CPC2000

Fastwel
Creating the Future!

ETX/XTX Computer-On-Module based on Intel® Core™ 2 Duo

Fast Ethernet

SERIAL ATA 3 Gb/s

-40°C +85°C

- Low voltage Intel® Core™ Duo/ Core™ 2 Duo with 667 MHz FSB or ultra low voltage Intel® Celeron® M 423 with 533 MHz FSB
- 400/533/667 MHz DDR2 memory
- Four ×1 or one ×4 PCI Express
- 32-bit PCI interface
- 16-bit ISA interface
- Fast Ethernet port
- Independent CRT and dual LVDS display support
- High Definition Audio interfaces
- Six USB 2.0 ports, two COM ports
- Up to 4 GB soldered IDE Flash disk
- Two Serial ATA II, two IDE Ultra ATA/133
- Operating temperature:
  0°C to +70°C — commercial
  -40°C to +85°C — industrial

Best solutions to fit your demands!

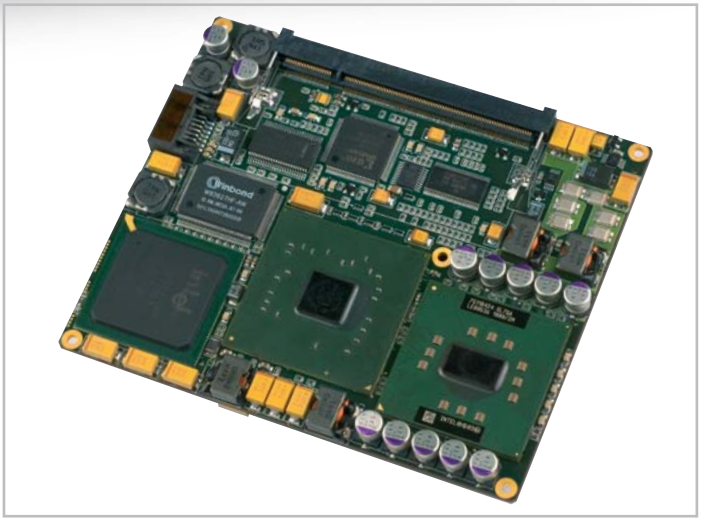
http://www.fastwel.com

Fastwel

CPC2000

ETX/XTX Extended COM based on Intel® Core™ 2 Duo

PRELIMINARY VERSION



Features

- Low voltage Intel® Core™ Duo/ Core™ 2 Duo CPU with 667 MHz FSB or ultra low voltage Intel® Celeron® M 423 with 533 MHz FSB
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Overview

CPC2000 is a full-functional computer-on-module compliant to latest ETX ver.3.0 standard. It has a rich set of multimedia and communication interfaces required by high-performance embedded systems targeted for medical, industrial, telecom, transport and other applications. CPC2000 allows customers to acselerate development of customised solutions where embedded computer functionality is performed by CPC2000 while application specific functions and interfaces are implemented at customer designed carrier board.

The board is based on Intel® Core™ Duo processor 440 uFBGA up to 2 GHz/Celeron® M processor 423 (Yonah Single Core) ULV with 533 or 667 MHz front side bus and Intel® chipset comprising 945GM GMCH and ICH7-M ICH. Dynamic Memory interface supports up to 1 GB DDR2 SDRAM through SODIMM socket.

All ports and expansion interfaces of CPC2000 reside in 4 connectors (X1-X4), which are standard for ETX form-factor. Additional connector (X5) with a set of extra interfaces having pin-outs identical to those of X2 connector of XTX Specification Ver. 1.0. Customer may choose required interfaces and connectors to be plugged into application specific carrier board, for implementation of required board functionalities.

Through X1-X4 connectors CPC2000 module supports dual LVDS panels, QXGA CRT and high definition audio interfaces for multimedia rich applications. Expansion interfaces include both 32-bit PCI and 16-bit ISA buses. Standard communication ports include: Fast Ethernet, 4 USB 2.0, 2 COM, IRDA and PS/2 ports. Among storage interfaces there are FDD and 2 channel IDE for hard disks and CD drives.

Extra interfaces provided by X5 connector include: SATA II, 4 x1 PCI-Express, LPC, AC Link and additional 2 USB ports.

CPC2000 module itself has one SODIMM socket for DDR2 SDRAM, soldered IDE Flash Disk drive up to 4 GB, additional SATA II interface connector. Additional reliability of CPC2000 module is provided by temperature sensors and supply voltage monitoring as well as CMOS memory back-up.

CPC2000 module is available in two versions: for operation in commercial (0°C to +70°C) and in industrial (–40°C to +85°C) temperature ranges.

