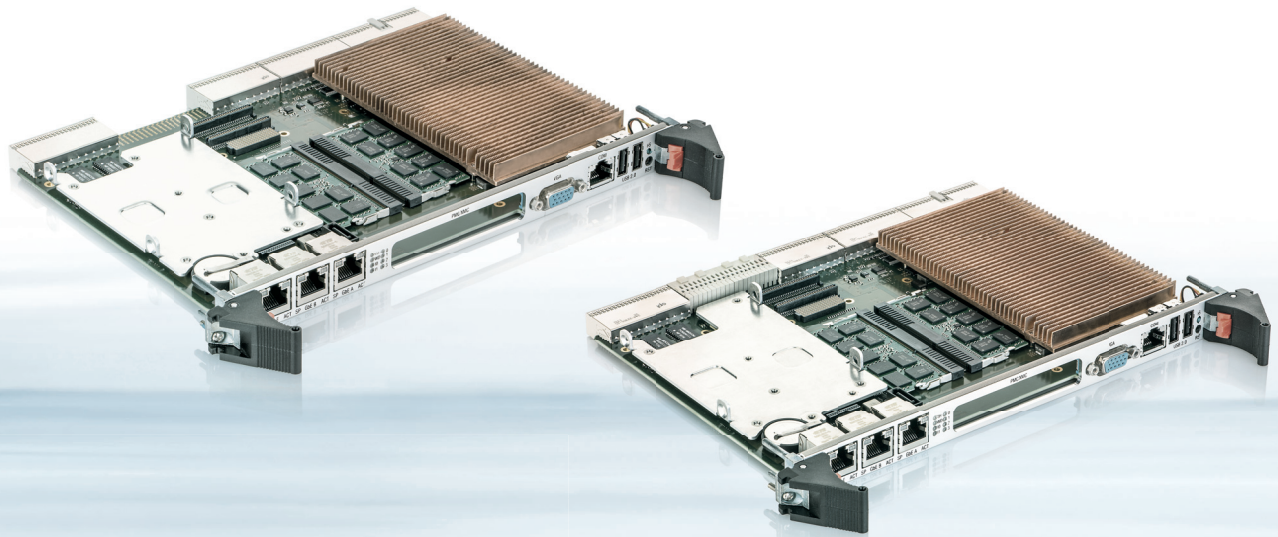


# CP6005(X)-SA

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## Intel® 4TH GENERATION Core™ I5/I7 CompactPCI® PROCESSOR BOARD

- ▶ high performance processor and graphics
- ▶ high speed Interconnections
- ▶ highest versatility and excellent power management
- ▶ broad software support

POSSIBILITIES START HERE



# CP6005(X)-SA

## 6U CompactPCI® PROCESSOR BOARD BASED ON INTEL® 4TH GENERATION CORE™ i7/i5 PROCESSORS - OPTION FOR 10 GIGABIT EHERNET & PCIE ON THE BACKPLANE

### Beyond Existing Limits

With the powerful quad core Intel® Core™ i7/i5 4th generation processors, the Kontron CP6005(X)-SA processor family offers extraordinary performance per watt values and is an ideal backbone for powerful network intensive applications, providing virtualization (VT-X, VT-D) and highest graphics performance by up to 20 graphics cores supporting OpenCL 1.2 and OpenGL3.2 and 3 independent interfaces.

5 Gigabit Ethernet channels on the CP6005-SA provide well weighted data throughput for external and internal PICMG® 2.16 compliant Ethernet traffic. The Kontron processor board CP6005X-SA supports two additional 10 Gigabit Ethernet ports combined with PCI Express® 2.0 x4 on the backplane, all based on PICMG® 2.20 for high bandwidth requirements.

The Intel® Advanced Vector Extensions AVX 2.0 enhancements provide a huge performance improvement in floating-point-intensive computations which are a key part of digital signal and image processing applications such as medical imaging and radar or sonar.

Both PICMG 2.16-compliant Kontron CP6005-SA and CP6005X-SA processor boards offer up to 16 GByte dual channel 1600 MHz DDR3L ECC memory via two SODIMM sockets, providing up to 25 GByte/sec data throughput. 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.

