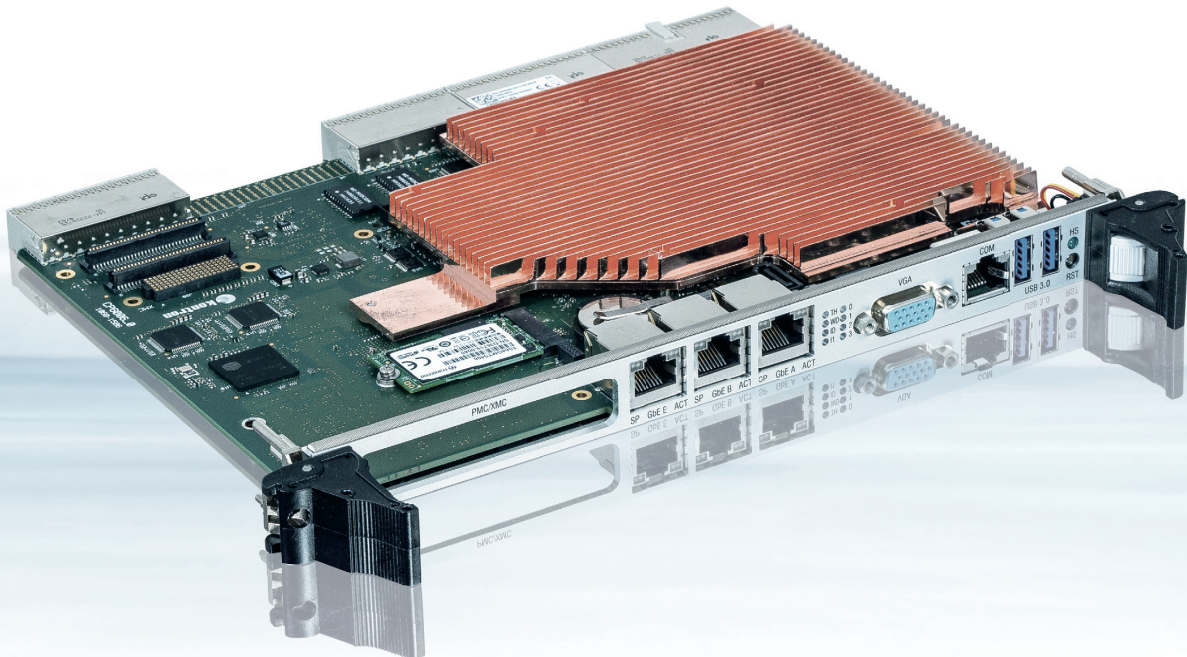


CP6006(X)-SA



Intel® Xeon® D CompactPCI® SERVER BLADE

- ▶ PICMG2.16 system/peripheral 8-core CPU
- ▶ Security solutions onboard
- ▶ 10 years Intel® silicon reliability
- ▶ PCI Express® & 10 GbE backplane option
- ▶ Production and design in Europe

POSSIBILITIES START HERE



CP6006(X)-SA

FOR SERVER APPLICATIONS IN DEMANDING ENVIRONMENTS

Octo Core Intel® Xeon® D Server CPU

CP6006-SA is a 6U server class CPU platform, designed and produced in Europe. CP6006 is based on the 14 nm Intel® Xeon® D-1500 processor with 2–16 cores options, with excellent performance-per-watt values. Its scalable power budget allows users to tailor the power dissipation to their requirements. CP6006-SA provides cooling mechanics for standard air cooled systems.

- ▶ 4HP single slot CPU board with passive cooling
- ▶ PICMG2.16 system and peripheral slots
- ▶ 2 to 16 cores CPU options for scalable processor power
- ▶ Intel® Xeon® Class server features
- ▶ DDR4 2133 MHz SO-DIMM memory with ECC up to 32 GByte (64 GByte on request)
- ▶ 5x GigEthernet, SATA Gen3
- ▶ Onboard XMC/PMC, SSD flash
- ▶ Graphics 2D SM750 assembled
- ▶ Rear I/O supporting PICMG2.16
- ▶ 10GbE/ PCIe 3.0 x4 via backplane (option)
- ▶ Ready for Kontron *APPROTECT Security Solution*
- ▶ Trusted Platform Module TPM 2.0 option

Safe investment by virtualisation

CP6006 is well suited for advanced Multi-CPU server applications, built as virtual machines. By using virtualization, any CP6006 based platform becomes a future proof investment. The well-established CompactPCI® eco system, combined with a long availability of the Intel® Xeon® D-1500 processor family and 10 years Intel® reliability make it a safe choice.

