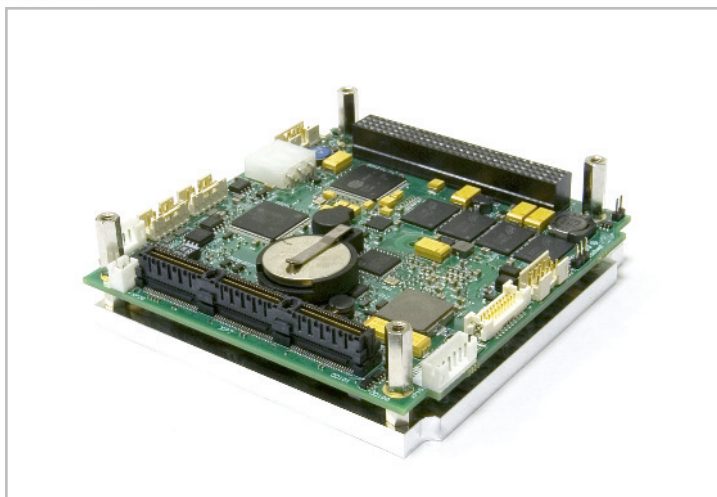# CPC309 Intel Atom D510

Based SBC with StackPC* expansion connector

Features

- Intel Pineview-D Dual Core (D510) 1.66 GHz
- DDR2-667 64 bit 2 GB (Onboard)
- 4 GB SATA SLC Flash drive (Onboard)
- 2×SATA II on StackPC
- Compact Flash Card slot
- 2×USB 2.0, 6×USB 2.0 on StackPC 2×SIM-cards
- Watchdog 1×Fixed; 1×Programmable
- Operating temperature range: –40°C to +85°C (CPC309-01), and –50°C to +85°C* (CPC309-02)

Overview

Fastwel CPC309 is a single-board computer in StackPC format. In addition to the standard StackPC* interfaces it has VGA, LVDS and RS-232, soldered NAND Flash and soldered RAM.

*StackPC: 4×1 PCI_Express, 6×USB 2.0, 2×SATA II, 2×RS-232, LPC, SMBus, Ethernet.

Technical Specifications

Processor
- Intel Pineview-D Dual Core (D510) 1.66 GHz
- IA 32-bit & 64-bit technology
- Intel SIMD2 & 3 (SSE2 + SSE3 + SSSE3)
- Intel® Hyper-Threading Technology (4 threads)
- L2 Cache 1 MB

System memory
- DDR2 SDRAM 667 MHz, without ECC, 2 GB soldered

Integrated graphics controller
- 2D/3D-accelerator
- VGA output (resolution up to 2048×1536 60Hz), onboard
- LVDS interface (resolution up to 1366×768 60Hz, single-channel 18 bit mode), onboard

PCI bus
- Routed to PCI104 connector
- Support for v2.3
- 32-bit /33 MHz
- Support for up to 4x bus master devices

LPC bus
- Routed to 20-pin connector
- Compatibility with 1.0 specification
- Support for 1×Master/DMA devices

FLASH BIOS
- 16 Mb SPI-Flash
- Modifiable within the system

FLASH-disc
- 4 GB NAND Flash (Dual Channel), connected to SATA interface: (50 MB/s read, 45 MB/s write)

Connector for Compact Flash, type 2
- Support for TYPE1/TYPE2 modules
- Support for UDMA mode

SATA II interface
- Up to 300 MB/s transmission rate
- 2x standard onboard SATA-connectors

2×LAN 10/100/1000 Mb ports on two PCIe x1
- 1x onboard connector is used

USB-port
- Support for USB 1.1 (12 Mb/s), USB 2.0 (480 Mb/s)
- Connection up to 2 devices via IDC on the board;
- Connection up to 6 devices via StackPC

Serial ports
- COM1, COM3: RS-232 (up to 115 Kb/s)
- COM3, COM4: TTL UART (TX\RX\RTS), routed to StackPC connector (supported only in modules starting with version 2.0)

Digital I/O port
- 8 input/output lines, individually programmable (3.3 V, 8 mA)

PS/2 keyboard/mouse port
- Onboard connector

FRAM memory
- When operating without battery, CMOS settings are saved in FRAM
- 31 Kb available for the user

RTC
- Battery backed, CR2032 (3 V)
- Can function without battery

Audio
- Audio and modem codec AC'97 (HD Audio)
- Linear stereo input/output
- Input for microphone

Watchdog timer
- WDT1 with fixed timeout period
- WDT2 programmable timeout

LED for module's operation mode
- Connector for external LEDs
- Support for the following LEDs: Ethernet1 and Ethernet2 activity, disc subsystems activity, watchdogs timeout, power supply LEDs
- The board is also equipped with power supply LEDs and 2 software-controlled LEDs

OS compatibility
- MS DOS 6.22, FreeDOS
- Windows XP (Embedded)
- Linux 2.6
- QNX 6.5

Power supply and consumed current
- +5 B ±5%, no more than 2.9 A

Humidity
- Up to 80%, without condensation

Resistance to multiple shocks/vibration
- 50g/5g – for CPC309-01
- 100g/10g – for CPC 309-02

Operating temperature range
- From – 40°C to + 85°C – for CPC309-01
- From – 50°C to + 85°C* – for CPC309-02

