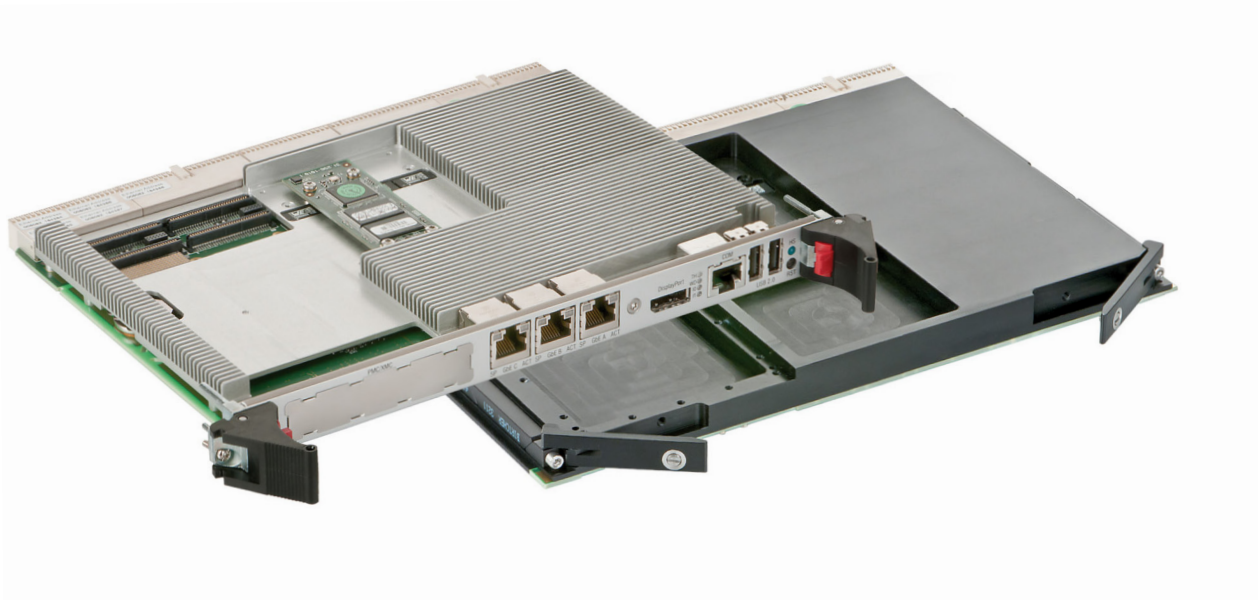


» CP6003-RA/RC «



Rugged Intel® Second Generation Core™ i7 CompactPCI Processor Board

- » Dual- or Quad-Core Performance
Second Generation Intel® Core™ i7 processor with up to 16 GByte Soldered Memory
- » Ruggedized
Rugged Air and Conduction Cooled Low Power Processor Board
- » Highest Versatility and Excellent Power Management
Comprehensive I/O capabilities: GigEthernet, PMC/XMC, USB, VGA, DVI, RAID, NAND Flash ...
- » Broad Software Support
Complete Board Support Packages for On Board Hardware and Toolchain

CP6003-RA/RC

Rugged Intel® Second Generation Core™ i7 Processor Board

Rugged applications are mainly determined by high shock, vibration, and temperature levels. The Kontron 6U CompactPCI processor boards CP6003-RA and CP6003-RC are the first choice, when computing performance is required in rugged air or conduction cooled 6U CompactPCI systems.

The CP6003-RA/RC, a CompactPCI PICMG 2.16 compliant 6U CPU board, comes with various rugged levels, making it yet another addition to Kontron's rugged PICMG 2.16 portfolio. Based on the Intel® Core™ i7 second generation processor and the QM67 platform controller hub, the CP6003-RA/RC is featured by dual or quad core computing performance at a reasonable thermal design power, including a complete set of data, communication and multimedia interfaces.

Maximum Ruggedization

Designed to withstand even the toughest environmental conditions, the passively cooled CP6003-RA/RC featured by soldered memory including ECC and industrial grade flash modules comes in two rugged levels – defined as RA and RC.

The CP6003-RA version is designed for harsh application requirements in air-cooled environments, where the CP6003-RC is made for conduction cooled environments. Depending on the processor type, both versions are available in extended temperature ranges from -40° C to +70° C.

With the 2.1 GHz Intel® Core™ i7-2715QE and the LV 2.2 GHz Intel® Core™ i7-2655LE, the CP6003-RA/RC has extraordinary performance per watt values. Up to 16 GByte of soldered DDR3 1333 MHz memory with ECC provide the foundation of demanding software applications. Based on the Intel® Mobile QM67 I/O controller hub the CP6003-RA/RC provides high graphics performance for VGA and two independent digital video outputs to the rear I/O as well as HDA audio capabilities.

Comprehensive Versatility

Besides the outstanding graphics performance, the CP6003-RA/RC offers comprehensive I/O capability with up to 5 x 1Gb Ethernet, 4 x rear I/O SATA with RAID 0/1/5/10 functionality, a local SATA Flash disk connector, as well as 6 x USB 2.0, 2 x COM.