For 19" rackmount servers with higher demands

The outstanding Intel® Xeon® server capabilities can be combined with a high storage capacity of 32 GByte DDR4 with ECC or even 64 GByte on request, to allow for excellent virtualization support. This makes CP6006-SA and CP6006X-SA the ideal choice for servers and computing nodes, when ordinary 19" rackmount systems do not meet the required robustness and longevity.

Versatility in communication, storage, extensions

The Intel® Xeon® D system on a chip (SoC) has an integrated platform controller hub (PCH), two integrated 10 Gigabit Ethernet ports, and integrated I/O such as USB and Serial ATA channels. Various serial ATA storage devices can be used with CP6006: an onboard M.2 flash device, or others such as 2.5" HDD/SSD by using the additional onboard cable connection or one of the rear transition modules. The highly integrated CP6006-SA also features an XMC site according to XMC.3 supporting x8 PCI Express® (alternatively a PMC site) for various extensions available on the market.

Based on the Kontron rear I/O concept, existing rear I/O transition modules are fully functional on the CP6006-SA, where the CP6006X-SA provides an additional 10GbE and PCI Express® on the backplane for communication between CompactPCI® slots.

Ready for Kontron *APPROTECT Security* and TPM

CP6006-SA is ready to be used with Kontron *APPROTECT Security*. Kontron *APPROTECT* is a complementary product and may be purchased separately as option. The related security chip is soldered onto the PCB which is important for many field deployments. It provides copy protection, IP protection, license model enforcement, license handling, implementation of license models, assignment of privileges respectively access levels. In addition, CP6006-SA is equipped with a Trusted Platform Module (TPM 2.0) for enhanced hardware and software based data and system security, such as secure boot and trusted boot. TPM access is disabled by default.

PCI Express® and 10 Gigabit Ethernet via backplane

PCI Express® and 10 Gigabit Ethernet via backplane is enabled via the ZDplus rear connector at J4, by using the signalling according to PICMG2.20. The function and the connector are provided as additional option beyond PICMG2.16 by the product variant CP6006X-SA. The PICMG2.20 based products are the right choice whenever highest data throughput and maximum bandwidth within the system is required. Further PICMG2.20 based boards are a PMC/XMC carrier CP6105X, a GPU carrier CP6108X, a GPU card CP6-GPU8860, backplanes, card cages, such as CP-RAPID.