MTBF
- No less than 175 000 hours
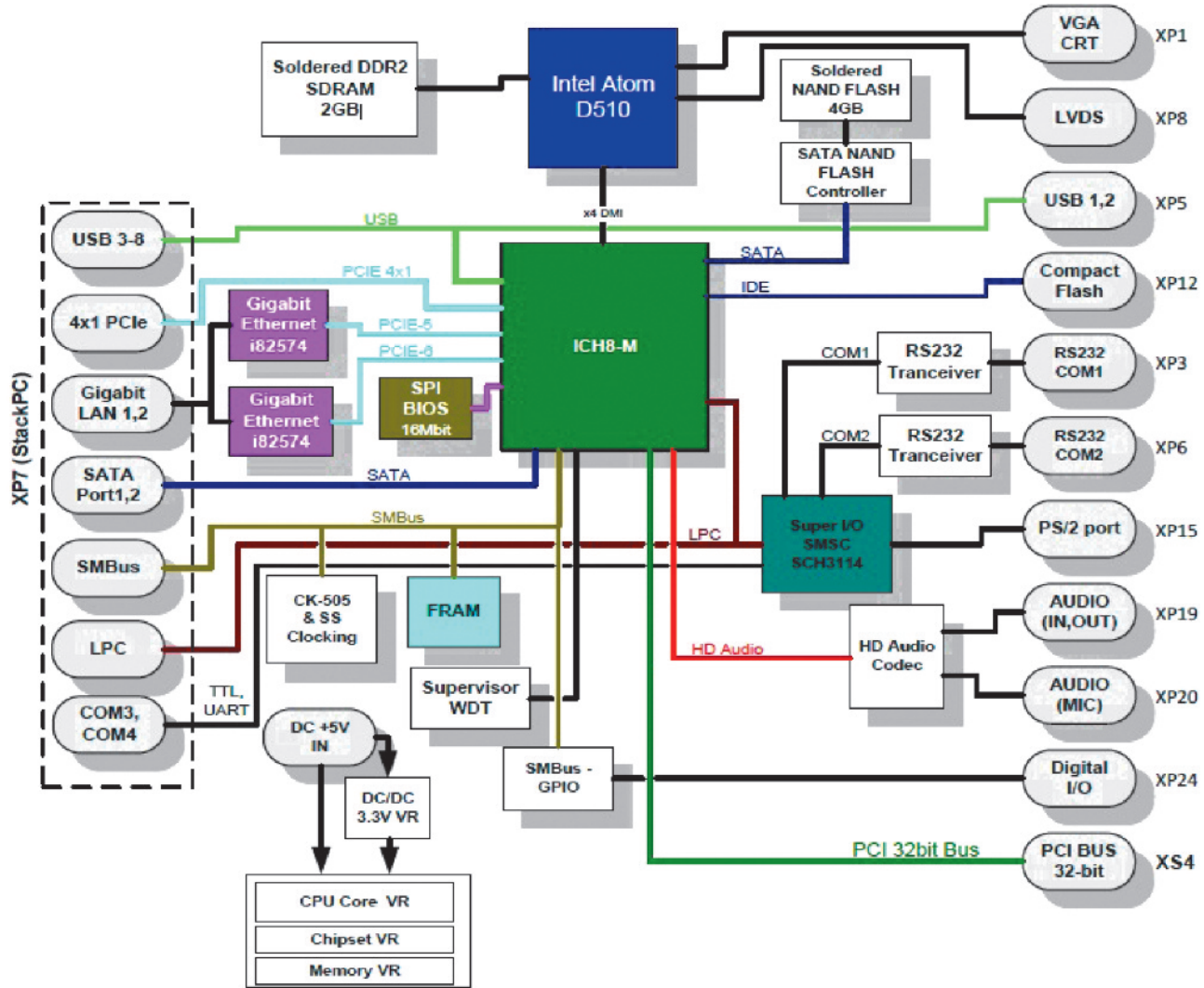
Dimensions
- 96,5 mm x 96,0 mm x 29,0 mm

Weight
- 260 g

Fastwel

Board Layout

Ordering Information

CPC309 Configuration

CPC309 - 01 \ Options

Version

01	Intel Atom D510/ 2 GB DDR2 RAM/ 4 GB NAND Flash/ Compact Flash/ 2×SATA/ Digital IO/ 2×Ethernet/ 8×USB 2.0/ 2×RS-232/ 2×TTL UART/ VGA/ LVDS
02	Intel Atom D510/ 2 GB DDR2 RAM/ 4 GB NAND Flash/ Compact Flash/ 2×SATA/ Digital IO/ 2×Ethernet/ 8×USB 2.0/ 2×RS-232/ 2×TTL UART/ VGA/ LVDS/ –50°C…+85°C

Options

\ Windows XP (Embedded)
\ Linux 2.6
\ Conformal coating

Delivery checklist:

1. CPC309 module
2. ACS00023-04 – Adapter cable for connection to COM1, COM2 (DB9M - IDC10)
3. ACS00027-02 – Adapter cable for connection to VGA monitor (DB15F - IDC10)
4. ACS00043 – Adapter cable for PS/s keyboard and mouse connection
5. ACS00059 – Socket with contacts for connection of a power supply
6. Jumper 2 mm for XP9, XP26 connectors (2 pcs)
7. Package

Additional accessories and cables:

1. ACS00031-01 – ACS00031-01 Installation Kit – JST PHR-5 socket with a set of contacts SPH-002T-P0.5S (for Audio connector)
2. ACS00031-02 – ACS00031-02 Installation Kit – JST PHR-6 socket with a set of contacts SPH-002T-P0.5S (for KB/Mouse connector)
3. ACS00031-03 – Installation Kit ACS00031-03 – JST PHR-6 socket with a set of contacts SPH-002T-P0.5S (for Mic In connector)
4. ACS00037 – Installation Kit ACS00037. Hirose DF13-20DS-1.25C socket and a set of DF13-2630SCF contacts (for connection of LVDS panel)
5. ACS00035-01 – Radiator and installation screws

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Product specifications are subject to change without notice

Corporate Offices

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