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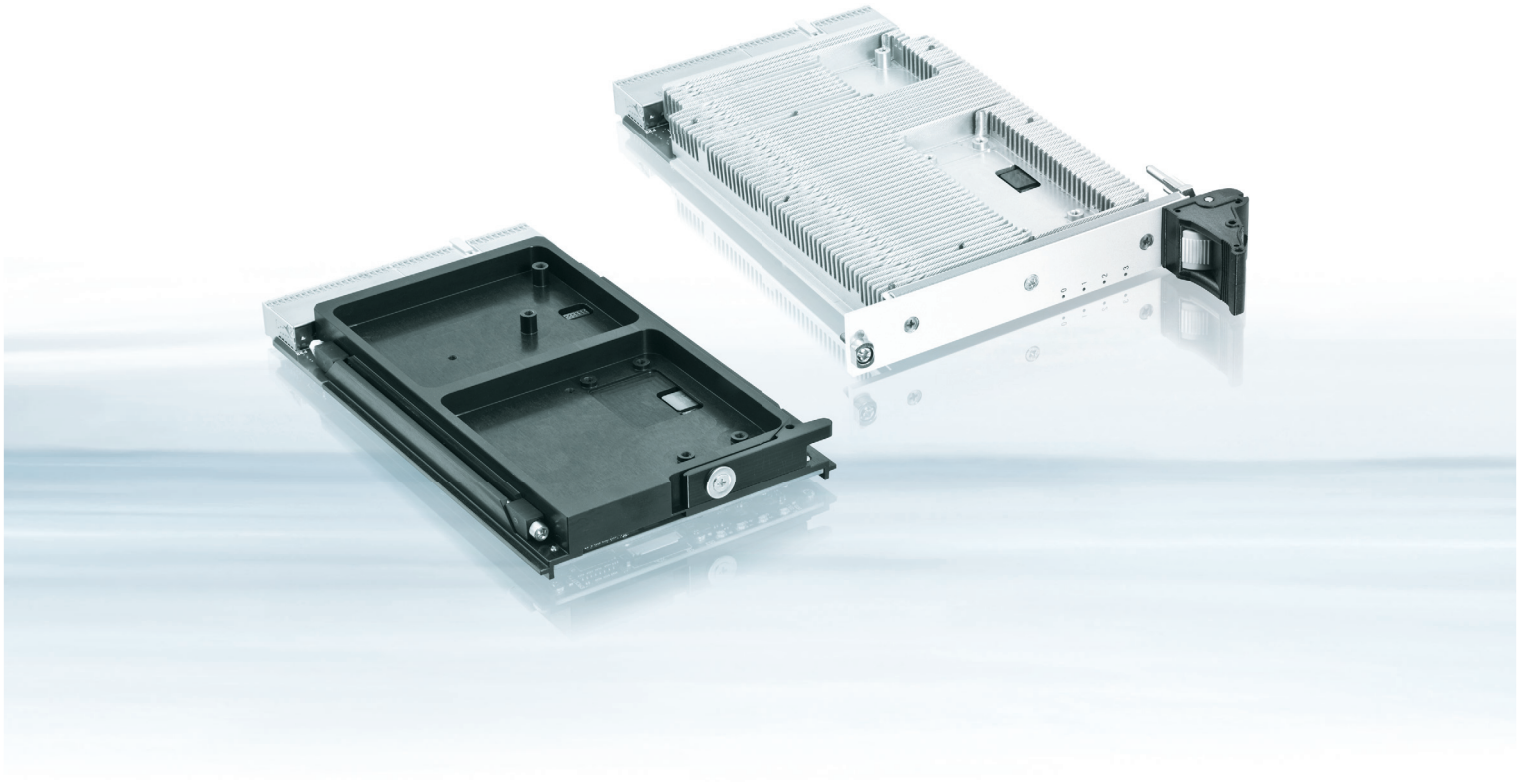
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CP3002-RC/-RA



3U CompactPCI® CONDUCTIVE-COOLED / AIR-COOLED Core™ I7 CPU BOARD

- highest performance
- rugged design
- broad rear I/O connectivity

POSSIBILITIES START HERE kontron

Intel®'s new Core™ microarchitecture sets new standards for energy-efficient performance and scalability by use of new technologies such as Intel® Turbo Boost technology and Intel® Smart Cache.