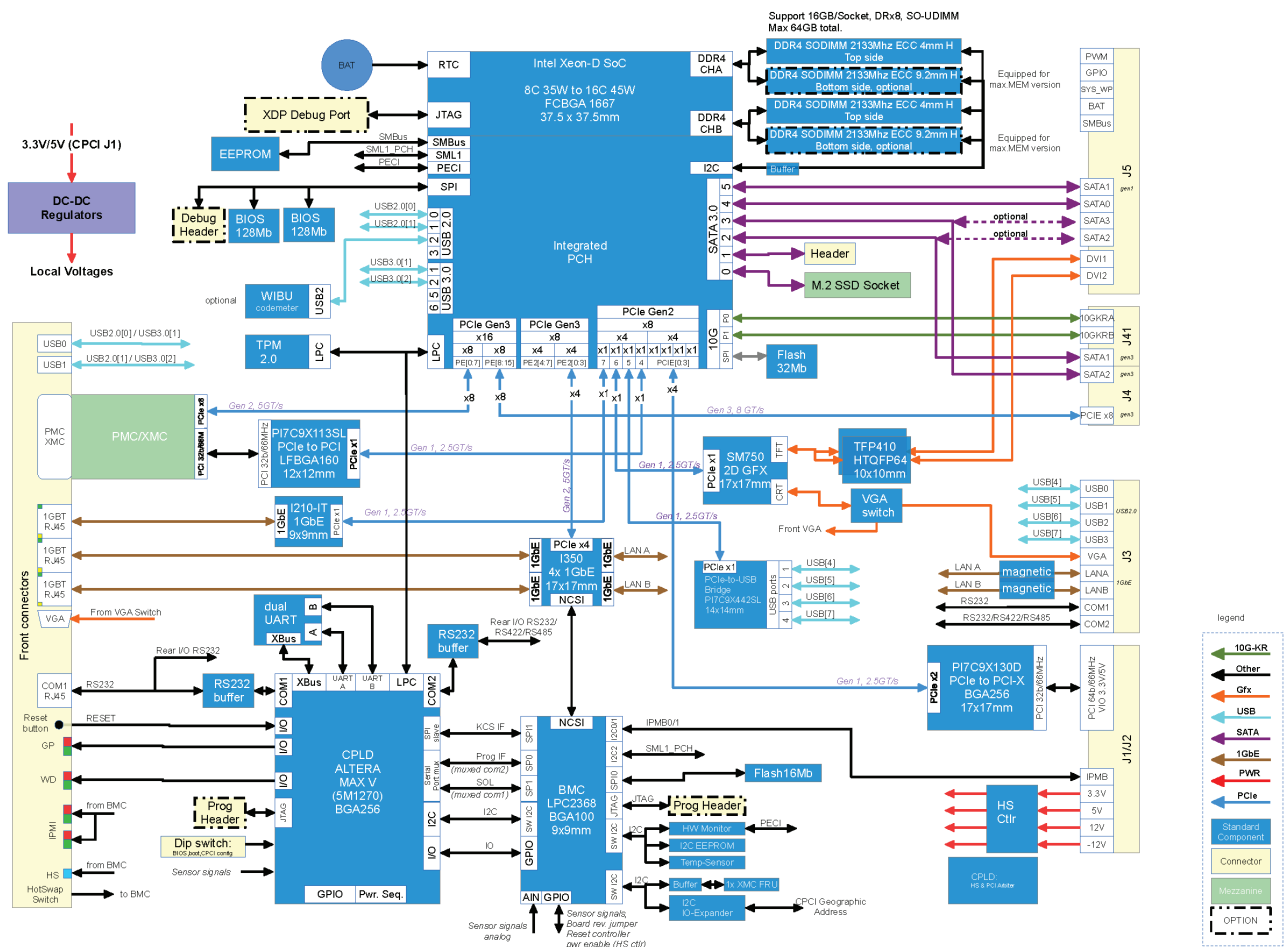
► TECHNICAL INFORMATION

PROCESSOR		Intel® Xeon® Processor D-1500, integrating a PCH and a dual 10 GbE NIC. D-1539, 8 core, 12 MByte cache, 1.6 GHz D-1548, 8 core, 12 MByte cache, 2.0 GHz D-1559, 12 core, 18 MByte cache, 1.5 GHz, on request																																												
MEMORY	SYSTEM MEMORY NAND FLASH FLASH BIOS	16 / 32 / 64 GByte SODIMM dual channel DDR4 with ECC, up to 2133 MHz per channel; 64 GByte requires 8HP extension on bottom side Socket for optional M.2 Solid State Drive Two redundant 16 MByte SPI Flashes																																												
FRONT PANEL FUNCTIONS	GIGABIT ETHERNET USB INTERFACE SERIAL ANALOG MONITOR MICRO SWITCH STATUS LED	3x 1000BASE-T Ethernet channels on RJ45 connector 2x USB 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 10G ETHERNET SATA SERIAL PORT CompactPCI® BUS PMC/XMC	Two PICMG 2.16 rear I/O 1000BASE-T ports Two 10G BASE-KR Ethernet channels to J4 (based on PICMG 2.20) Four ports fixed to rear I/O, one port for a standard SATA connector, one port supporting M.2 SSD flash (type 2280 or 2242 double sided) COM1 (RS232) routed to front panel and rear I/O COM2 (RS232/RS422) 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 32-bit / 66 MHz PMC slot, Pn1-Pn2, 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, fan sense J4: CP6006-SA: not assembled; J4: CP6006X-SA ZD-plus connector: 2x 10GBASE-KR, x8 PCIe Gen 3, 2x SATA 6Gb/s J5: 2-4x SATA, 2x DVI/HDMI, 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																																												
SECURITY		Kontron Security Solution, Trusted Platform Module (TPM) 2.0																																												
I/O TABLE SUMMARY	DESCRIPTION VIDEO CRT DVI/HDMI USB SERIAL ETHERNET 1G/10G SATA PMC/XMC FAN CONTROL BATTERY INPUT SMB	<table><tr><td>Front IO</td><td>Rear IO</td><td>Onboard Connector</td><td>Total</td></tr><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>1</td><td>2 (RS232, RS422)</td><td></td><td>2</td></tr><tr><td>3/0</td><td>2/2 (CP6006X-SA)</td><td></td><td>5/2</td></tr><tr><td></td><td>4</td><td>2</td><td>6</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></table>	Front IO	Rear IO	Onboard Connector	Total	1	1		1		2		2	2	4		6	1	2 (RS232, RS422)		2	3/0	2/2 (CP6006X-SA)		5/2		4	2	6			1/1	1/1		2		2		1		1		1 optional		1 optional
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COMPLIANCY	CompactPCI® Safety EMI/EMC	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, IPMI 1.5 CompactPCI® Packet Switching Backplane PICMG 2.16 R1.0 Designed to meet or exceed: Safety: UL 60950-1, CSA 22.2 No 60950, EN 60950-1, IEC 60950-1 EMI/EMC: EN 55022 Class B, EN 55024																																												

