively one XMC slot via P15, supporting XMC.3 x8 PCIExpress
Rear I/O	J3: PICMG 2.16, VGA, COM 1/2, keyboard, mouse, 4x USB J4: PMC rear I/O J5: 4x SATA, HDA, battery, fan control
Supervisory Functions, Clock/Calendar	Watchdog, software configurable, 125 msec to 256 sec, generates IRQ or hardware reset. Hardware monitor for thermal control, fan speed, and all onboard voltages RTC battery backup
IPMI	IPMI 1.5-compliant for IPMI based management and CompactPCI System Management PICMG 2.9 R1.0 H8S/2166 controller with on-chip 512 kB Flash and external 8 Mbit SPI Flash
TPM	Trusted Platform Module (TPM) 1.2 for enhanced hardware and software based data and system security

I/O Table Summary

Description	Front I/O	Rear I/O	Onboard Connector	Total
Video CRT VGA	1	1	-	1
USB 2.0	2	4	1 (Flash)	7
HDAudio	-	1	-	1
Serial	1	2	-	2
PS/2 Mouse	-	1	-	1
PS/2 Keyboard	-	1	-	1
Ethernet	3	2	-	5
SATA	-	4	2	6
USB Flash	-	-	1	1
PMC / XMC	-	-	1/1	1/1
FAN control	-	2	-	2
Battery Input	-	1	-	1
SMB	-	1 optional	-	1 optional

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 Designed to meet or exceed: Safety: UL 1950, UL 94, CSA 22.2 No 950, EN 60950, IEC 950 EN 55022 / EN 55024, EN 50081-1 / EN 6100-6-2

Technical Information

MTBF	218070h acc. Bellcore Issue 6 Ground Benign 30°
General	
Dimensions	233 x 160 x 20.5 mm, 6U, 4HP
Weight	900g
Software Support	AMI EFI (BIOS) with POST codes, setup console redirection to serial port (VT100 mode) with CMOS setup access, BIOS parameters saved in EEPROM, diskless, keyboardless, videoless operation LAN boot support Board identification number accessible via EEPROM Support for Windows® XP, XP Embedded, Windows® Server 2003, Linux® (other OSs may be possible, please contact us for information)
Power Consumption	Maximum: 64 watts, typically: =< 50 watts
Environmental	
Operating temp.	0°C to +60°C, passive module heat sink, requires forced airflow cooling
Storage temp.	- 55°C to + 85°C (without battery or HDD)
Climatic Humidity	93% RH at 40°C, non condensing (acc. to IEC 60068-2-78)
Altitude	50,000 ft (15,240 m)

Ordering Information

Article	Order-No.	Description
CPU Boards		
CP6016-2.53-2G	1032-0739	6U 4TE CPCI Core™2 Duo T9400 System Master CPU; 2.53GHz, 6MB L2, 2GB DDR2 667 MHz SO-RDIMM; I/O: 5x GigE, VGA, COM, 7x USB, 6x SATA, USB Flash Sockel, J1-J5
CP6016-2.53-4G	1032-0742	6U 4TE CPCI Core™2 Duo T9400 System Master CPU; 2.53GHz, 6MB L2, 4GB DDR2 667 MHz SO-RDIMM; I/O: 5x GigE, VGA, COM, 7x USB, 6x SATA, USB Flash Sockel, J1-J5
CP6016-2.53-8G	1032-0743	6U 4TE CPCI Core™2 Duo T9400 System Master CPU; 2.53GHz, 6MB L2, 8GB DDR2 667 MHz SO-RDIMM; I/O: 5x GigE, VGA, COM, 7x USB, 6x SATA, USB Flash Sockel, J1-J5
USB-Flash Modules		
FLASH-USB-xxx		NAND-Flash in various capacities
Services		
CP6016-MK2.5SATA [1]	1022-5510	Mounting kit for 2,5" SATA-HDD onboard, mounting within 4HP 1)
Rear Transition Modules		
CP-RIO6-M	1027-4239	4TE Rear I/O Modul for CP6016/CP6001 Sockets for 2x 2.5 inch Hard Disk, extended temperature range -40 to +85°C
CP-RIO6-A	1027-4235	4TE Rear I/O Modul for CP6016 Rear Panel: 2xUSB, 2xGbE, Audio, COM1, VGA, Connectors for USB Flash, 4x SATA, Fan, 0°C to 60°C
CP-RIO6-A216	1027-4236	4TE Rear I/O Modul for CP6016 Rear Panel: 2xUSB, Audio, COM1, VGA, Connectors for USB Flash, 4x SATA, Fan, 0°C to 60°C PIMG2.16 Support
CP-CTM80-3	29973	Various 4HP versions available 2x GbE, 2x COM, VGA, 2x USB, PS/2, Speaker, 2x SATA
Software Support		
KIT-CP6016 [2]	1022-5519	Documentation and 32-bit Windows (XP, Server 2003) driver kit on CD-ROM 2)
WXPE-BSP-CP6016 [2]	1022-6303	Documentation and 32-bit Windows XP EMBEDDED driver kit on CD-ROM 2)
LIN-BSP-CP6016 [2]	1022-5520	Documentation and 32 bit Linux BSP for Suse and RedHat distributions on CD-ROM 2)
(other operating systems)		Other operating systems support kits (e.g. 64bit versions) on project request

[1] HDD must be ordered separately
[2] Free of charge, downloadable from the Internet
Please contact your local sales representative for other configuration options.

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