The CP3002-RC/-RA is a 3U CompactPCI® system controller board based on Intel®'s 32nm Core™ technology. The CP3002-RC is a rugged, conductive-cooled version with a heat spreader. The CP3002-RA comes as a rugged, air-cooled version with a front panel and a heat sink for forced airflow cooling. Both board versions use the highly efficient 2.0 GHz Intel® Core™ i7-620LE combined with the Mobile Intel® QM57 Express Platform Controller Hub. The processor comes with two cores each supporting two parallel threads (Intel® Hyper-Threading technology) enabling processing of up to four simultaneous threads. The next generation graphics core offers superior 3D and video performance resulting in an up to twice the graphics performance as compared with previous platform designs. Memory demanding applications can make use of up to 8GB soldered DDR3 SDRAM with ECC support. For onboard data storage the CP3002-RC/-RA offers either a 16GB or 32GB SATA Flash module.

Comprehensive Rear I/O Connectivity

The CPU board comes with a variety of rear I/O connectivity supporting communication interfaces like four Gigabit Ethernet, two USB 2.0 ports, two SATA interfaces and two serial ports (RS232 and RS232/RS422).

Outstanding Robustness

Designed to withstand even the toughest environmental conditions, the CP3002-RC/-RA is VITA 47 compliant against temperature and shock and vibration requirements. Furthermore, selected components with high temperature tolerance from embedded technology programs have been chosen to guarantee operability.

Highest Data Security

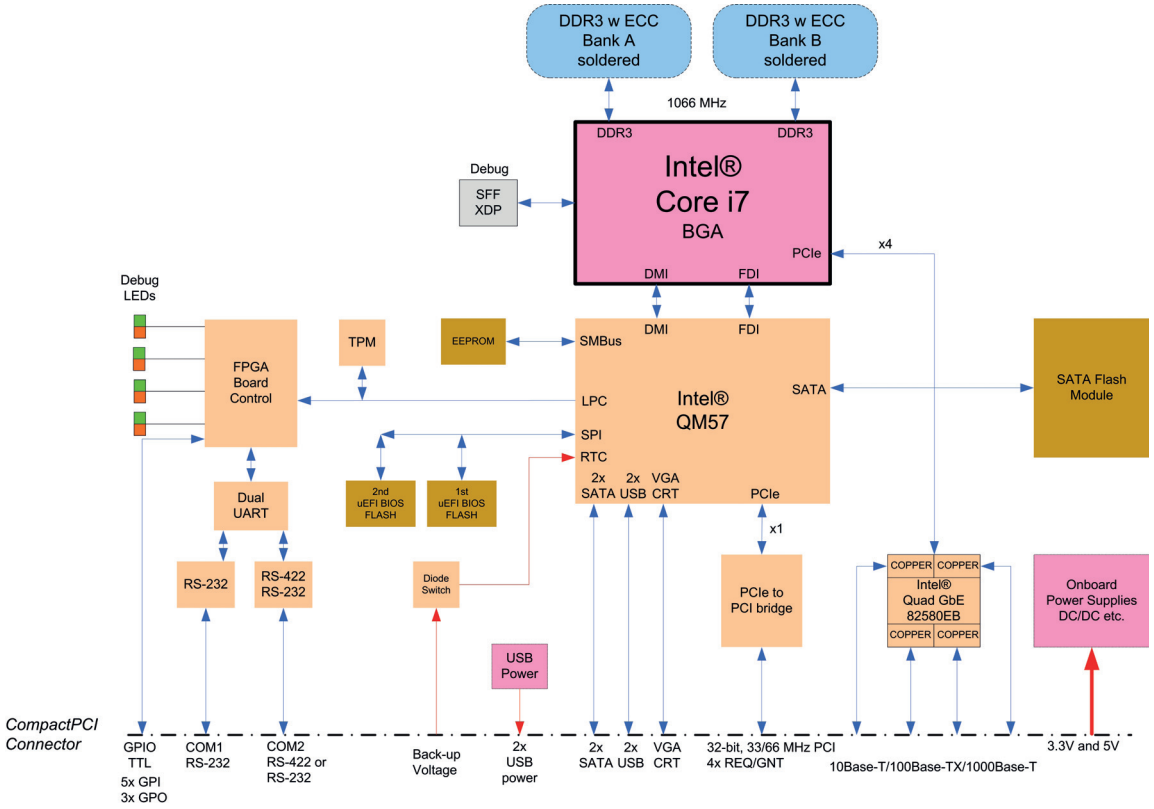
The Trusted Platform Module (TPM) provides hardware based encryption mechanisms to create, seal, or store keys, passwords and other important data.