Technical Specifications

System

- CPU: Low voltage Intel® Core™ Duo/ Core™ 2 Duo with 667 MHz FSB or ultra low voltage Intel® Celeron® M 423 with 533 MHz FSB
- Chipset: 945GM GMCH & ICH7-M
- 1 GB DDR2 SDRAM 400/533/667 MHz, 1 SODIMM socket
- Reserved CMOS memory

BIOS

Phoenix® BIOS with
- LAN Boot
- USB Boot
- Multi Boot
- Quick Boot

Graphics

- Video controller integrated in 945GM with Intel Graphics Media Accelerator 950 technology and dual independent data pipes
- QXGA (2048×1536) analog interface
- Dual LVDS interface supports 2×18 bpp panels with UXGA resolution (1600×1200)

Storage

- Two IDE Ultra ATA/133 interfaces
- Two Serial ATA II interfaces
- Onboard IDE Flash disk up to 4 GB (maximum bandwidth 10 MB/s)

Software support

- Fastwel DOS™ (MS™ DOS compatible)
- Windows XP®, XPE
- Windows CE
- QNX v4.20, 6.0®
- Linux® 2.4.20, 2.6.11

I/O Interfaces & Expansion

- One Fast Ethernet port 10/100 Mb/s
- Four ×1 PCI Express interfaces
- 32-bit PCI interface
- 16-bit ISA interface
- Audio ports: High definition audio codec AD1986, Line Input, Line Output, Microphone Input
- Six USB 2.0 ports
- COM1 and COM2 TTL interface
- PS/2 mouse and keyboard ports
- Parallel port: Bi-directional SPP standard rate, expanded rate EPP v.1.7 & v.1.9, high-speed rate ECP, IEEE 1284
- CPU temperature control and additional on-board temperature sensors
- Suspend-to-RAM feature support

Mechanical

- Dimensions: 114×95 mm (4.56"×3.8")
- Weight: 0.1 kg

Power requirements

- +5 V @ 6 A

Environmental conditions

- Operating temperature ranges:
  0°C to +70°C — commercial
  –40°C to +85°C — industrial
- Storage temperature: –55°C to +95°C
- Humidity: 95% noncondensing
- Shock/Vibration: 50G/2G

Compliancy

- ETX Component SBC specification. Rev 2.8
- ETX Component SBC specification. Rev 3.0

List of Deliverables

- CPC2000 Board
- Cables set
- Heatsink for CPU and GMCH Hub
- Screws set
- CD with drivers and documentation

Warranty

- 3 years for parts and labor

CPC2000

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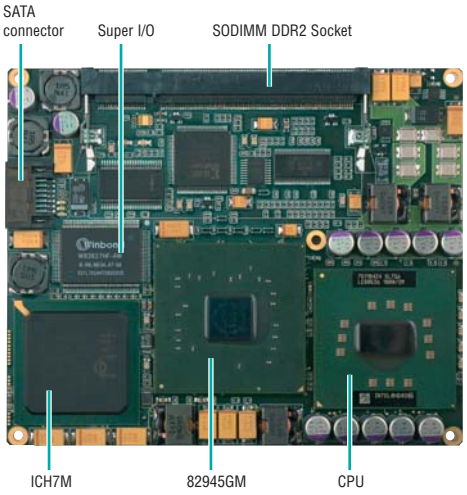
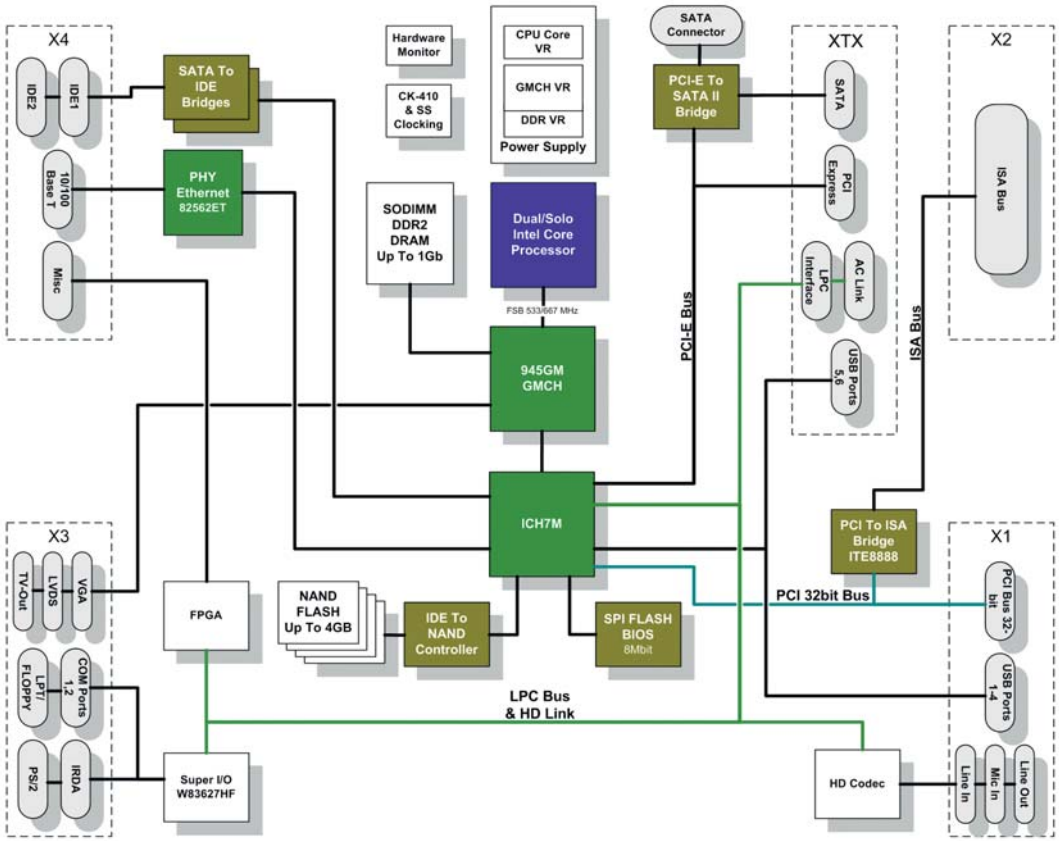
Board Layout