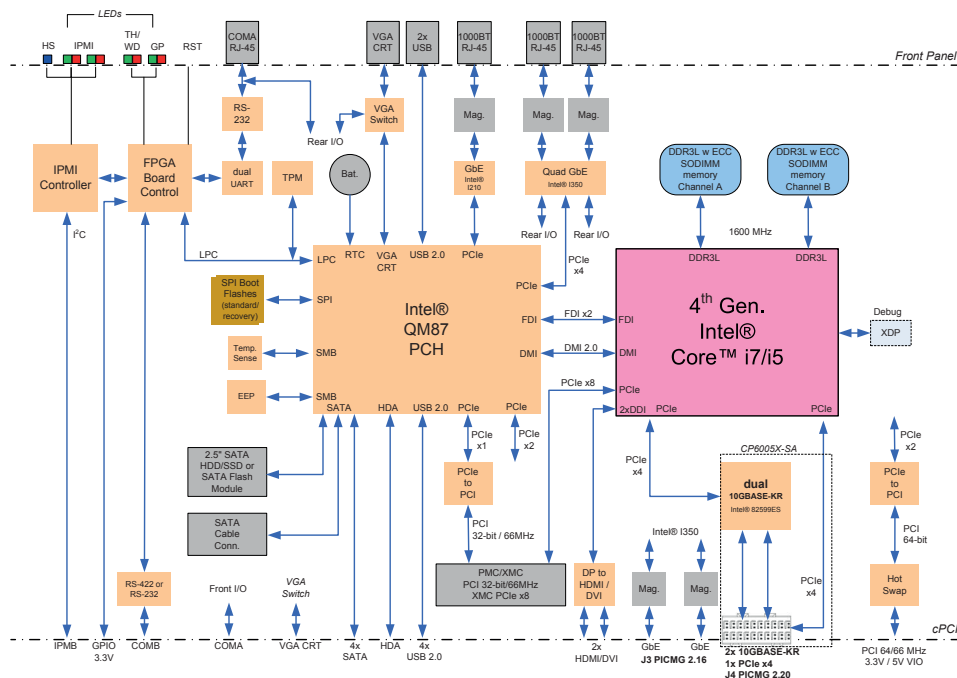
### Unique Versatility

The Intel® Platform Controller Hub QM87 provides advanced I/O technology including USB and Serial ATA channels for an onboard 2.5- inch SATA hard disk or SSD and an industrial grade NAND Flash SSD device - all usable in a 4HP single slot.

The highly integrated CP6005(X)-SA features also an XMC site according to XMC.3 supporting x8 PCI Express® (alternatively a 64-bit/133 MHz PCI PMC site) for various market available extensions. Based on the Kontron rear I/O concept, existing rear I/O transition modules are fully functional on the CP6005-SA, where the CP6005X-SA provides additional 10GbE and PCIe on the backplane for communication between CompactPCI® slots. Appropriate backplanes and systems are available.