Easy Evaluation

To guarantee an easy and trouble-free project start and allow simple evaluation and software development an extra evaluation system is available in which the CP3002-RA and the appropriate rear transition module (CP-RIO3-05) can be installed.

Long-Term Availability

Investing in a new project is always a challenge and risky. Extending the lifetime of an application to the maximum possible is therefore a critical issue in recuperating the development investment. Delivering a stable product based on Intel®'s embedded product line, the CP3002-RC/-RA ensures long-term availability. This reduces the risk of unplanned design changes and unexpected expensive application modifications. While minimizing deployment risks by providing a broad range of software support, the CP3002-RC/-RA eases the process of product integration and maximizes your competitive advantage to meet your time-to-market window.



TECHNICAL INFORMATION

PROCESSOR		Intel® Core™ i7 processor (32nm manufacturing process): - Core i7-620LE: 2.0 GHz, LV, 4MB L3 cache (shared instruction/data cache between both cores) Please contact Kontron for further information concerning the suitability of other Intel® processors for use with the CP3002-RC/-RA
MEMORY	SYSTEM MEMORY BOOT FLASH (UEFI) EEPROM SATA NAND FLASH	Up to 8 GB DDR3 SDRAM running at 1066 MHz, soldered, with ECC Two redundant 8 MB SPI Flashes, with fail-over functionality Serial EEPROM (24LC64) 64 Kbit for storing uEFI BIOS settings and serial number Up to 32 GB SLC NAND Flash on a dedicated SATA Flash module
ONBOARD CONTROLLER	PLATFORM CONTROLLER HUB VGA GIGABIT ETHERNET UART WATCHDOG RTC TRUSTED PLATFORM MODULE (TPM)	Mobile Intel® QM57 Express Chipset: - SATA host controller with six ports with RAID 0/1/5/10 support (only 3x ports are used, thus only RAID 0/1/5 support is available) - USB 2.0 host interface with up to 14 ports (only 2x ports are used) - 2x PCI Express x4 or 8x PCI Express x1 2.0 ports (only 1x PCI Express® x4 is used) High performance 3D graphics controller integrated in the processor: - Supports analog display resolutions up to 2048 x 1536 pixels @ 75Hz - Dynamic Video Memory Technology (DVMT), up to 352 MB - 4x GbE, without onboard magnetics - Intel® 82580EB Quad Gigabit Ethernet controller - Basic WOL (Wake-On-LAN), w/o power off capability XR16L2750IM-F, dual UART, 16C550-compatible FPGA-based, timeout ranging from 125ms to 4096s programmable in 16 steps, IRQ, Reset, dual-stage Integrated in QM57 with 256 Byte CMOS RAM Atmel AT97SC3204 TPM 1.2 controller
FRONT INTERFACES (CP3002-RA ONLY)	LEDS	LED 0,1,2,3: POST Code or General Purpose or WD, TH
ONBOARD INTERFACES	I/O EXTENSION CONNECTOR	The I/O extension connector holds 1x SATA port for the SATA Flash module
REAR I/O VIA J2		The CP3002-RC/-RA supports: - Two SATA II ports - Four Gigabit Ethernet ports without onboard magnetics - Two USB 2.0 ports with power - One VGA analog port - One COM port RS-232 - One COM port RS-232/RS-422 - Five GPIs and Three GPOs (LVTTL signalling) - Back-up voltage (3.3V)
COMPACTPCI® BUS INTERFACE		- PICMG 2.0 Rev. 3.0 compatible, 32-bit, 33/66MHz system master - Universal 5V and 3.3V PCI signalling voltage supported, 4 Req/Gnt & clock lines
SUPERVISORY FUNCTIONS		Watchdog, software configurable, 125ms to 4096s in 16 steps, generates IRQ or hardware reset, dual-stage configuration
COMPLIANCY		CompactPCI® Core Specification PICMG 2.0 Rev. 3.0 ANSI/VITA47-2005: CP3002-RC ECC4 CP3002-RA EAC6 Designed to meet or exceed: - Safety: UL 60950-1, CSA 22.2 No 60950-1, EN60950-1 - EMI/EMC: EN 55022 / EN 55024, EN 61000-6-3 / EN 61000-6-2
GENERAL	DIMENSIONS WEIGHT MTBF	100 x 160 mm, 3U, 4HP CP3002-RC: 360 g CP3002-RA: 420 g CP3002-RC: 261,450 h acc. to MIL-HDBK-217 FN2, Ground Benign, controlled at 30° CP3002-RA: 234,213 h acc. to MIL-HDBK-217 FN2, Ground Benign, controlled at 30°
SOFTWARE SUPPORT		- AMI uEFI, setup console redirection to serial port (VT100 mode) with CMOS setup access, EFI Shell support, Board configuration via Shell, diskless, keyboardless, videoless operation - LAN boot support - Board identification number accessible via EEPROM - Support for Windows® XP, Windows® 7, Windows® Embedded Standard 7, Windows® Server 2003, Windows® Server 2008, Linux, WindRiver Linux, VxWorks®, QNX® (Other OSs may also be used with the CP3002-RC/-RA. Please contact Kontron for further information.)
POWER CONSUMPTION		Typ. 31W
ENVIRONMENTAL	OPERATING TEMP. STORAGE TEMPERATURE CLIMATIC HUMIDITY	-40°C to +85°C, CP3002-RC -40°C to +75°C, CP3002-RA -55°C to +85°C (without additional components) 93% RH at 40°C, non-condensing (acc. to IEC 60068-2-78)