CPC2000 with heat spreader



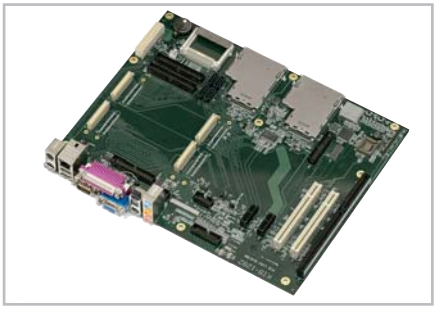
KIB1282

ATX form-factor compliant carrier board for ETX/XTX computer modules

Interfaces

- VGA, S-Video, LVDS
- 1×FastEthernet 10/100-BaseT RJ45
- 2×1 PCI Express, 2×PCI, 1×ISA (16-bit)
- 4×USB2.0
- IDE UltraATA, 4×SATA, CF Type I/II socket with IDE interface
- 2×COM232, LPT, FDD, PS/2
- 2×Express™ Card slots
- Audio line-in/out AC'97 HD (5+1 out) Audio Codec, 2×MIC
- IrDA, LPC interface, SMBUS, PLCC, fan connector, control&signalling interfaces and LEDs
- ATX power supply

Please read User manual for complete product description.



CPC2000
ETX/XTX Extended COM based on Intel® Core™ 2 Duo

Ordering Information

CPC2000 Configuration

CPC2000-01-CD2.0-SODIMM1024-I\Options

Device Type

CPC2000	CPC2000 ETX Extended, Intel® Core Duo, Intel® 945GM/ICH7-M chipset, DDR2, 4 ×1 PCI Express, PCI, ISA, 6 USB, 2 COM, 2 SATA II, 2 IDE ATA 133, Dual LVDS, CRT, HD Audio, 4 GB FFD

Processor

C2D1.5	1.5 GHz Intel® Core™ 2 Duo L7400 soldered low voltage, 667 MHz FSB
CD1.6	1.66 GHz Intel® Core™ Duo Low Voltage L2400 (soldered), 667 MHz FSB
CS1.0	1.0 GHz Intel® Celeron® M (Yonah Single Core) 423 ULV (soldered), 533 MHz FSB

SODIMM Memory Module

SODIMM512	512 MB DDR2 SODIMM SDRAM
SODIMM1024	1024 MB DDR2 SODIMM SDRAM

Temperature Ranges

I	Industrial Range, –40…+85°C
C	Commercial Range, 0…+70°C

Options

\xxx	Choose available options from the table

CPC2000 Available Options

Coating	
\COATED	Protective coating

Other configurations and options are available upon request.

Example

CPC2000-01-CD2.0-SODIMM1024-C\COATED

ETX Extended, Intel® Core Duo, Intel® Chipset 945GM/ICH7-M, DDR2, 4 ×1 PCI Express, PCI, ISA, 6 USB, 2 COM, 2 SATA II, 2 IDE ATA 133, Dual LVDS, CRT, HD Audio, 4 GB FFD
1024 MB DDR2 SODIMM SDRAM
Commercial temperature range 0…+70°C
Protective coating

Ver. 0.2 2009
Product specifications are subject to change without notice

Applications

Mobile

Industrial Automation

Communications

Embedded

Corporate Offices

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