CPC522
3U Compact PCI Serial Intel Xeon/ Core i3 based CPU Module

Features

- CPU Intel Xeon E-2276ME 2.0GHz (35W)/E-2276ML(25W)(v.01);
- CPU Core i3-9100HL 1.6 GHz (for versions -02, -03, -04);
- RAM: DDR4-2666 SDRAM, up to 16 GB, with ECC support;
- Integrated GPU Intel® UHD Graphics P630;
- Resistance to sinusoidal vibration from 10 to 150 Hz, multiple shocks: 25 g, single shocks: 50 g;
- Integrated SATA SSD: 32 GB 3D NAND Flash;
- Operating temperature range: 0 to + 70°C (for -01; -02; -03) and -40 to +85°C (for -04);
- Internal watchdog, with program control capability;
- MTBF: no less than 100,000 hours.

Overview

The CPC522 CPU Module is implemented in the 3U CompactPCI Serial standard format and provides developers with a highly integrated solution on the x86 platform in 3U CPCI format for the use in real-time systems, production control, high-speed data acquisition and processing.

Along with support of all the basic functionalities of the CPC512 module, CPC 522 has a number of additional functions: increased RAM capacity, integrated high-speed solid-state drive and network controllers supporting the rates up to 2.5 Gb/s.

Technical Specifications

CPU Intel Xeon E-2276ME 2 GHz (35 W) / E-2276ML (25 W) (for the ver. 01)
- 6 x Intel x64 cores
- Configurable TDP value: up to 35 W(ME)/25 W(ML)
- 12 MB cache

CPU Core i3-9100HL 1.6GHz (for -02, -03, -04)
- 4 x cores Intel x64
- 6 MB cache

RAM
- DDR4-2666 SDRAM, up to 16 GB, with ECC support
- 64 bit data bus

Integrated GPU Intel® UHD Graphics P630
- Base frequency – 350 MHz
- Maximum dynamic frequency - 1.15 GHz
- Maximum capacity of video memory to be dedicated from the system memory – up to 64 GB
- Support of the 4K@60 Hz mode
- 2 x DisplayPort connectors (resolution up to 4096x2304@60 Hz) are routed to the front panel
- 1 x DisplayPort interface is routed to the backplane connector

LPC Bus
- Routed to mezzanine connector

PCe Bus
- CPU hosts. Support of PCI-E 3.0 (up to 8 GT/s)
- Routed to the backplane connectors with support of up to 2 x devices x8
- PCH hosts. Support of PCI-E 3.0 (up to 8 GT/s). Up to 10 x PCI Express ports

SMBus
- Compatible with the 2.0 specification
- Speed up to 100 kbps

FLASH BIOS
- 2 x 128 Mb SPI-Flash
- Modifiable within the system

SATA III interface
- 5 x interfaces are routed to the backplane connectors
- 2 x switchable with PCI Express interface are routed to the mezzanine connector
- One interface used by the integrated SATA drive
- One SATA III interface can be used by M2 interface depending on the type of the drive installed

Integrated SATA SSD
- 32GB 3D NAND Flash
- Interface: SATAIII

2 x ports LAN 10BASE-Te, 100BASE-TX, 1000BASE-T and 2500BASE-T
- Routed to the front panel connectors

USB
- 6 x USB 3.1 ports (10 MB/s)
- 12 x USB 2.0 ports

FRAM
- 32 KB, where 1 KB – closed area for storing BIOS Setup settings
- Implemented on the SPI FPGA bus

Real Time Clock (power from the RTC Battery port)
- Power supplied from the CR2032 (3 V) lithium battery

Audio
- HD Audio, routed to the mezzanine connector

Watchdog Timer
- Internal, with program control capability

SGPIO interface
- Signaling support in accordance with the SFF-8485 specification

Power supply
- +12 V
- +5 V_STBY

Resistance to external factors
- Resistance to sinusoidal vibration from 10 to 150 Hz, with acceleration up to 2 g
- Resistance to single shocks 50 g
- Resistance to multiple shocks 25 g
- Resistance to electromagnetic interference in accordance with the GOST R 51318.24-99 standard (CISPR 24-97)
- Level of the radio interference caused does not exceed the values established by the GOST R 51318.22-99 standard, Class A (CISPR 22-97)

Operating temperature range
- From 0 to + 70 °C (for versions -01; -02; -03)
- From -40 to +85 °C (for the version -04)

