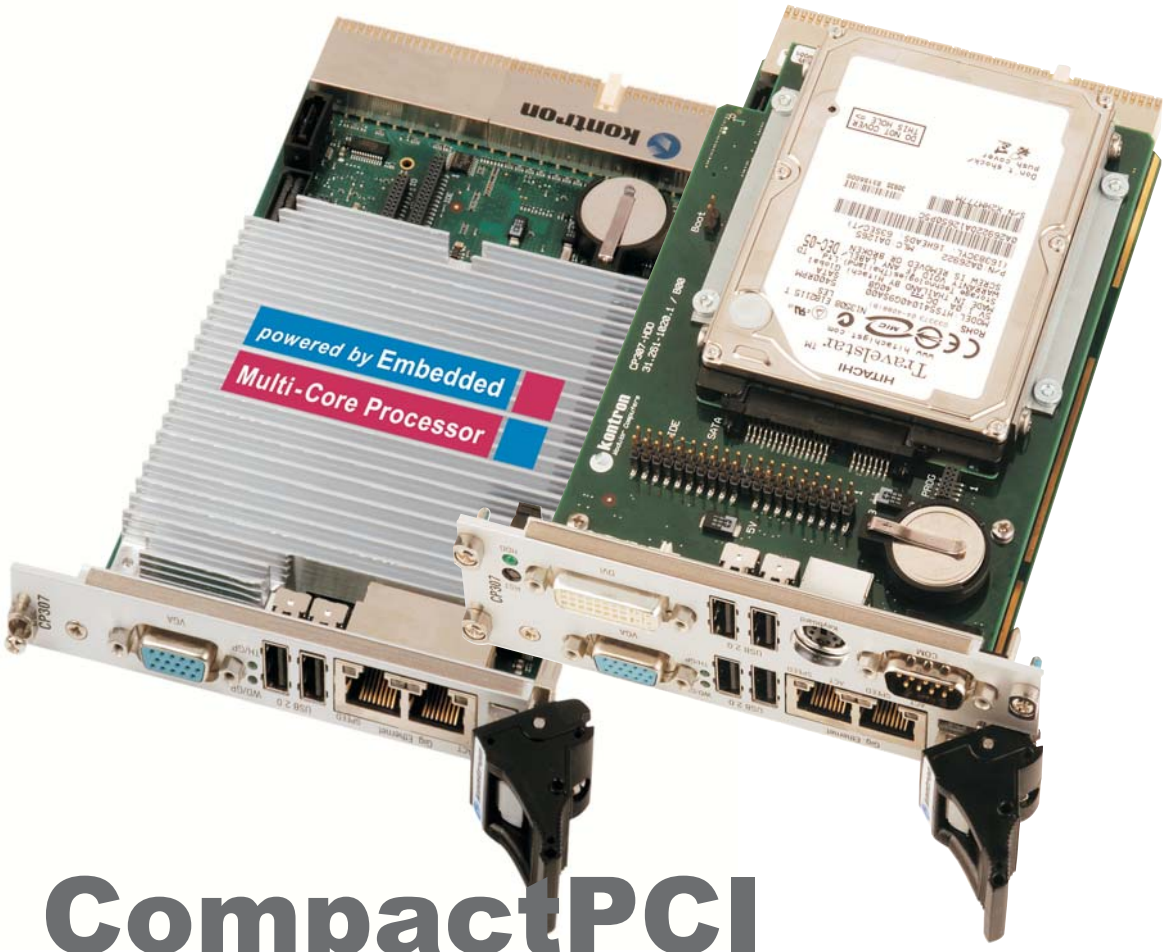
CP30764

3U Core™2 Duo Processor Rugged CPU



CompactPCI

- **Lowest Power Consumption**
  Intel® **L7400 Core™2 Duo** processor 1.5 GHz
- **Highest Memory Density**
  Up to 4 GByte dual channel **DDR2** 667MHz Memory
- **Highest Versatility**
  Comprehensive I/O capabilities:
  GigEthernet, USB, VGA, DVI, SATA, CompactFlash...

PCI EXPRESS™

intel Communications Alliance Premier

The Power of Core™2 DUO

Boost to the next level of processing power ...

Explore the power and the potential of two cores in one processor with Kontron's CP307[64] based on the Intel® 64-bit Core™2 Duo processor.

Greater Performance / Watt

The CP307[64], a 3U CompactPCI CPU board incorporates Intel s latest processor chip based on a new 65nm technology - the Intel® Core™2 Duo processor - delivering optimized power efficient computing and breakthrough dual-core performance with amazingly low power consumption.
With its two execution cores and 64-bit access, the Intel Core 2 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 gives 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[64] 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[64] offers a standard analog CRT connection with integrated 400 MHz RAMDAC and an independent DVI interface.

