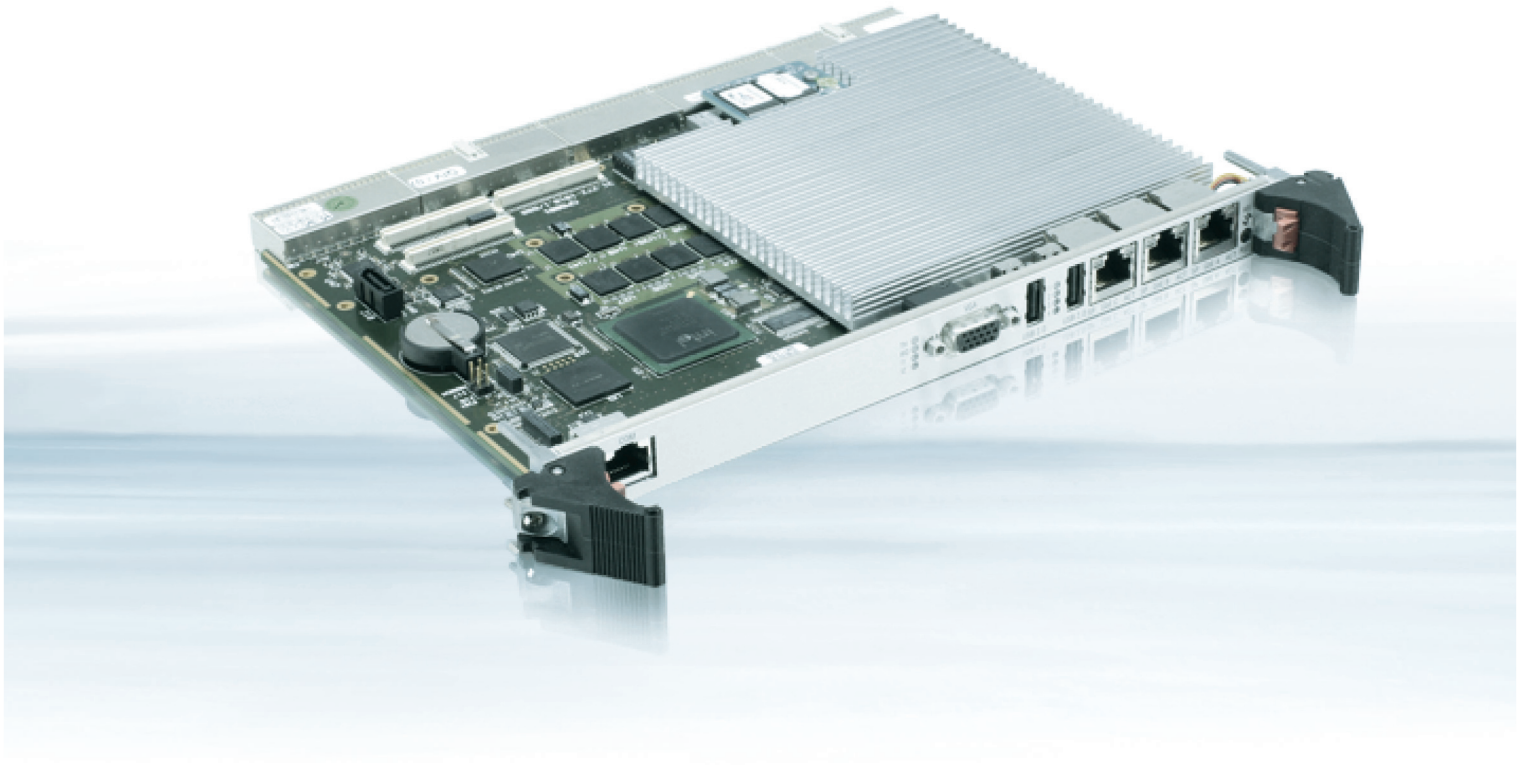
CP6001



6U Intel® Core™2 DUO RUGGED PROCESSOR BLADE

- high computing and graphic performance
- three rugged levels - R1, R2, R3 - for demanding application requirements
- comprehensive I/O capabilities

POSSIBILITIES START HERE kontron

CP6001

6U Intel® Core™2 DUO RUGGED PROCESSOR BLADE

Explore the power and the potential of two cores in one processor with Kontron's CP6001 based on the Intel® Core™ Duo / Core™2 Duo processor.

The CP6001, a CompactPCI PICMG 2.16 compliant 6U CPU board, comes with three rugged levels, making it yet another addition to Kontron's rugged PICMG 2.16 portfolio. Based on the Intel® Core™ Duo / Core™2 Duo processor and mobile chipset, the CP6001 features high computing and graphic performance with a low thermal power design and a complete set of data, communication and multimedia interfaces.

