CPC307
PC/104-Plus Vortex86DX Based CPU Module

Features

- DM&P Vortex86DX (600 MHz) processor
- 256 MB DDR2 SDRAM: 266/333 MHz
- Flash disk 1024 MB
- Connection of HDD and optical disc drive for DVD/CD
- Ethernet 10/100 Mbit controller
- Two CAN 2.0b interfaces, SJA1000T controller
- 3 x watchdog timers: 2 software/1 hardware
- Four USB 2.0 ports
- Real-time clock
- Humidity: from 0% to 80%, non-condensing
- Dimensions: 90.6 x 101.5 mm
- 150G/10G – shock/vibration
- Industrial temperature range: -40...+85°C/-50...+90°C
- MTBF: 200,000 hours.

Overview

Fastwel CPC307 is designed for applications requiring high-performance low-power industrial controller with CAN interface. The compact 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 interfaces.

Technical Specifications

DM&P Vortex86DX SoC
- Clock frequency: 600 MHz
- 32 bit x86 core
- Floating-point unit
- 16 bit memory bus
- L1 cache 32 KB
- L2 cache 256 KB

RAM
- DDR2 SDRAM 256 MB
- Bus frequency 266 MHz for module versions lower than 4.x
- Bus frequency 333 MHz for versions 4.x.

FLASH BIOS
for versions lower than 4x.:
- 512 KB parallel Flash (ISA)
- 256 KB (backup copy, SPI Flash)
- Modifiable within the system

for 4x. module versions:
- 256 KB (SPI Flash) without BIOS backup copy
- Possibility of hardware reset of BIOS settings

FLASH-drive
- 1 GB NAND Flash for versions lower than 4x
- 2GB NAND Flash for versions 4x.
- Connected to IDE interface

Connector for 2 memory cards microSD (ATA Flash disk is not installed)
- Support of microSD, microSDHC momory cards

HDD connection port
- Connection of up to 2 devices
- Support of UDMA2

PS/2 keyboard and mouse
One Ethernet 10/100 Mb/sec channel
USB port
- Support of up to 4x devices USB 1.1, USB 2.0
- Support of booting from USB

Serial ports
- COM1, COM2: RS232/RS485/RS422, no insulation, hardware flow control, data transfer 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-to-channel isolation min. 500V

Non-volatile memory FRAM (SPI) 256 Kbit
- Automatic saving and restoring CMOS memory settings when the module is operated without DC replaceable battery installed
- Write/read user data via BIOS functions

Two isolated channels CAN 2.0b
- Philips SJA1000 CAN controllers
- Transfer rates to 1 Mb/sec
- Channel-by-channel isolation min.500V

Universal parallel port, SPP, EPP, ECP modes
PC/104 (ISA)
- 16-bit ISA bus, bus frequency 8 MHz

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

CMOS RAM 256 bytes
Opto-isolated reset /interrupt
LEDs
- Two programmable LEDs
- Possibility to connect external LEDs

8x digital I/O lines
2x I2C ports
3x watchdog timers (WDT)
- Two internal WDTs, interval 30.5 μs ... 512 s
- External fixed interval 1.6 s

Console I/O via serial port
Real-Time Clock (RTC)
- When the module's power is off, the clock is operated by a DC replaceable battery

Power supply
- On PC/104 and PC/104-plus connectors
- On an additional power supply connector
- Current consumption of 1A

Operating temperature range
- Industrial range for CPC307-02/03/04: -40...+85°C
- Industrial range for CPC307-05 -50...+90°C

Humidity
- from 0% to 80%, non-condensing

Vibration resistance
- 5 – 2000 Hz, 10 g.

Resistance to single shocks
- 150g.

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

Dimensions
- 90.6 X 101.5 mm.

Weight
- 0,135 kg.

