CPC307
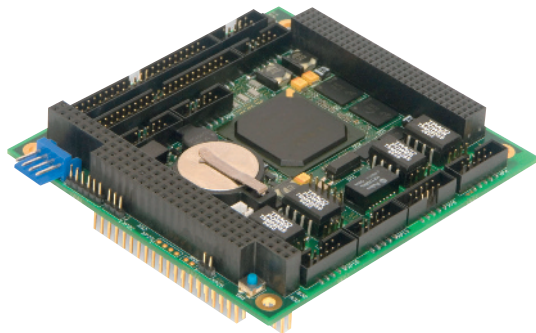## PC/104-Plus CPU Module

Features

- DM&P Vortex86DX (600 MHz) processor
- 256 MB DDR2 SDRAM
- Flash disk 1024 MB
- HDD connection, up to two devices
- Ethernet controller 10/100 Mb/s
- Two opto-isolated CAN 2.0b
- PC/104-Plus (32-bit PCI, 16-bit ISA)
- Four USB 2.0 ports
- Six COM ports
- Two I2C ports
- Eight discrete I/O lines
- 150G/10G – shock/vibration
- Industrial operating temperature range: –40°C to +85°C
- Protective coating (option)

Overview

Fastwel CPC307 is designed for applications requiring high-performance low-power industrial controller with CAN interface. Fastwel CPC307 conforms to PC/104-Plus specification and is compatible with a large number of peripheral and power supply modules delivered by a wide range of manufacturers.

Based on x86compatible Vortex 86DX processor operating at 600 MHz, the module bears 256 MB soldered DDR2 memory and wide range of input/output inter faces. CPC307 allows system designers simple programming and provides portability of previously developed libraries for x86 architecture with Fastwel DOS™, Linux®, Windows® XP Embedded and QNX® support. Having two isolated CAN ports onboard along with a wide set of popular industrial interfaces, such as RS-232, RS-485, RS-422, USB, and Fast Ethernet, CPC307 offers integrated functionality which is usually achieved by using several products from different manufacturers.

For debugging purposes or for applications requiring graphical interface, CPC307 can operate together with Fastwel VIM301 graphics controller module providing VGA, LVDS, TFT, and SGD interfaces.

Technical Specifications

CPU: DM&P Vortex86DX
- Frequency: 600 MHz
- 32 bit x86 kernel
- Floating-point unit
- 16 bit memory bus
- L1 cache 32 KB
- L2 cache 256 KB

RAM
- DDR2 SDRAM 256 MB, memory bus frequency 266 MHz

FLASH BIOS
- 512 KB parallel Flash (ISA)
- 256 KB (backup copy, SPI Flash)
- Modifiable within the system

FLASH-drive
- 1 GB NAND Flash
- Connected to IDE interface
- Connector for two memory cards.microSD (ATA Flash-drive is not installed)
- Support of microSD memory cards, microSDHC

HDD connection port
- Possibility to connect up to 2 devices (when the soldered ATA Flash-drive or microSD memory cards are disconnected)
- Support of UDMA2

PS/2 keyboard and mouse

Single channel Ethernet 10/100 Mb/sec

USB port
- Support of up to 4x devices USB 1.1, USB 2.0
- Support of booting from USB

Universal parallel port with support of SPP, EPP, ECP modes

Serial ports
- COM1, COM2: RS232/RS485/RS422, no insulation, hardware flow control, data exchange rate up to 115,2 Kbaud
- COM3, COM4: RS232, full, exchange rate up to 115,2 Kbaud
- COM5, COM6: RS422/RS485, hardware flow control, data exchange rate up to 3,6 Mbaud, channel-by-channel insulation no less than 500V

Two insulated channels CAN 2.0b
- Philips SJA1000 CAN controllers
- Data exchange rate up to 1 Mb/sec

- Channel-by-channel insulation no less than 500 V

PC/104 (ISA)
- 16-bit ISA bus, frequency 8/16 MHz

PCI/104 (PCI)
- 32-bit PCI bus, frequency 33 MHz

CMOS RAM 256 bytes

FRAM (SPI) 256 Kb
- Automatic save and restore CMOS memory settings during module's operation without the installed replaceable direct current battery
- Read/Write of user data via BIOS function

Real-Time Clock (RTC)
- Operation of RTC with module's power off is ensure by the replaceable direct current battery

Opto-isolated reset /interrupt

LEDs
- Two software-controlled LEDs
- Possibility to connect external LEDs

8x lines of digital I/O

2x I2C ports

3x watchdog timers (WDT)
- Two internal, with possibility of software control 30,5 μs … 512 sec
- One external, with a fixed actuation interval of 1,6 sec

Console I/O via serial port

Software compatibility
- FREEDOS
- MS DOS 6.22
- Linux 2.6, QNX 6.4, WinCE 5.0

Power supply
- On PC/104 and PC/104-plus connectors
- On additional power supply connector
- Consumption current up to 1 A.