Maximum Ruggedization

Designed to withstand even the toughest environmental conditions, the passively cooled CP6001 featuring up to 4 GByte of soldered RAM and 2 GByte of soldered application flash comes in three rugged levels - defined as R1, R2 and R3. Versions R2 and R3 are available with E2 capabilities on project request (extended temperature range from -40° C to +85° C). The R1 version is designed for standard application requirements in air-cooled environments. The R2 version is ruggedized for high shock and vibration, air-cooled environments up to, and including VITA 47's EAC3/EAC6 (EAC6 requires special system components). The R3 version is fully conduction cooled and meets the VITA 47's ECC4 requirements. The CP6001 features energy efficient embedded Intel® dual core processors. With the 1.2 GHz Intel® Core™ Duo U2500 ULV processor and the Intel® Core™2 Duo L7400 LV processor, the CP6001 has extraordinary performanceper-watt values. Based on the Intel® Mobile 945GM chipset with a front side bus of up to 667 MHz and ICH7-R Southbridge, the CP6001 provides high graphics performance for the two independent digital video outputs to the rear I/O as well as HDA audio capabilities.

Comprehensive Versatility

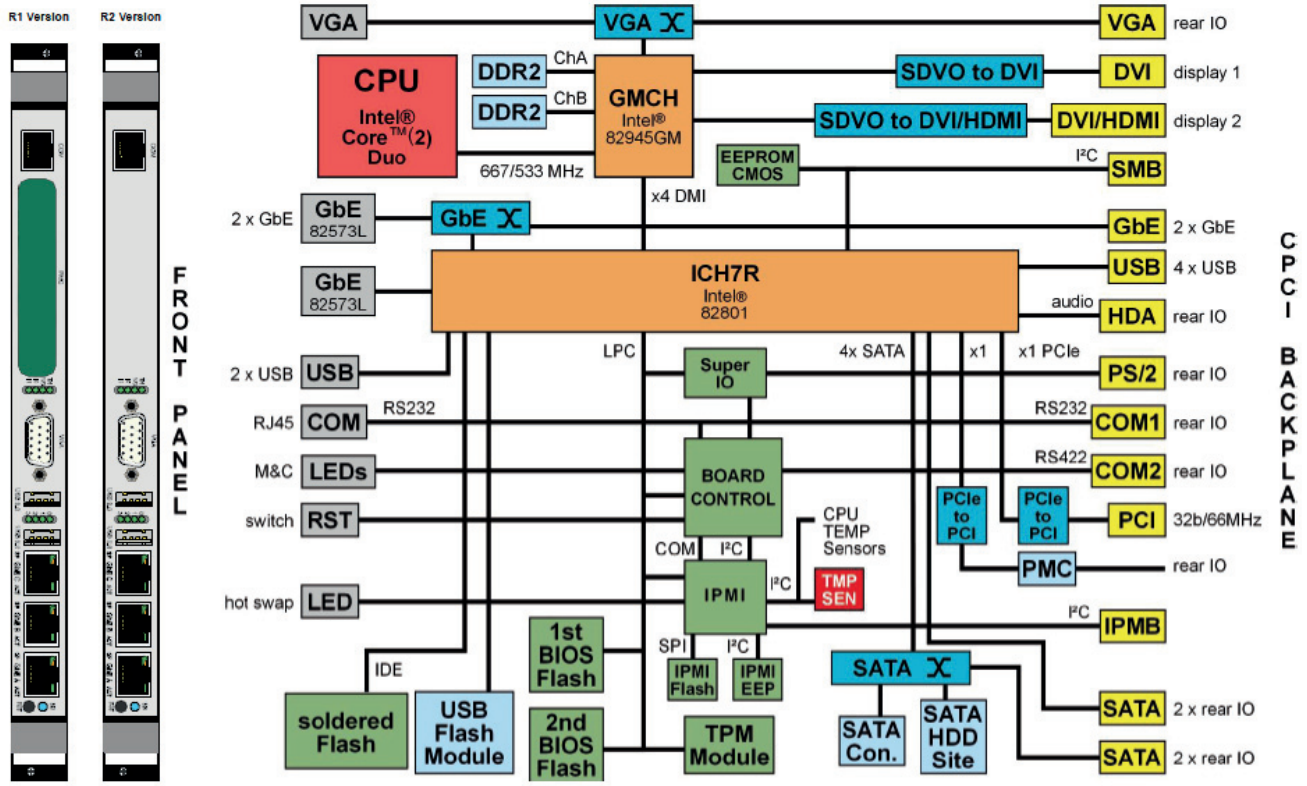
The CP6001 offers comprehensive I/O capability with 3x GbEthernet, 4x SATA with RAID 0/1/5/10 functionality as well as 6x USB 2.0, 2x COM and VGA and/or DVI. It can also accommodate a PMC slot or an onboard 2.5" SATA HDD. With up to 8 GByte of USB or 2 GByte soldered flash, the CP6001 enables construction of a highly shock and vibration resistant system with non-rotating, nonvolatile memory.