Greater Capacity

The CP307[64] 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

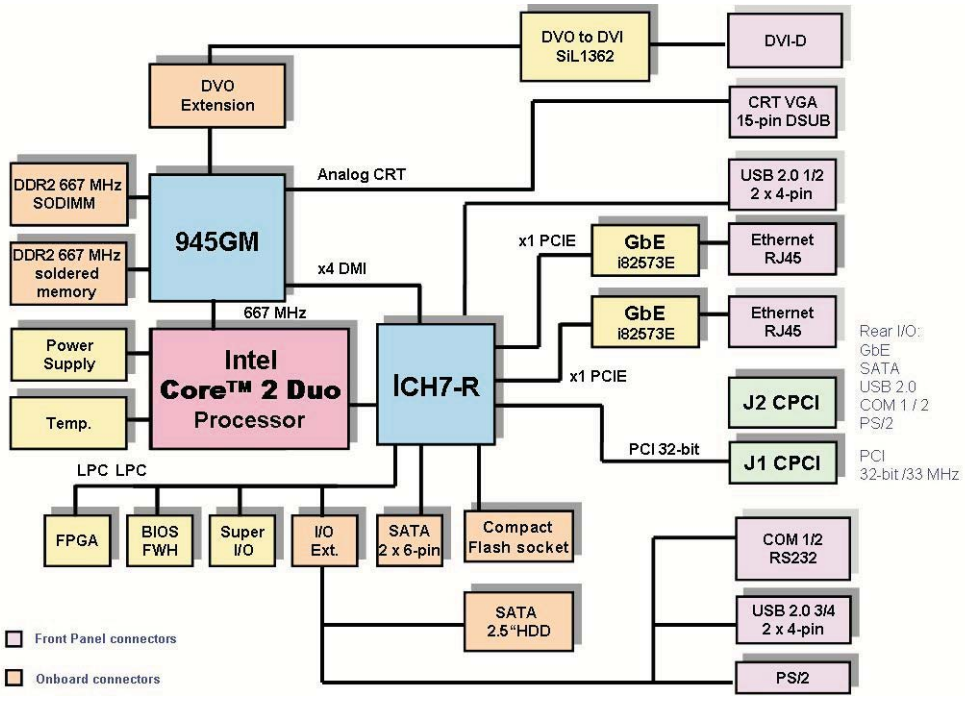
The direct soldered processor and memory provides a higher shock/vibration - resistance than socket devices can; the fan-less heat sink is tightly screwed on the board enabling the CP307[64] as an ideal solution for harsh environments.

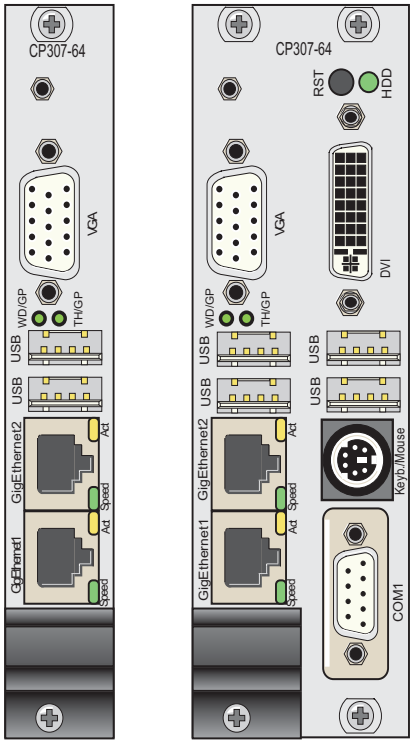
Comprehensive I/O Connectivity

The CP307[64] comes with a comprehensive I/O connectivity supporting future oriented interface 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[64] can be adapted to a wide range of different application needs.
Supporting onboard PCIExpress the CP307[64] improves I/O performance significantly eliminating the bottleneck 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[64] 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[64] provides enough headroom for the emerging next generation applications requirements.





Specification

System Processor

Intel® Core™2 Duo processor in micro-FCBGA package (65nm manufacturing process):
- L7400: LV 1.5 GHz, 667 MHz FSB, 4 MB L2, FCBGA
- T7400: 2.16 GHz, 667 MHz FSB, 4 MB L2, FCBGA 1)

1) available on project request

All L7400 based 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.

