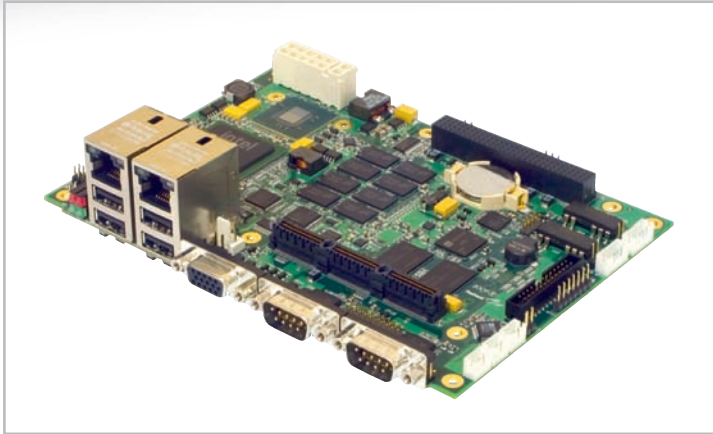


# CPC805

EPIC SBC based on Intel® Atom N450 1.66 GHz  
with StackPC\* expansion connector



## Features

- Intel Atom N450 processor (1.66 GHz)
- 2GB DDR2 SDRAM (soldered)
- 4GB NAND flash
- StackPC: 4-1 PCI-Express, 6-USB 2.0, 2-SATA II, 2-USB 2.0, 2-SATA II, 2-RS-232, LPC, SMBus, Ethernet
- Two 10/100/1000 Mbit/s ports
- 32-bit PCI, LPC, PCI-E, SMBus
- Compact flash socket
- USB 1.1, 2.0 port
- Six COM ports
- PS/2 keyboard/mouse port
- VGA, LVDS interfaces
- Industrial operating temperature range: -40°C to +85°C
- Protective coating (option)

## Overview

CPC805 is a single board computer based on Intel® Atom N450 processor operating at 1.66 GHz. The core of Intel® Atom N450 processor has a unique performance to power consumption ratio.

CPC805 is designed for the systems requiring reliable embedded computers combining small size and high performance. Such systems can be used for data acquisition and processing, for video processing, in telecommunications, for building computer networks, etc. For example, they can be devices for video communication, testing and medical equipment, traffic control systems, security and access control systems, process control systems. The StackPC\* connector allows connection of additional expansion modules to CPC805.

Intel® Atom N450 processor is a highly integrated solution combining the processor core, DDR2 SDRAM memory controller and graphics controller with 2D/3D acceleration. This module provides great opportunity to work with graphics through VGA or TFT LVDS interfaces. There are two Gigabit Ethernet ports for the networking.

The module has up to 2 GB DDR2 memory onboard.

CPC805 processor module also has a set of standard PC interfaces: USB 2.0 ports, SATA, serial ports, CompactFlash socket, PS/2, audio and one multi-mode parallel port.

The components of CPC805 are carefully selected on the criteria of applicability in embedded systems and long-term availability in the market. This makes CPC805 an ideal device for building systems with long life cycle.

The module is compatible with MS DOS, Fastwel DOS, Microsoft® Windows® XP Embedded, Windows 7 (Windows Embedded Compact 7), QNX and Linux® operating systems.

## Technical Specifications

### System

- CPU: Intel Atom N450 1.66 GHz: IA 32-bit & 64-bit technology; Intel SIMD2 & 3 (SSE2 + SSE3 + SSSE3); Hyperthreading; Level 1 cache: 32 KB instr., 24 KB data; Level 2 cache: 512 KB; Intel SpeedStep
- DDR2 SDRAM 667 MHz w/o ECC up to 2 GB (soldered)
- FRAM Memory: 32 KB RAM for storage of Bios Setup parameters and user data; SPI bus Watchdog timer: Internal, programmable
- MTBF: minimum 100 000 hours

### Flash BIOS

- 8 Mbit SPI-Flash

### Graphics

- VGA: resolution up to 1400-1050 @ 60 Hz, front panel connector;
- LVDS: resolution up to 1280-800 @ 60 Hz, single channel mode, onboard connector