Unique Security

The board provides safety and security via a trusted platform module, (TPM) 1.2, two redundant 8 Mbit firmware hubs (failover) and IPMI (Intelligent Platform Management Interface) support (PICMG 2.9 R1.0).

Long-term Availability

Delivering a stable product based on Intel®'s embedded product line the CP6001 ensures long-term availability.



TECHNICAL INFORMATION

PROCESSOR		Intel® Core™(2) Duo Processor (65 nm): - Core™ Duo U2500, 1.2 GHz, 533 MHz FSB, 2 MB L2 cache, (ULV) - Core™2 Duo L7400, 1.5 GHz, 667 MHz FSB, 4 MB L2 cache, (LV) Note: Versions incorporating other CPUs available on project request. Please contact us for further assistance.
CHIPSET		- GMCH Intel® 945GM, dual-channel DDR-2 memory controller, intern. graphics controller w. dual indep. graphic channels - I/O Hub Intel® ICH7R, 4 SATA II controllers, 7x USB 2.0 (used 6x USB), 6x PCIe x1 (used 5x PCIe x1), 1x LPC
MEMORY		- Up to 4 GByte DDR-2, 533/667 MHz, w/o ECC, 2 channels: 2 GByte soldered + 2 GByte soldered - Up to 4 GByte NAND soldered Flash with onboard CompactFlash controller - Two redundant 8 Mbit Firmware Hubs (FWH) - Serial EEPROM (24LC64) 64 kbit for storing CMOS data when operating without battery
ONBOARD CONTROLLER		- Gigabit Ethernet: three Intel® 82573L Gigabit Ethernet PCI Express bus controllers: - 1x fixed to front I/O - 2x selectable between front or rear I/O to support PICMG 2.16 - Watchdog: FPGA-based, software configurable, two-stage Watchdog w. programmable timeout ranging from 125 ms to 256s in 12 steps - RTC, integrated in ICH7R - IPMI Controller, Renesas H8S/2166 controller w. on-chip 512 kByte Flash and 40 kByte RAM; ext. 1 MByte SPI Flash, 64 kbit EEPROM - Super I/O: LPC Super I/O from SMSC SCH3112I-NU, 2x UART, HW-Monitor, PS2, fan control - Trusted Platform Module (TPM): Infineon SLB 9635 TT 1.2
SYSTEM INTERCONNECT		- Serial ports: two COM ports (transceivers onboard) - COM1 as RS232 COM1 on front and rear I/O - COM2 as RS422 on the rear I/O interface - USB NAND Flash: One USB port of the ICH7R is routed to a dedicated onboard connector, where USB-NAND-Flash modules can be connected - SATA: Four Serial ATA II ports - Two ports are routed to rear I/O - Two are selectable between rear I/O or onboard usage: - One onboard SATA interface routed to a standard SATA connector - One available as 2.5" onboard HDD (mutually exclusive with PMC) - PMC: one 32-bit / 66 MHz PCI PMC slot with rear I/O support, 5 V and 3.3 V PCI signalling supported
FRONT PANEL FUNCTIONS	ETHERNET VGA COM USB PMC LEDs Reset Micro Switch	3x 1000/100/10 Base Ethernet on RJ45 1x 15-Pin D-Sub connector for standard analog displays 1x RS232 UART interface on RJ45 connector 2x 4-pin connectors opening for PMC front panel (R1 only) 2x LAN activity (yellow) and speed (green), one blue control LED for hot swap, 2x for IPMI, 1x watchdog, 1x thermal control, 4-LEDfield for BIOS POST code or general purpose reset button, guarded for hot swap (Note: CP6001-R3- conduction cooled- with reduced front I/O)
I/O TABLE SUMMARY		

	Front I/O	Rear I/O	Onboard Controller	Total
VIDEO	1 (*)	2	-	2
USB	2 (*)	4	-	6
SERIAL	1 (*)	2	-	2
PS/2 MOUSE/KBD.	-	1	-	1
ETHERNET	3 (*)	2	-	3
SATA	-	4	2	4
USB-FLASH	-	-	1	1
PMC	1 CCMC on CP6001-R3	via J4	Pn1/Pn2/Pn4	1