MTBF
- Min. 200,000 hours

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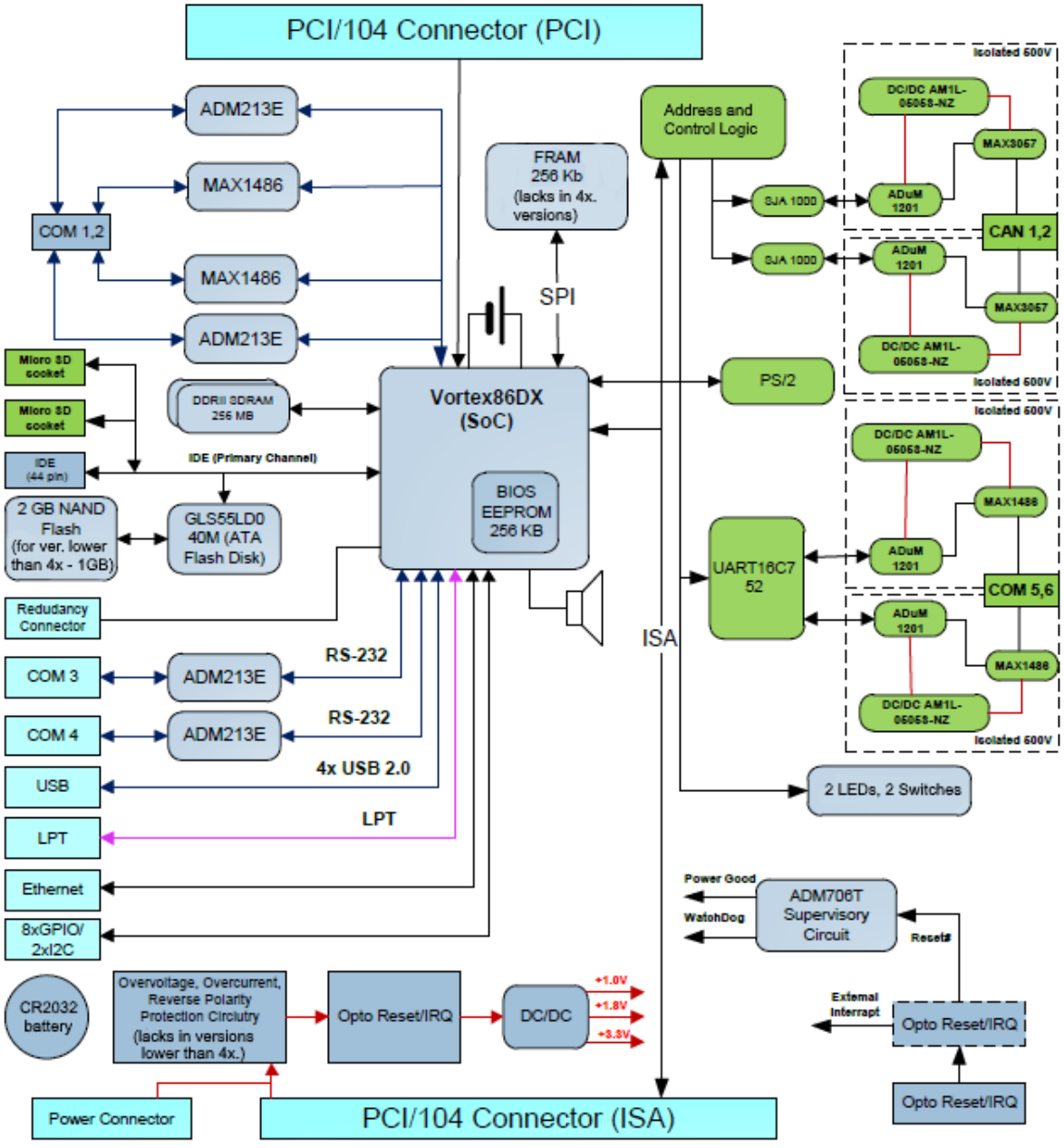
Board Layout



CPC307
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Ordering Information

CPC307 Configuration

CPC307 \ Options

Configurations

CPC307-02	RAM DDR2 SDRAM 256 MB; ATA Flash Disk (soldered); 1GB – for versions lower than 4.x; 2GB – for versions 4.x.; LAN, CAN 1-2, COM 1-6; GPIO, I2C; PC104-plus (ISA, PCI)
CPC307-03	RAM DDR2 SDRAM 256 MB; ATA Flash Disk (soldered); 1GB – for versions lower than 4.x; 2GB – for versions 4.x.; LAN, COM 1-4, GPIO, I2C; PC104-plus (ISA, PCI)
CPC307-04	RAM DDR2 SDRAM 256 MB; microSD 1-2; LAN, CAN 1-2, COM 1-6; GPIO, I2C; PC104-plus (ISA, PCI)
CPC307-05	RAM DDR2 SDRAM 256 MB; ATA Flash Disk (soldered); 1GB – for versions lower than 4.x; 2GB – for versions 4.x.; LAN, CAN 1-2, COM 1-6; GPIO, I2C; PC104-plus (ISA, PCI); conformal coating -50°C +90°C

Option

\COATED	conformal coating (for modules CPC307-02,-03,-04)
\LNX	Linux 2.6 preinstalled (for modules CPC307-02,-03,-05)

Optional pre-installation (for modules CPC307-02,-03,-05): **\WCE5 - WindowsCE 5.0** and **\QNX**

Delivery checklist

1. CPC307 PC/104-Plus Vortex86DX Based CPU Module
2. ACS00023 – IDC10-DB9M cable adapter for connecting the console to the 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 pins
5. ACS00040-01, IDC-10 2 mm socket (Leotronics)
6. ACS00040-05, IDC-44 2 mm socket (Leotronics)
7. ACS00042, null modem cable
8. ACS00043-01, PS/2 cable, IDC-6, 2 mm

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

Differences of supply configurations:

Ordering number	Storage device	LAN	CAN	COM	GPIO	I2C	Format	Coating
CPC307-02	ATA Flash Disk (soldered, **1GB** – for versions lower than 4.x; **2GB** – for versions 4.x)	LAN	CAN 1-2	COM 1-6	GPIO	I2C	PC104-plus (ISA, PCI)	-
CPC307-03	ATA Flash Disk (soldered, **1GB** – for versions lower than 4.x; **2GB** – for versions 4.x)	LAN	-	COM 1-4	GPIO	I2C	PC104-plus (ISA, PCI)	-
CPC307-04	microSD 1-2	LAN	CAN 1-2	COM 1-6	GPIO	I2C	PC104-plus (ISA, PCI)	-
CPC307-05	ATA Flash Disk (soldered, **1GB** – for versions lower than 4.x; **2 GB** –for versions 4.x)	LAN	CAN 1-2	COM 1-6	GPIO	I2C	PC104-plus (ISA, PCI)	Conformal coating, -50 °C +90 °C

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Product specifications are subject to change without notice

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CE

TÜV CERT EN ISO 9001:2000 Zertifikat: 75.100.9545 TÜV Rheinland InterCert

EMBEDDED PC PC/104-Plus MODULE

READY FOR RoHS

Fastwel