Operating temperature: from –40°C up to +85°C

Humidity: from 0% up to 80%, no condensation

Vibration resistance: 5 – 2000Hz, 10 g

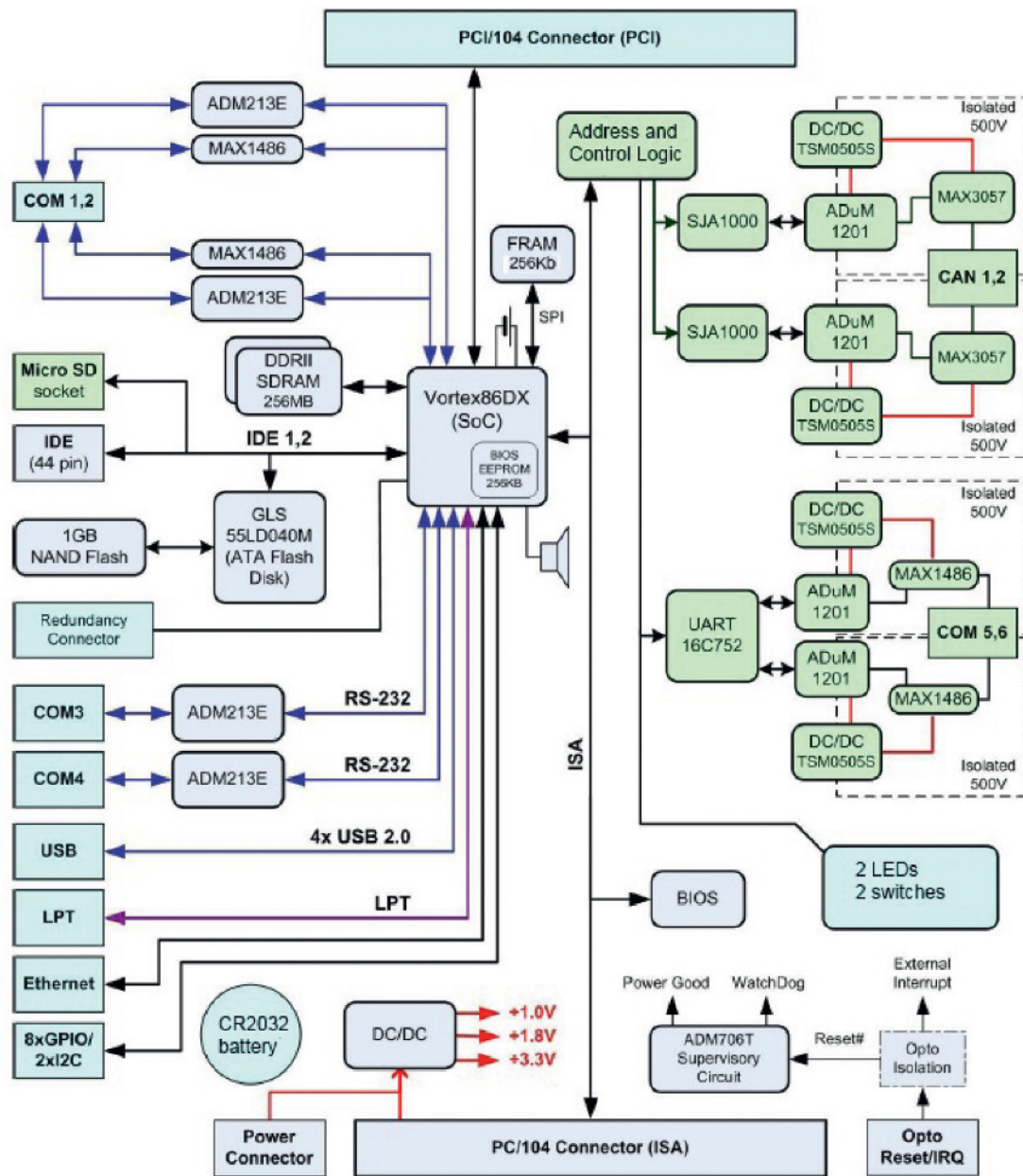**Single shock resistance:** 150 g

MTBF: 200 000 hours

Size: 90,6x101,5 mm

Weight: 0,135 kg

Board Layout

CPC307
PC/104-Plus CPU Module

Ordering Information

CPC307 Configuration

CPC307 - 01 \ Options

Configurations

01   ATA Flash Disk (soldered, 1 GB), CAN 1-2, COM 1-6, PC/104(ISA) PC-104 extension modules are installed only from module's top

02   ATA Flash Disk (soldered, 1 GB), LAN, CAN 1-2, COM 1-6, GPIO, I²C, PC104-plus (ISA, PCI),

03   ATA Flash Disk (soldered, 1 GB), LAN, COM 1-4, GPIO, I²C, PC104-plus (ISA, PCI),

04   microSD 1-2, LAN, CAN 1-2, COM 1-6, GPIO, I²C, PC104-plus (ISA, PCI)

05   ATA Flash Disk (soldered, 1 GB), LAN, CAN 1-2, COM 1-6, GPIO, I²C, PC104-plus (ISA, PCI), Conformal coating, –50…+90°C

Option

\COATED   Coating Option

\LNX   Preinstalled OS

CPC307 Available Options

Coating	
\COATED	Conformal Coating Option (for CPC307-01, -02, -03, -04)
Operating System Presetting	
\LNX	Preinstalled OS Linux 2.6 (for CPC307-01, -02, -03, -05)
\WCE5	Pre-installation as an Individual Option (for CPC307-01, -02, -03, -05)
\QNX	QNX

Other configurations and options are available upon request.

Delivery checklist

1. CPU Module CPC307
2. ACS00023 – cable adapter IDC10-DB9M for console connection to COM-port
3. Set of fastening racks
4. Packaging

Additional accessories

1. CDM02, Adapter for the connection of 3,5" HDD
2. ACS00010, Adapter for the connection of 2,5" HDD
3. ACS00023, Cable adapter IDC10–DB9M for the connection of COM-port
4. ACS00038, Power socket with contacts
5. ACS00040-01, socket IDC-10 2 mm (Leotronics)
6. ACS00040-05, socket IDC-44 2 mm (Leotronics)
7. ACS00042, Null modem cable
8. ACS00043-01, Cable PS/2, IDC-6, 2 mm

More detailed list of available accessories is given in the User Manual for CPC307

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CE

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EN ISO 9001:2000
Zertifikat: 75.100.9545
TÜV Rheinland InterCert

PC/104-Plus MODULE

READY FOR
RoHS