*) not available on CP6001-R3

CompactPCI BUS INTERFACE		- PICMG 2.0, 32-bit / 66 MHz - Universal signaling, REQ/GNT for 7 slots - Operating in system slot as system master and in peripheral slot in PCI passive mode (no communication to CPCI bus)
REAR I/O VIA J3/J4/J5		- J3: PICMG 2.16, VGA, COM 1/2, keyboard, mouse, USB 3-6, HDA, speaker, FAN sense - J4: PMC I/O - J5: SATA 1-4, DVI, HDMI
IPMI		IPMI 1.5 compliant
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 - EMI/EMC: EN 55022 / EN 55024, EN 50081-1 / EN 6100-6-2
GENERAL		- Dimensions: 233 x 160 x 20.5 mm, 6U, 4HP - Weight: R1: 622 g; R2: 740 g; R3: 698 g - MBTF: 180,332 h acc. to MIL-HDBK 217FN2, Ground Benign GB controlled at 30°C - CP6001-R3 214881 h acc. to MIL-HDBK-217 FN2 Ground Benign 30° C

TECHNICAL INFORMATION

SOFTWARE SUPPORT		- AMI 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, Linux®, VxWorks® (other OSs may be possible, please contact us for information)
POWER CONSUMPTION		- U2500 ULV 1.2 GHz and 1 GByte memory: max. 23 W - L7400 LV 1.5 GHz and 4GByte memory: max. 35 W
ENVIRONMENTAL		- CP6001-R1: IEC 60068-2-6; IEC 60068-2-27; IEC 61131-2; (0° to 60°C, forced air cooling required) - CP6001-R2: R1 + VITA 47, EAC3/EAC6; normal and extended (-40° to +85°C, forced air cooling required) - CP6001-R3: VITA 47, class ECC4 MIL-STD-810 Method 514 Proc 1 MIL-STD-810 Method 516 Proc 1 extended (-40° to +85° C, conduction cooling required) Higher shock and vibration levels can be achieved when installed in a ruggedized system.

ORDERING INFORMATION

ARTICLE	PART NO.	DESCRIPTION
CPU BOARDS		
CP6001-R1-1.2-2G	1022-9809	R1-Level, Intel® Core™ Duo U2500 ULV 1.2 GHz, 2 GByte soldered Memory
CP6001-R1-1.5-2G	36874	R1-Level, Intel® Core™2 Duo L7400 LV 1.5 GHz, 2 GByte soldered Memory
CP6001-R1-1.5-4G	37139	R1-Level, Intel® Core™2 Duo L7400 LV 1.5 GHz, 4 GByte soldered Memory [5]
CP6001-R2-1.2-2G-E2 [1]	1022-8743	R2-Level, Intel® Core™ Duo U2500 ULV 1.2 GHz, 2 GByte soldered Memory, E2 (-40°C to +85°C)
CP6001-R3-1.5-2G-4GF-E1X [1]	1022-3238	R3 Level, Intel® Core™2 Duo L7400 1.5 GHz, 2 GByte soldered Memory, E1x (-40° C to +70° C)
USB-FLASH MODULES		
FLASH-USB-XXX		NAND-Flash in various capacities
SERVICES		
CP6001-MK2.5SATA [2] [3]	37248	Mounting kit for 2,5" SATA-HDD onboard, mounting within 4HP
REAR TRANSITION MODULES		
CP-CTM80-3	29973	Various 4HP versions available
CP-RIO6-001	37459	With 2x DVI-D; 2x USB2.0; 2x GbE; headers for 2x COM, Flash, SATA, fan
CP-RIO6-001-HD	37460	With 1xDVI-D; 2x USB2.0; 2x GbE; socket for SATA 2.5" disk; headers for 2x COM, Flash, SATA, fan
CP-RIO6-001-HD-216	1036-8080	as 37460, but compliant to PICMG2.16 without rear Ethernet
SOFTWARE SUPPORT		
KIT-CP6001 [4]	36894	Documentation and Windows driver kit on CD-ROM
WXPE-BSP-CP6001 [4]	1022-7603	Windows XP Embedded BSP CP6001
LIN-BSP-CP6001 [4]	36895	Linux BSP CP6001 for Suse and RedHat
VXW-BSP-CP6001	36896	VxWorks BSP 6.x SMP support

NOTES

[1] No onboard HDD possible, only conduction cooled PMC.
[2] Mounting kit CP6001-MK2.5SATA for -R1 version only; mutually exclusive with PMC slot usage.
[3] HDD must be ordered separately.
[4] Free of charge, downloadable from the Internet.
[5] Physical memory available for applications is less.
Please contact your local sales representative for other configuration options.

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