ORDERING INFORMATION

ARTICLE	DESCRIPTION
CPU CONFIGURATION	
CP3002-RC-2.0D-4-4R-S16-C-T	Rugged conduction-cooled, Intel® Core™ i7-620LE, 2.0 GHz, 4MB L3, 4GB soldered DDR3, 16GB Flash, with conformal coating, with TPM
CP3002-RC-2.0D-8-4R-S32-C-T	Rugged conduction-cooled, Intel® Core™ i7-620LE, 2.0 GHz, 4MB L3, 8GB soldered DDR3, 32GB Flash, with conformal coating, with TPM
CP3002-RA-2.0D-4-4R-S16-T	Rugged air-cooled, Intel® Core™ i7-620LE, 2.0 GHz, 4MB L3, 4GB soldered DDR3, 16GB Flash, with TPM
CP3002-RA-2.0D-8-4R-S32-T	Rugged air-cooled, Intel® Core™ i7-620LE, 2.0 GHz, 4MB L3, 8GB soldered DDR3, 32GB Flash, with TPM
REAR TRANSITION MODULE	
CP-RIO3-05	8HP rear I/O module (4x GbE, 2x USB, VGA, 2x SATA, 2x COM, GPIO)
EVALUATION SYSTEM	
CP-ASM4R-44F-M180AC-B0500-STD-TT	44HP/4U Evaluation System, integrated 5-slot Backplane, 180W AC PSU, Fans, rear I/O enabled, for use with CP3002-RA and Rear Transition Module
SOFTWARE	
VXW-BSP-CP3002 (-RC/-RA)-V6.9.1	VxWorks 6.9.1 Board Support Package



// EVALUATION SYSTEM

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