### Storage

- Flash disk: 2 (4) GB NAND Flash; (2 (4) channels), IDE interface; 40 (80) MB/s read, 30 (70) MB/s write
- CompactFlash Type II socket: PIO & BMIDE support; Ultra ATA 100/66/33 support
- SATA II Interface: up to 300 MB/s transfer rate; one onboard connector with Innodisk SATA DOM support; Two interfaces are routed to StackPC\* (A) connector

### Software Support

- MS DOS 6.22
- Fastwel DOS™ 6.22
- Windows XP Embedded
- Linux 2.6
- QNX 6.4

### Interfaces

- LAN: two 10/100/1000 Mb/s ports using two PC-IE x1 links: switchable between front panel and StackPC\* (A) connector
- USB: 1.1 (12 Mbps), USB 2.0 (480 Mbps) support, up to 4 devices connection via front panel connectors; Up to 6 devices via StackPC\* (A)
- PCI bus: routed to StackPC\* (B) connector; support for specification v.2.3; 32-bit/33 MHz; up to 4 bus master devices
- PCI-E Bus: routed to StackPC\* (A) connector; compatibility with PCI-E 1.1 specification; up to four x1 devices (2.5 Gbit/s); possibility to set x4 link (10 Gbit/s)
- LPC Bus: routed to StackPC\* (A) and service connectors; support for specification v1.0; support for one Master/DMA devices

- SMBus: conforms to specification v.2.0; up to 100 Kbps; routed to StackPC\* (A) connector
- SPI Interface: routed to StackPC\* (A) connector; support for up to 3 devices (CS); up to 25 MHz frequency
- Serial ports: COM1, COM3: RS-232 (up to 1.5 Mbaud), front panel connectors; COM5, COM6: RS-232 (up to 1.5 Mbaud), TTL level, available at StackPC\* (A); COM2, COM4: RS-422/485 (up to 460 Kbaud), isolated, onboard connector
- Universal parallel port: SPP, EPP, ECP modes support; onboard connector
- PS/2: keyboard and mouse port: onboard connector
- Audio: AC'97 codec (HD Audio); onboard connector (LineIn, LineOut, MicIn)
- Real time clock with CR2032 (3V) lithium battery backup
- Hardware Monitor: SMBus based; three power voltages monitoring; CPU and PCB temperatures monitoring
- Indicators: startup diagnostics LED; IDE/SATA activity; Ethernet channels LEDs (Link/Act); two programmable LEDs

### Mechanical

- Dimensions: 165-115 mm (6.49" 4.53")
- Weight: 0.365 kg

### Power

- Via external power connector from ATX source (+5V, +12V, -12V, +3.3V, +5V\_STBY voltages plus PS\_ON signal);
- From unipolar power source, 7V...30V;
- From PC/104-Plus (StackPC\*) power supply module, 18 W power consumption

### Environmental conditions

- Operating temperature range: -40°C to +85°C
- Storage temperature range: -55°C to +90°C
- Humidity: 0% to 80%, non-condensing
- Single/multiple shock stability: up to 100G/50G
- Vibration: up to 5G

