CP307

PCI EXPRESS®

Intel® Core™ DUO 3U CompactPCI® CPU BOARD

- low power consumption
- high memory density
- comprehensive I/O capabilities

POSSIBILITIES START HERE kontron

THE POWER OF DUO

UNPRECEDENTED PERFORMANCE WITH DUAL CORE SOLUTION

Explore the power and the potential of two cores in one processor with Kontron's CP307 based on the Intel® Core™ Duo processor.

Greater Performance / Watt

The CP307, a 3U CompactPCI® CPU board incorporates Intel®'s latest processor chip based on a new 65nm technology - the Intel® Core™ Duo processor - delivering optimized power efficient computing and breakthrough dual-core performance with amazingly low power consumption. With its two execution cores, the Intel® Core™ Duo processor is optimized for multi-threaded applications and multitasking. Multiple demanding applications can run simultaneously such as a graphics-intensive program while at the same time serious number-crunching programs can be handled. Furthermore the two cores give the capability to execute two operating systems independently - one core dedicated to one OS - starting a new era of software implementations.

Greater Graphic Performance

Combined with the Mobile Intel® 945GM Express chipset featuring Intel®'s latest Graphics Media Accelerator the CP307 delivers up to 2x improvement in graphics performance with exceptional 3D graphics performance and enables up to 25% higher data transfer compared to previous platform designs. As a dual display solution the CP307 offers a standard analog CRT connection with integrated 400 MHz RAMDAC and an independent DVI interface.

Greater Capacity

The CP307 offers a maximum capacity of 4 GB Double Data Rate (DDR2) memory running at 667 MHz dual channel mode via a combination of up to 2 GB soldered memory and a dedicated memory socket for a 2 GB SODIMM module.

Shock Resistance

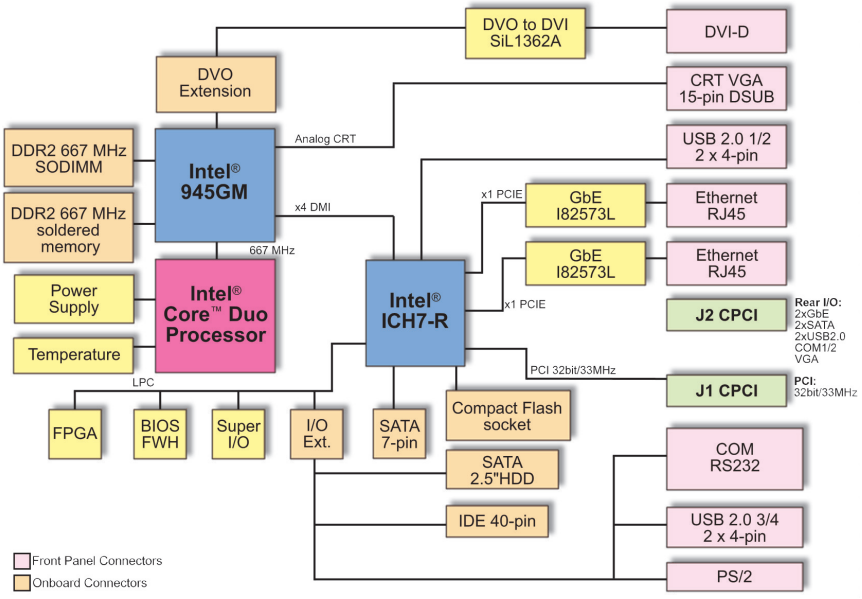
The direct soldered processor and memory provides a higher shock/vibration - resistance than socket devices can; the fan-less heat sink is tightly screwed on the board enabling the CP307 as an ideal solution for harsh environments.

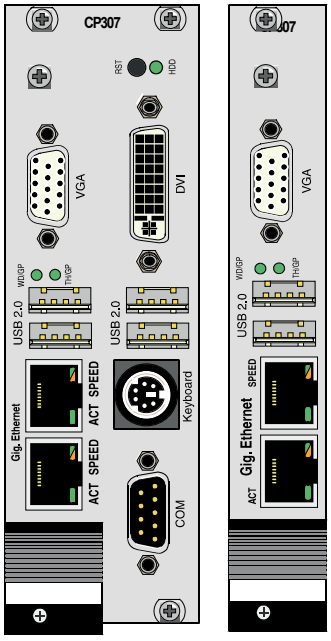
Comprehensive I/O Connectivity

The CP307 comes with a comprehensive I/O connectivity supporting future oriented interfaces like 2x Gigabit Ethernet, up to 6x USB 2.0 ports, 4x SATA interfaces. Various versions as 4HP or 8HP - optionally combined with rear I/O support - the CP307 can be adapted to a wide range of different application needs. Supporting onboard PCI Express® the CP307 improves I/O performance significantly eliminating the bottle-neck of parallel PCI bus.