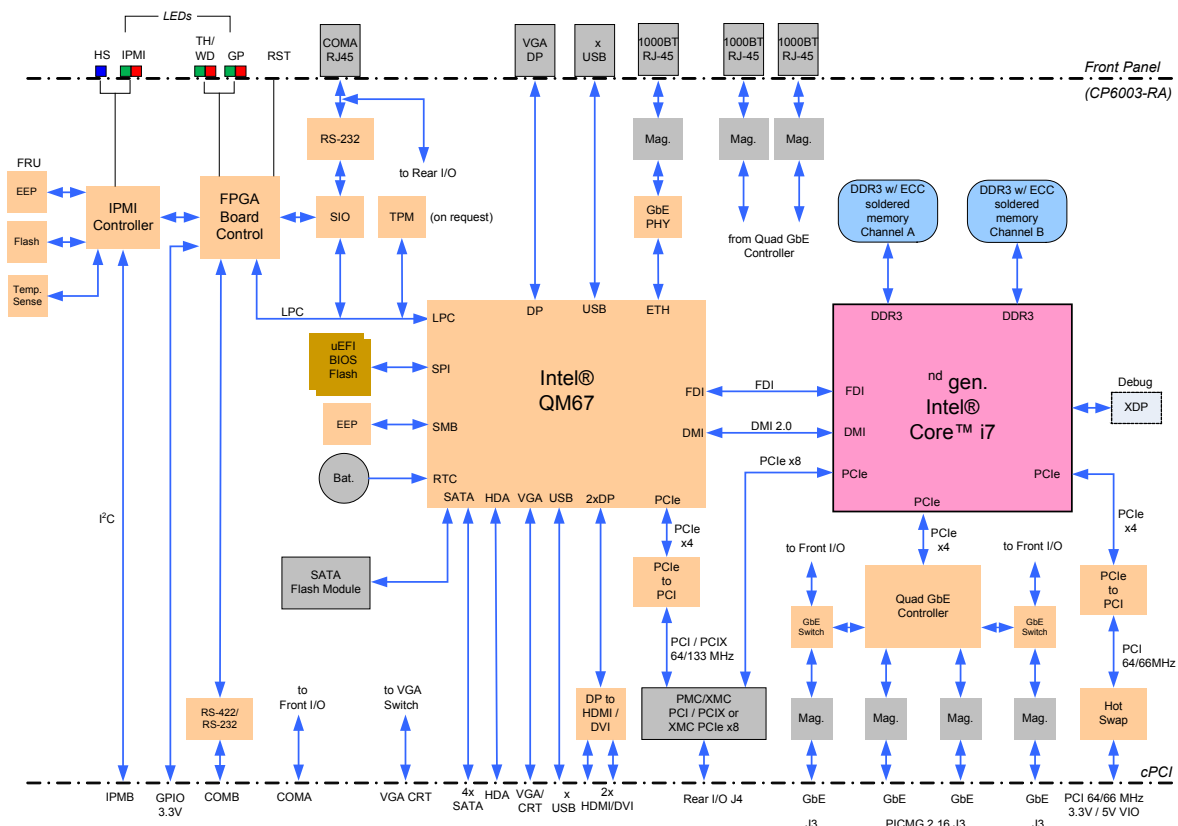
It can also accommodate a conduction cooled PMC/XMC slot for I/O intensive applications.

Unique Security

The board provides safety and security via an optional trusted platform module, (TPM 1.2), two redundant firmware hubs (failover) and IPMI support according PICMG 2.9 R1.0.

Long-term Availability

Delivering a stable product based on Intel®'s embedded product line the CP6003-RA/RC ensures long-term availability.



Technical Information

Processor	Intel® Core™ i7 Processor Second Generation (32 nm manufacturing process). Intel® Core™ i7-2715QE (quad core) or Intel® Core™ i7-2655LE (dual core) low voltage processor.			
Platform Controller Hub	Intel® QM67			
Memory				
System Memory	Up to 16GB soldered dual channel DDR3 memory with ECC and data speed of up to 1333 MHz per channel			
NAND Flash	Socket for optional Kontron Solid State Drive			
Flash BIOS	Two redundant 8 MByte SPI Flashes			
Front Panel Functions				
Gigabit Ethernet	3x Gigabit Ethernet channel, 2 switchable to rear I/O*			
USB Interface	2x USB2.0 interface*			
Serial	1x RS232 serial interface*			
Monitor	Displayport connector (adapters for VGA available)*			
Micro Switch	For Hot Swap and reset			
Status LED	For Hot Swap and Ethernet status information			
	*on CP6003-RA version only			
Onboard Interfaces				
Gigabit Ethernet	CP6003-RC: 4 ports 10/100/1000BASE-T to rear I/O CP6003-RA: 2 ports according PICMG2.16, 3 ports front I/O; 2 of them switchable to rear I/O			
SATA / NAND Flash	Four SATA ports fixed to rear I/O (SATA 3Gb/s) One onboard SATA channel available for mounting an optional Kontron SSD (SATA 6Gb/s)			
Serial Ports	CP6003-RA: 1x RS232 (routed to front and rear I/O) and 1x RS232/RS422 fixed to rear I/O CP6003-RC: 1x RS232 and 1x RS232/422 fixed to rear I/O			
PCI Bus	PICMG 2.0 Rev. 3.0 compatible, 64-bit / 66 MHz Universal V(I/O) 5V or 3.3V signaling 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 conduction cooled PMC slot, Pn1-Pn4, rear I/O Pn3 to J4, 3.3 volt V(I/O) Alternatively one conduction cooled XMC slot via P15, supporting XMC.3 x8 PCIeExpress			
Rear I/O	J3: 2x ETH acc. PICMG 2.16, 2x ETH, VGA, COM 1/2, 4x USB, GPIO, Speaker, fan sense J4: PMC rear I/O J5: 4x SATA, 2xHDMI, HDA, battery, fan control, additional GPIO			
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			
TPM	Optional 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	-	1	-	1
DVI/HDMI	-	2	-	2
USB 2.0	2*	4	-	4 (6*)
HD Audio	-	1	-	1
Serial	1*	2	-	-
Ethernet	3*	4 (4**)	-	4 (5*)
SATA	-	4	-	4
SATA NAND Flash	-	-	1	1
PMC / XMC	-	-	1/1	1/1
FAN control	-	2	-	2
Battery Input	-	1	-	1
SMB	-	1	-	1
	*) On CP6003-RA only) CP6003-RA 2 rear I/O + 3 front I/O, 2 of them switchable to rear I/O			
Compliance	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			