Memory

System memory:	Up to 4 GByte dual channel DDR2 667 MHz memory (currently available 2 GB) via max. 2 GByte soldered memory and SODIMM-socket for max. 2 GByte memory module (no ECC)
Flash (BIOS):	1 MB Firmware hub (FWH)
EPROM:	Serial EEPROM (24LC64) 64 kbit for CMOS data storing (no battery operation)
CompactFlash:	Type I and II mounting within 4HP via mezzanine modul or alternatively Type I and II within 8HP via socket on mezzanine carrier
HDD:	Onboard 2.5" SATA HDD mounting within 8HP mezzanine via carrier

Onboard Controller

GMCH Graphic Memory Controller Hub:	Intel 945GM chipset Dual-channel DDR2 memory controller, Internal Graphics controller with dual independent VGA channels
I/O Controller Hub:	Intel ICH7R Up to 4 SATA II controller, 6 x USB 2.0, 2 x 1 PCI-Express, 1 x 32-bit/33MHz PCI integrated on CP307
VGA:	Integrated in 945GM max. 2048 x 1536 pixels (QXGA), 16M colors, @75Hz, CRT and DVI
Gigabit Ethernet:	2 x GbE Front or Rear (s/w switchable), 82573L PCI-Express controller
Super I/O:	LPC Super I/O from SMSC SCH3112I-NU with 2x UART, HW-Monitor, PS/2
Watchdog:	Timeout 125ms to 256s programmable in 12 steps NMI, IRQ, Reset, dual-stage
RTC:	Integrated in ICH7R with 256 bytes of battery-backed CMOS RAM

Front Panel Interfaces

4HP version:

USB:	2 x 4-pin connectors
VGA:	1x VGA-CRT 15-pin D-Sub connector
Ethernet:	2 x RJ45 with integrated LEDs (ACT, SPEED)
LEDs:	Thermal, Watchdog or both general purpose

8HP version (additional to 4HP):

DVI:	1x 29-pin DVI-D connector
USB:	2 x 4-pin connectors
COM:	1x 9-pin D-Sub connector
PS/2:	1x 6-Pin shielded mini-DIN connector
Control:	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 System master
5V VI/O (3.3V on request), 7 Req/Gnt & clock lines
Version with rear I/O on J2 PICMG 2.0

Supervisory Functions

Watchdog, software configurable, 125 msec to 256 sec. 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 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

General

Dimensions:	100mm x 160mm
Weight:	320g / 4HP, 400g / 8HP
MTBF:	141,543 h acc. to MIL-HDBK 217FN2, Ground Benign GB, controlled at 30C

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, XP Embedded, Linux®, VxWorks
(other OSs may be possible, please contact us for information).

Power Consumption

L7400 LV 1.5 GHz and 2GB memory:	typ. 25W

Environmental

Operating temp.:	0°C to +60°C (depending on processor version and available airflow in the system)
Storage temp.:	-55°C to +85°C
Climatic Humidity:	non condensing 93% at 40 C (acc. to IEC 60068-2-78)
Altitude:	50,000 ft. (15,240 m)

Ordering Information

Product	Description	Order No.
	CPU Baseboard	
CP307[64]-F-1.5D-1GS-5V	L7400 1.5GHz LV Core 2 Duo, 4MB L2 cache, Front I/O, 1GB soldered, 5VI/O	35817
CP307[64]-F-1.5D-2GD-5V	L7400 1.5GHz LV Core 2 Duo, 4MB L2 cache, Front I/O, 1GB soldered + 1GB SODIMM, 5VI/O	35818
CP307[64]-R-1.5D-2GD-5V	L7400 1.5GHz LV Core 2 Duo, 4MB L2 cache, Rear I/O, 1GB soldered + 1GB SODIMM, 5VI/O	35819
	Frontpanel	
CP307-EXT-CRT	4HP front panel extension module (2x Ethernet, 2x USB, LED's, VGA)	33661
CP307-EXT-IOIDE 1)	8HP (additional to 4HP DVI,2x USB, COM, PS/2, Reset button, SATA HDD mounting option)	33662
	Rear IO Module	
CP-RIO3-04	4HP rear I/O module (2x Ethernet, 2x USB, VGA, onboard SATA connector)	33995
CP-RIO3-04	8HP rear I/O module (additional to 4HP COM1/2)	33996
	Software	
KIT-CP307 2)	User's Manual, BSP for Windows XP	33997
LIN-BSP-CP307 2)	Linux Board Support Package	33998
VXW-BSP-CP307	VxWorks Board Support Package using CP307[64] in single-core mode	35811
Note:	1) HDD must be ordered separately 2) Free of charge downloadable from the Internet please contact your local sales representative for other configuration options	

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