### Warranty

- 3 years for parts and labor

### List of deliverables

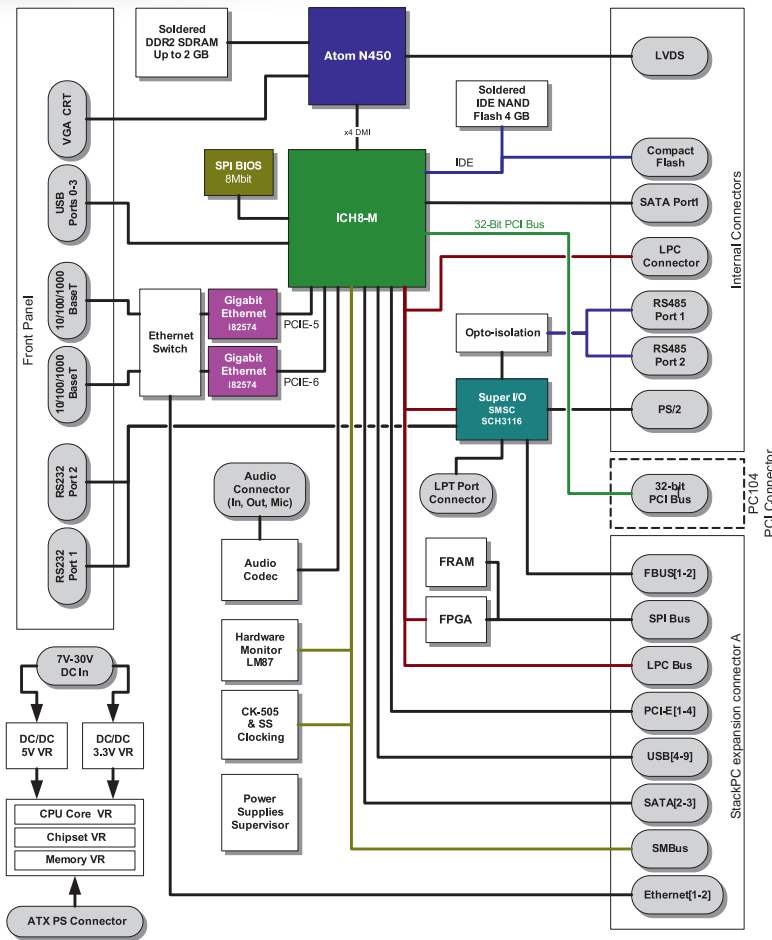
- CPC805 module
- LVDS mating connector
- CD with software and documentation
- Package

\*StackPC: 4-1 PCI-Express, 6-USB 2.0, 2-SATA II, 2-RS-232, LPC, SMBus, Ethernet.

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## Board Layout



## Ordering Information

### CPC805 Configuration

#### CPC805-01\Options

##### Device Type

CPC805-01 Atom N450 1.66 GHz, two Ethernet 10/100/1000 Mbps, four USB 2.0, one LPT, two RS-232, two RS-422/485 (isolated), -40...+85°C

##### Configurations

CPC805-01 2 GB DDR2 SDRAM, 4 GB NAND  
CPC805-02 1 GB DDR2 SDRAM, no NAND

### CPC805 Available Options

Compact Flash Module	
\CF1024	1024 MB Compact Flash, industrial
\CF2G	2 GB Compact Flash, industrial
\CF4G	4 GB Compact Flash, industrial
\CF8G	8 GB Compact Flash, industrial
\CF16G	16 GB Compact Flash, industrial
Coating	
\COATED	Protective coating
Operating System Presetting	
\DOS	MS DOS 6.22
\FDOS	Fastwel DOS
\XPE	Windows XP Embedded
\QNX	QNX 6.4
\LNX	Linux 2.6

Other configurations and options are available upon request.

### Example

#### CPC805-01\CF8G\COATED\XPE

Atom N450 1.66 GHz, 2 GB DDR2 SDRAM, 4 GB NAND, Two Ethernet 10/100/1000 Mbps, four USB 2.0, one LPT, two RS-232, two RS-422/485 (isolated), -40...+85°C  
8GB Compact flash  
Protective coating  
Windows XP Embedded

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Product specifications are subject to change without notice

## Corporate Offices

**FASTWEL GROUP Co. Ltd**  
108 Profsoyuznaya str.  
Moscow, Russia 117437  
Tel: +7 (495) 232-1681  
Fax: +7 (495) 232-1654  
E-mail: info@fastwel.com  
Web: www.fastwel.com

**FASTWEL Corporation US**  
55 Washington street, Suite 310  
Brooklyn, NY 11201  
Tel: 1.718.554.3686  
Tel: 1.718.797.0600  
Toll free: 1.877.787.8443  
(1.877.RURUGGED)  
E-mail: info@fastwel.com

**FASTWEL Asia**  
6F., No. 118, Ln.235, Baoqiao  
Rd., Xindian Dist,  
New Taipei City, Taiwan, R.O.C.  
Tel: +886-2-8912 1938  
Fax: +886-2-8912 1939  
E-mail: asia@fastwel.com