### Longterm Availability

Delivering a stable product based on Intel®'s embedded product line, the CP6005(X)-SA ensures long term availability. This eliminates the risk of unplanned design changes and unexpected expensive application modification. While minimizing deployment risks, the CP6005(X)-SA 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® Core™ i7/i5 Processor 4th Generation																																																				
PLATFORM CONTROLLER HUB		Intel® QM87																																																				
MEMORY	SYSTEM MEMORY NAND FLASH FLASH BIOS	Up to 16 GByte SODIMM dual channel DDR3L memory with ECC and data speed of up to 1600 MHz per channel Socket for optional Kontron Solid State Drive up to 64 GByte SLC flash technology Two redundant 8 MByte SPI Flashes																																																				
FRONT PANEL FUNCTIONS	GIGABIT ETHERNET USB INTERFACE SERIAL ANALOG MONITOR MICRO SWITCH STATUS LED	3x 1000BASE-T Ethernet channels 2x USB2.0 interface on USB-A host connector 1x RS232 serial interface on RJ45 connector DSUB connector for analog monitors For Hot Swap and reset 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 SATA / NAND FLASH  SERIAL PORT  CompactPCI® BUS  PMC/XMC	Two PICMG 2.16 rear I/O 1000BASE-T ports 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 or SSD NAND Flash One port available for mounting an optional NAND Flash module COM1 (RS232) routed to front panel and rear I/O COM2 (RS232) routed to rear I/O only PICMG 2.0 Rev. 3.0 compatible, 64-bit / 66 MHz, Universal V(I/O) 5 V or 3.3 V signalling, Operating in system slot as system master and in peripheral slot in PCI passive mode (no communication to CompactPCI® bus) 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 PCI Express®																																																				
REAR IO		J3: 2x ETH acc. PICMG 2.16, 2x ETH, VGA, COM 1/2, 4x USB, GPIO, Speaker, fan sense J4: CP6005-SA: not assembled; CP6005X-SA 2x 10GBASE-KR, PCIe Gen 2 x4 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		Trusted Platform Module (TPM) 1.2 for enhanced hardware and software based data and system security																																																				
I/O TABLE SUMMARY	DESCRIPTION VIDEO CRT DVI/HDMI USB2.0 HD AUDIO SERIAL ETHERNET SATA SATA NAND FLASH PMC/XMC FAN CONTROL BATTERY INPUT SMB	<table border="1"> <thead> <tr> <th>Front IO</th> <th>Rear IO</th> <th>Onboard Connector</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1</td> <td></td> <td>1</td> </tr> <tr> <td></td> <td>2</td> <td></td> <td>2</td> </tr> <tr> <td>2</td> <td>4</td> <td></td> <td>6</td> </tr> <tr> <td></td> <td>1</td> <td></td> <td>1</td> </tr> <tr> <td>1</td> <td>2 (RS232, RS422)</td> <td></td> <td>2</td> </tr> <tr> <td>3</td> <td>2 (4*)</td> <td></td> <td>5 (7*)</td> </tr> <tr> <td>2</td> <td>4</td> <td></td> <td>6</td> </tr> <tr> <td>1</td> <td></td> <td>1</td> <td>(in 6 SATA incl.)</td> </tr> <tr> <td></td> <td></td> <td>1/1</td> <td>1/1</td> </tr> <tr> <td></td> <td>2</td> <td></td> <td>2</td> </tr> <tr> <td></td> <td>1</td> <td></td> <td>1</td> </tr> <tr> <td></td> <td>1 optional</td> <td></td> <td>1 optional</td> </tr> </tbody> </table>	Front IO	Rear IO	Onboard Connector	Total	1	1		1		2		2	2	4		6		1		1	1	2 (RS232, RS422)		2	3	2 (4*)		5 (7*)	2	4		6	1		1	(in 6 SATA incl.)			1/1	1/1		2		2		1		1		1 optional		1 optional
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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																																																				
MTBF		185968 h MIL-HDBK-217 FN2 Ground Benign 30° 230420 h Bellcore Issue 6 Ground Benign 30°																																																				
DIMENSIONS		233 x 160 x 20.5 mm, 6U, 4HP																																																				
WEIGHT		Approx. 800 gr																																																				
SOFTWARE SUPPORT		Phoenix EFI (BIOS) with POST codes, BIOS parameters saved in EEPROM, diskless, keyboardless, videoless operation, LAN boot support Board identification number accessible via EEPROM, Support for Windows® 7, Windows® Server 2008R2, Linux®, VxWorks (other OSs may be possible, please contact us for information)																																																				
POWER CONSUMPTION		Up to 60 watts (quad core), up to 50 watts (dual core) or less, depending on CPU type																																																				
OPERATING TEMP.		0° C to +60° C, passive module heat sink, requires forced airflow cooling, Extended temperature on request																																																				
STORAGE TEMP.		- 55° C to + 85° C (without battery or HDD)																																																				
HUMIDITY		93 % RH at 40° C, non condensing (acc. to IEC 60068-2-78)																																																				
ALTITUDE		50,000 ft (15,240 m)																																																				