Technical Information

MTBF	153663h MIL-HDBK-217 FN2 Ground Benign 30° 103883h Bellcore Issue 6 Ground Benign 30°
Dimensions	233 x 160 x 20.5 mm, 6U, 4HP
Weight	Approx. 800gr
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® 7, XP, XP Embedded, Windows® Server 2008R2, Linux®, VxWorks® (other OSs may be possible, please contact us for information)
Power Consumption	Maximum: up to 60 watts (quad-core), 40 watts (dual-core)
Environmental	<ul style="list-style-type: none"> » CP6003-RA <ul style="list-style-type: none"> Quad-Core: VITA 47 V2/OS1, -40° to +55°C, forced air cooling required Dual-Core LV: VITA 47 V2/OS1 -40° to +70°C, forced air cooling required » CP6003-RC <ul style="list-style-type: none"> Quad-Core: VITA 47 V3/OS2 -40° to +55°C Dual-Core LV: VITA 47 V3/OS2 -40° to +70°C <p>EN50022 class B EN55024 EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11</p> <ul style="list-style-type: none"> » coating standard for CP6003-RC; on request for CP6003-RA†

Ordering Information

Article	Description
CPU Boards	
CP6003-RA-Q2.1-8G-E1X	<ul style="list-style-type: none"> » Quad-Core 2.1 GHz, Core i7-2715QE » 8GB soldered dual channel DDR3 memory 1333 MHz with ECC » Temperature range -40 to +55°C » Rugged air cooled
CP6003-RA-2.2-4G-E1X	<ul style="list-style-type: none"> » Dual-Core 2.2 GHz, Core i7-2655LE » 4GB soldered dual channel DDR3 memory 1333 MHz with ECC » Temperature range -40 to +70°C » Rugged air cooled
CP6003-RC-Q2.1-8G-E1X-CC	<ul style="list-style-type: none"> » Quad-Core 2.1 GHz, Core i7-2715QE » 8GB soldered dual channel DDR3 memory 1333 MHz with ECC » Temperature range -40 to +55°C » Rugged conduction cooled, conformal coating
CP6003-RC-2.2-4G-E1X-CC	<ul style="list-style-type: none"> » Dual-Core 2.2 GHz, Core i7-2655LE » 4GB soldered dual channel DDR3 memory 1333 MHz with ECC » Temperature range -40 to +70°C » Rugged conduction cooled, conformal coating
All: Extended temperature versions on request.	
Accessories	
Flash-SATA	various Kontron SSD products / sizes available
CABLE-GRAPHIC-DP-TO-DVI	Adapter cable DisplayPort to DVI, 19 cm
Rear Transition Modules	Several versions on request
Software Support	
KIT-CP6003	Documentation and Windows driver kit, available on the Web
WXPE-BSP-CP6003	Windows XP Embedded BSP CP6003, available on the Web
LIN-BSP-CP6003	Linux BSP CP6003 for Fedora and RedHat, available on the Web
VXW-BSP-CP6003	VxWorks BSP 6.x SMP support, available on the Web

CORPORATE OFFICES

Europe, Middle East & Africa

Oskar-von-Miller-Str. 1
85386 Eching/Munich
Germany
Tel.: +49 (0)8165/ 77 777
Fax: +49 (0)8165/ 77 279
info@kontron.com

North America

14118 Stowe Drive
Poway, CA 92064-7147
USA
Tel.: +1 888 294 4558
Fax: +1 858 677 0898
info@us.kontron.com

Asia Pacific

17 Building, Block #1, ABP.
188 Southern West 4th Ring Road
Beijing 100070, P.R.China
Tel.: + 86 10 63751188
Fax: + 86 10 83682438
info@kontron.cn