Software compatibility
- Linux Debian 9
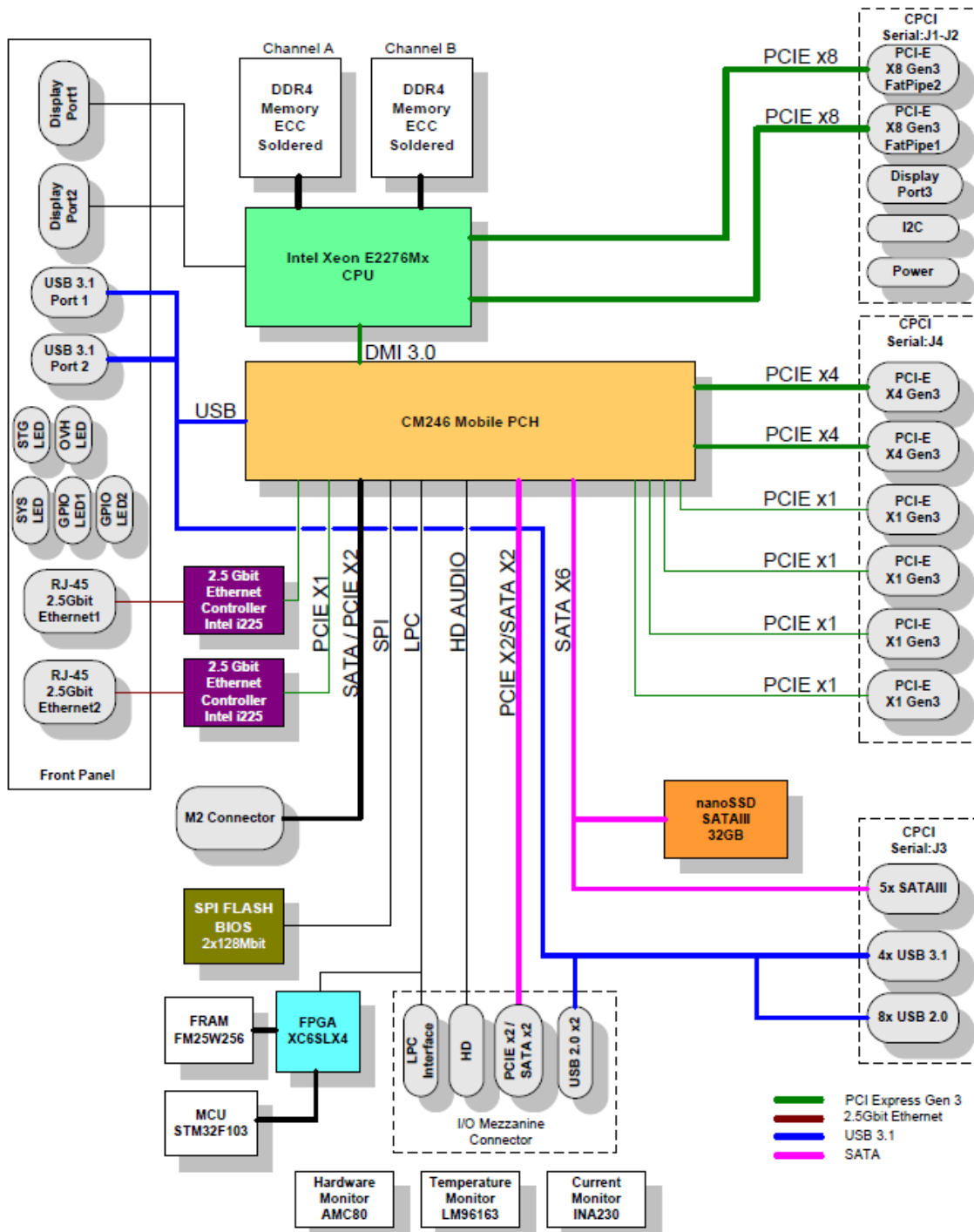- Microsoft Windows 10 IoT Enterprise 64bit

MTBF
- No less than 100,000 hours

Fastwel

Layout

Ordering Information

CPC522 Configuration

CPC522 \ Options

Configurations

CPC522-01 3U CPCI Serial Module, height: 4HP, implemented in the 3U Eurocard standard format, with 6-core CPU Xeon E-2276ML 2.0 GHz, 12MB Cache, 6 x Cores 12 x threads 25W, 16GB RAM, SSD 32GB with a low heatsink for operation in the commercial temperature range (0...+70 °C)

CPC522-02 3U CPCI Serial Module, height 4HP, implemented in the 3U Eurocard standard format, with 4-core CPU Core i3-9100HL 1.6GHz, 6MB Cache, 4 x Cores 4 x threads 25W, 16GB RAM, SSD 32GB with a low heatsink for operation in the commercial temperature range (0...+70 °C)

CPC522-03 3U CPCI Serial Module, height: 4HP, implemented in the 3U Eurocard standard format, with 4-core CPU Core i3-9100HL 1.6GHz, 6MB Cache, 4 Cores 4 x threads 25W, 16GB RAM, no SSD, with a low heatsink for operation in the commercial temperature range (0...+70 °C)

CPC522-04 3U CPCI Serial Module, height: 8HP, implemented in the 3U Eurocard standard format, with 4-core CPU Core i3-9100HL 1.6GHz, 6MB Cache, 4 x Cores 4 x threads 25W, 16GB RAM, SSD 32GB with a high heatsink for operation in the industrial temperature range (-40...+85 °C)

Options   \Coated   Conformal coating

Delivery checklist

CPC522 delivery checklist contains:

1. CPC522 3U Compact PCI Serial Intel Xeon/ Core i3 based CPU Module
2. Installation kit
3. Packaging

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