## ORDERING INFORMATION

ARTICLE	DESCRIPTION
<b>CPU BOARDS</b>	
CP6005-SA-2.4Q-8	<ul style="list-style-type: none"> <li>- Quad Core 2.4 GHz, Intel® Core™ i7-4700EQ</li> <li>- 8 GByte SODIMM dual channel DDR3L memory 1600 MHz with ECC</li> <li>- Backplane connector J4 not assembled</li> <li>- Temperature range 0° C to +60° C</li> <li>- Standard air cooled</li> </ul>
CP6005X-SA-2.4Q-8	<ul style="list-style-type: none"> <li>- Quad Core 2.4 GHz, Intel® Core™ i7-4700EQ</li> <li>- 8 GByte SODIMM dual channel DDR3L memory 1600 MHz with ECC</li> <li>- Dual 10Gigabit/s and PCIe Gen 2 x4 on backplane connector J4 (ZDPlus)</li> <li>- Temperature range 0° C to +60° C</li> <li>- Standard air cooled</li> </ul>
CP6005-SA-1.8Q-GT3-8	<ul style="list-style-type: none"> <li>- Quad Core 1.8 GHz, Intel® Core™ i7-4860EQ, GT3 graphics</li> <li>- 8 GByte SODIMM dual channel DDR3L memory 1600 MHz with ECC</li> <li>- Backplane connector J4 not assembled</li> <li>- Temperature range 0° C to +60° C</li> <li>- Standard air cooled</li> </ul>
CP6005-SA-2.7D-8	<ul style="list-style-type: none"> <li>- Dual Core 2.7 GHz, Intel® Core™ i5-4400E</li> <li>- 8 GByte SODIMM dual channel DDR3L memory 1600 MHz with ECC</li> <li>- Backplane connector J4 not assembled</li> <li>- Temperature range 0° C to +60° C</li> <li>- Standard air cooled</li> </ul>
CP6005-SA-2.7D-8-E1X	<ul style="list-style-type: none"> <li>- Dual Core 2.7 GHz, Intel® Core™ i5-4400E</li> <li>- 8 GByte SODIMM dual channel DDR3L memory 1600 MHz with ECC</li> <li>- Backplane connector J4 not assembled</li> <li>- Temperature range -40° C to +70° C</li> <li>- Standard air cooled</li> </ul>
<b>ACCESSORIES</b>	
FLASH-SATA	Various Kontron SSD products / sizes available
CP-RAPID3	PICMG 2.20 based system for 6U CompactPCI high speed interconnects
<b>REAR TRANSITION MODULES</b>	
	Several versions on request
CP-RI06-001	4HP Rear I/O Module for CP6005(X)-SA with 2x DVI-D; 2x USB2.0; 2x GbE; headers for 2x COM, Flash, SATA, Fan
CP-RI06-001-HD	4HP Rear I/O Module for CP6005(X)-SA with 1x DVI-D; 2x USB2.0; 2x GbE; socket for SATA 2.5" disk; headers for 2x COM, Flash, SATA, Fan
CP-RI06-001-HD-216	Similar to CP-RI06-001-HD, but PICMG 2.16 compliant; without external Ethernet
CP-RI06-001-HD-VGA	Similar to CP-RI06-001-HD, but with VGA interface instead of DVI-D
CP-RI06-B	4HP Rear I/O Module for CP6005(X)-SA with 2x USB, 2x GbE; Audio, 2x COM, DVI, HDMI, Connectors for USB Flash, 4x SATA, Fan
CP-RI06-B-216	Similar to CP-RI06-B, but PICMG 2.16 compliant; without external Ethernet ports
CP-RI06-A	4HP Rear I/O Module for CP6005(X)-SA with 2x USB, 2x GbE; Audio, 2x COM, VGA, Connectors for USB Flash, 4x SATA, Fan
CP-RI06-A-216	Similar to CP-RI06-A, but PICMG 2.16 compliant; without external Ethernet ports
CP-RI06-M	4HP Rear I/O Module for CP6005(X)-SA with 2 disk sockets
	All downloadable from Web
<b>SOFTWARE SUPPORT</b>	
WINDOWS	Documentation and Windows driver kit (Windows 7 / 2008R2)
LINUX	Linux Fedora and RedHat Board Support Package and documentation
WINDRIVER LINUX	Windriver Linux Board Support Package and documentation
VXWORKS	VxWorks 6.9.x Board Support Package and documentation
QNX	QNX Board Support Package and documentation

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