► TECHNICAL INFORMATION

MTBF		170,000 hrs acc. to MIL-HDBK-217 FN2 Ground Benign 30 °
DIMENSIONS		233 x 160 x 20.5 mm, 6U, 4HP (standard, up to 32 GByte RAM)
WEIGHT		Approx. 800 gr
SOFTWARE SUPPORT	EFI/BIOS	AMI uEFI (BIOS) with POST codes, BIOS parameters saved in EEPROM, diskless, keyboardless, videoless operation, LAN boot, Quick boot, Board identification data accessible via EEPROM.
	OS Support	Windows® 10 (64bit), Windows® Server 2012, 2008-R2, Linux®, VxWorks® 7.x (other OSs may be possible, please contact us)
POWER CONSUMPTION		Typical 55 watts or 65 watts, depending on CPU type
OPERATING TEMP.		0 °C to 60 °C (D-1539), 0 °C to 55 °C (D-1548), passive module heat sink, requires forced airflow cooling, Extended temperature on request
STORAGE TEMP.		-55 °C to +85 °C (without battery)
HUMIDITY		93 % RH at 40 °C, non condensing (acc. to EN 60068-2-78)
ALTITUDE		50,000 ft (15,240 m)

► CP6006-SA BLOCK DIAGRAM



► ORDERING INFORMATION

ARTICLE	DESCRIPTION
CPU BOARDS	
CP6006-SA-1.60-16-4R-T	With 8 core Intel® Xeon® D-1539, 16 GByte DDR4, backplane connector J4 not assembled, standard air cooled, temperature range 0 °C to +60 °C
CP6006X-SA-1.60-32-4R-T	With 8 core Intel® Xeon® D-1539, 32 GByte DDR4, Dual 10Gigabit/s and x4 PCIe Gen 3 on backplane connector J4 (ZDplus), standard air cooled, temperature range 0 °C to +60 °C
CP6006-SA-2.00-16-4R-T	With 8 core Intel® Xeon® D-1548, 16 GByte DDR4, backplane connector J4 not assembled, standard air cooled, temperature range 0 °C to +55 °C
CP6006X-SA-2.00-16-4R-T	With 8 core Intel® Xeon® D-1548, 16 GByte DDR4, dual 10Gigabit/s and x4 PCIe Gen 3 on backplane connector J4 (ZDplus), standard air cooled, temperature range 0 °C to +55 °C
MORE	Variations of CPU selection and RAM size. 64 GByte DDR4 on request
ACCESSORIES	
STORAGE	Selection of M.2 SSD flash type 2280 or 2242 double sided
CP-ASM10-PSB	19" 10U PICMG2.16 compliant CompactPCI® system. Space for up to four 250 W 3U AC PSU
CP-RAPID3	19" PICMG 2.20 based system enabling 10 GbE via J4 (ZDplus) between the system slots and PCI Express® to the device slots. 3U integrated card cage, with PSU's and fans, 4 slots horizontal mounting
REAR TRANSITION MODULES	
CP-RI06-001	4HP 6U RTM: 2x DVI-D; 2x USB2.0; 2x GbE; headers for 2x COM, Flash, SATA, Fan
CP-RI06-001-HD	4HP 6U RTM: 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 6U RTM: 2x USB, 2x GbE; 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 6U RTM: 2x USB, 2x GbE; 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 RTM: 2 disk sockets

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