Longterm Availability

Investing in a new project is always a challenge and risky. Extending the lifetime of an application to the possible maximum is therefore a critical issue to save the development investments. Delivering a stable product based on Intel®'s embedded product line the CP307 ensures long term availability. This eliminates the risk of unplanned design changes and unexpected expensive application modification. While minimizing deployment risks by providing a broad range of software support the CP307 eases the process of product integration and maximizes your competitive advantage to meet your time-to-market window. Thanks to the future oriented design the CP307 provides enough headroom for the emerging next generation applications requirements.





TECHNICAL INFORMATION

SYSTEM PROCESSOR		Intel® Core™ Duo processor in micro-FCBGA package (65nm manufacturing process): - T2500: 2.00 GHz, 667 MHz FSB, 2 MB L2, FCBGA - L2400: 1.66 GHz, 667 MHz FSB, 2 MB L2, FCBGA - U2500: 1.2 GHz, 533 MHz FSB, 2 MB L2, FCBGA Intel® Celeron® M processor in micro-FCBGA package: - 440: 1.86 GHz, 553 MHz FSB, 1 MB L2, FCBGA [1)] - 423: ULV 1.06 GHz, 533 MHz FSB, 1 MB L2, FCBGA [1)] All board versions are passive cooled with a heatsink within 4HP height. Forced air cooling at a specific flow rate is required depending on the processor version. [1)] available on project request
MEMORY	SYSTEM MEMORY FLASH (BIOS) EPROM COMPACTFLASH HDD	Up to 4 GByte dual channel DDR2 667 MHz memory via max. 2 GByte soldered memory and SODIMM-socket for max. 2 GByte memory module (no ECC) 1 MB Firmware hub (FWH) Serial EEPROM (24LC64) 64 kbit for CMOS data storing (no battery operation) Type I and II mounting within 4HP via mezzanine modul or alternatively Type I and II within 8HP via socket on mezzanine carrier Onboard 2.5" SATA HDD mounting within 8HP mezzanine via carrier
ONBOARD CONTROLLER	GMCH GRAPHIC MEMORY CONTROLLER HUB I/O CONTROLLER HUB VGA GIGABIT ETHERNET SUPER I/O WATCHDOG RTC	Intel® 945GM chipset Dual-channel DDR2 memory controller, Internal Graphics controller with dual independent VGA channels Intel® ICH7R Up to 4 SATA II with RAID functionality (0,1,5,10), 6x USB 2.0, 2x 1 PCI Express®, 1x 32-bit/33MHz PCI integrated on CP307 Integrated in 945GM max. 2048 x 1536 pixels (QXGA), 16M colors, @75Hz, CRT and DVI 2x GbE Front or Rear (s/w switchable), 82573L PCI Express® controller LPC Super I/O from SMSC SCH3112I-NU with 2x UART, HWMonitor, PS/2 Timeout 125ms to 256s programmable in 12 steps, NMI, IRQ, Reset, dual-stage Integrated in ICH7R with 256 bytes of battery-backed CMOS RAM
FRONT PANEL INTERFACES	4HP VERSION USB VGA ETHERNET LEDs 8HP VERSION (ADDITIONAL TO 4HP) DVI USB COM PS/2 CONTROL	 2x USB 2.0 ports, 4-pin standard USB connectors 1x VGA-CRT 15-pin D-Sub connector 2x RJ45 with integrated LEDs (ACT, SPEED) Thermal, Watchdog or both general purpose 1x 29-pin DVI-D connector 2x USB 2.0 ports, 4-pin standard USB connectors 1x 9-pin D-Sub connector, RS232 signaling 1x 6-Pin shielded mini-DIN connector Reset button and HDD LED
REAR I/O VIA J2		The Rear I/O versions support: - 32-bit/33 MHz CompactPCI® interface - Two USB 2.0 ports - Two Gigabit Ethernet ports without LED - Two SATA interfaces - Two COM ports (TTL signalling) - One CRT VGA port - One fan control input - One power management output
CompactPCI® BUS INTERFACE		PICMG 2.0 Rev. 3.0 compatible, 32-bit/33MHz, version with rear I/O on J2 PICMG 2.0; 5V VI/O (3.3V on request), 7 Req/Gnt & clock lines
SUPERVISORY FUNCTIONS		Watchdog, software configurable, 125ms to 256s in 12 steps, generates IRQ, NMI or hardware reset, two stage configuration for NMI and Reset Hardware monitoring SCH3112 for thermal control, fan-sense/control and all important onboard voltages.
HOT SWAP		Support for all signals to allow peripheral boards to be hot swapped. The individual clocks for each slot and access to the backplane ENUM# signal comply with the PICMG 2.1 Hot-Swap specification.
COMPLIANCY		CompactPCI® Core Specification PICMG 2.0 Rev. 3.0 CompactPCI® Hot Swap Specification PICMG 2.1 R2.0 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
POWER CONSUMPTION	L2400 1.66GHZ AND 2GB MEMORY	typ. 18W

TECHNICAL INFORMATION

GENERAL	DIMENSIONS WEIGHT MTBF	100 x 160mm 320g / 4HP, 400g / 8HP 141,543 h acc. to MIL-HDBK-217 FN2, Ground Benign GB, controlled at 30°C
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, LAN boot support - Board identification number accessible via EEPROM - Support for Windows XP®, Windows® XP Embedded, Windows® 7, Windows® Embedded Standard 7, Linux, VxWorks (other OSs may be possible, please contact us for information)
ENVIRONMENTAL	OPERATING TEMPERATURE STORAGE TEMPERATURE CLIMATIC HUMIDITY ALTITUDE	0°C to +60°C (depending on processor version and available airflow in the system) -40°C to +85°C with ULV 1.2GHz processor -55°C to +85°C Non condensing 93% at 40°C (acc. to IEC 60068-2-78) 50,000 ft. (15,240 m)

ORDERING INFORMATION

ARTICLE	DESCRIPTION
CP307-SA-1.2D-1-8F-CF4-E2-CR-5V	Core Duo U2500, 1.2 GHz, 2MB L2, 1GB soldered, 8HP, Front I/O, with CompactFlash 4GB, extended temp. range E2, with conformal coating and ruggedization service, 5V VI/O
CP307-SA-1.2D-1-8R-E2-CR-5V	Core Duo U2500, 1.2 GHz, 2MB L2, 1GB soldered, 8HP, Rear I/O, extended temp. range E2, with conformal coating and ruggedization service, 5V VI/O
CP307-SA-1.6D-1-8F-5V	Core Duo L2400, 1.6 GHz, 2MB L2, 1GB soldered, 8HP, Front I/O, 5V VI/O
CP307-SA-1.6D-1-8F-HC-5V	Core Duo L2400, 1.6 GHz, 2MB L2, 1GB soldered, 8HP, Front I/O, with HDD Current Size, 5V VI/O
CP307-SA-1.6D-1-8R-5V	Core Duo L2400, 1.6 GHz, 2MB L2, 1GB soldered, 8HP, Rear I/O, 5V VI/O
CP307-SA-1.6D-1-8R-C-5V	Core Duo L2400, 1.6 GHz, 2MB L2, 1GB soldered, 8HP, Rear I/O, with conformal coating, 5V VI/O
CP307-SA-1.6D-1-8R-HK-5V	Core Duo L2400, 1.6 GHz, 2MB L2, 1GB soldered, 8HP, Rear I/O, with HDD King Size, 5V VI/O
CP307-SA-1.6D-2-8F-5V	Core Duo L2400, 1.6 GHz, 2MB L2, 2GB (1GB soldered and 1GB SODIMM), 8HP, Front I/O, 5V VI/O
CP307-SA-1.6D-512-8F-3V	Core Duo L2400, 1.6 GHz, 2MB L2, 512MB soldered, 8HP, Front I/O, 3V VI/O
CP307-SA-2.0D-2-4R-5V	Core Duo T2500, 2.0 GHz, 2MB L2, 2GB (1GB soldered and 1GB SODIMM), 4HP, Rear I/O, 5V VI/O
CP307-SA-2.0D-2-8R-5V	Core Duo T2500, 2.0 GHz, 2MB L2, 2GB (1GB soldered and 1GB SODIMM), 8HP, Rear I/O, 5V VI/O
REAR TRANSITION MODULES	
CP-RIO3-04	4HP rear I/O module (2x Ethernet, 2x USB, VGA, 2x SATA connectors)
CP-RIO3-04	8HP rear I/O module (additional to 4HP COM1/2)
CP-RIO3-04S	4HP rear I/O module (2x Ethernet, VGA, COM, 2x SATA connectors)
SOFTWARE	
VXW-BSP-CP307-V6.8	VxWorks 6.8 Board Support Package

Note: Please contact your local sales representative for other configuration options.

CORPORATE OFFICES

EUROPE, MIDDLE EAST & AFRICA

Lise-Meitner-Str. 3-5
86156 Augsburg
Germany
Tel.: + 49 821 4086 0
Fax: + 49 821 4086 111
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

1~2F, 10 Building, No. 8 Liangshuihe 2nd Street,
Economical & Technological Development Zone,
Beijing, 100176, P.R.China
Tel.: +86 10 63751188
Fax: +86 10 83682438
info@kontron.cn