CPC505
6U CompactPCI Serial CPU Module

Features

- CPU: Intel Xeon E-2276ML 2.0 GHz, (Coffee Lake-H Refresh);
- CPU: Intel Core i3-9100HL 1.6 GHz (Coffee Lake-H Refresh);
- RAM: DDR4-2666 SDRAM, up to 32 GB with ECC support;
- Internal Watchdog Timer;
- Hardware monitor: Implemented via PECI / SMBUS interfaces, monitoring 3 supply voltages, CPU and PCB temperatures;
- Operating temperature range: -40 to +85 °C (industrial) and 0 to +70 ° C (commercial);
- Integrated SSD 32 GB;
- FLASH BIOS: 2 x 128 Mb SPI-Flash;
- OS compatibility: Linux Debian 10, Astra Linux Special Edition, "Smolensk" releases v1.5, v1.6, Microsoft Windows 10 IoT Enterprise 64bit;

Technical Specifications

Overview

The CPC505 CPU Module is implemented in the standard 6U CompactPCI Serial format with support of XMC/PMC extension modules and RIO modules.

The module is based on the 9th generation Intel processors with a modern set of high-speed interfaces and an integrated graphics core.

The module is recommended for new designs as a more modern and efficient replacement for the CPC503 module. CPC505 has a similar set of front panel interfaces and is compatible with the RIO587 Rear I/O Module.

CPU

Intel Xeon E-2276ML 2.0GHz 25W (Coffee Lake-H Refresh)
- 6 x Intel x64 cores, 12 x threads;
- 3 x graphics cores;
- 12 MB cache;

Intel Core i3-9100HL 1.6GHz,25W (Coffee Lake-H Refresh)
- 4 x cores Intel x64, 4 x threads;
- 3 x graphics cores;
- 6 MB cache;

RAM

- DDR4-2666 SDRAM, up to 32 GB with ECC support;
- 64 bit data bus;

Video output

- DVI-I interface (1920x1200@60 Hz), front panel;
- DisplayPort interface (4096x2304@60 Hz), front panel;
- DisplayPort interface (4096x2304@60 Hz), RIO;
- LVDS interface (1920x1200@60 Hz), RIO;
- Simultaneous operation of 3 x interfaces is possible;

PCI Bus

- Routed to the CompactPCI J1/J2 connectors;
- 64 bit/66 MHz;
- Implemented on the bridge PCIe->PCI-X PI7C9X130;
- HotSwap support;
- Oper. in a peripher. slot (Non-transparent Bridge mode);

LPC Bus

- Routed to the P16 XMC connector;
- Routed to the RIO;

PCIe Bus

- PCIeGen3 (up 8GT/s) rout. to P15XMC w/ up to x8 dev.;
- PCIeGen2 (up 5GT/s) rout. to CPCIJ3/P3 w/ up to x4 dev.;
- XMC, compatible w/ ANSI/VITA 42.3 spec.;

SMBUS

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

FLASH BIOS

- 2 x 128 Mb SPI-Flash;
- Modifiable within the system;

FRAM

- Capacity 32 KB;
- Implemented on SPI bus;

Integrated SSD

- Capacity 32 GB;
- SATA III 6 Gb/s interface;

Supports M.2 2280 (PCIe x4 Gen3)

SATA Interface

- 1 interface is routed to the P16 XMC connector;
- 1 interface is used for connection of integrated SSD;
- 2 x interfaces are routed to the RIO;

SPI Interface

- FRAM support;
- Frequency up to 25 MHz;

4 x LAN 10/100/1000 Mb (PCIe x4 Gen2)

- 2 x channels are routed to the RIO connector;
- 2 channels are routed to the P16 XMC connector;
- Support of the PICMG 2.16 standard;
- Intel i350 Ethernet Server Adapter is used;

2 x LAN 10/100/1000/2500 Mb (on i225)

- Supports speeds up to 2.5 Gb/sec. on Category 5e cable;

USB ports

- USB2.0 (480Mb/s), USB3.0 (5Gb/s), USB3.1 (10Gb/s);
- Connection of up to 4 devices via front panel (USB 3.0);
- 2 x USB 3.1 interfaces, routed to the P16 XMC;
- 6 x USB 2.0 interfaces, routed to the RIO;

Real Time Clock

- Power supplied from the CR2032 (3 V) lithium battery;

Audio

- HD Audio interface is routed to the P16 XMC and RIO;

Watchdog

- Internal, with program control capability;

Hardware monitor

- Implemented via PECI / SMBUS interfaces;
- Monitoring 3 supply voltages;
- CPU temperature monitoring;
- PCB temperature monitoring;

Voltage and max. current consumption

- 5 V +/- 10%; 8 A;
- 3.3 V +/- 10%; 10 A;

Resistance to external factors

- Sinusoidal vibration 2g for frequencies from 10 to 500Hz;
- Resistance to single shocks: 30 g ;
- Resistance to multiple shocks: 10g;

Operating temperature range

- From -40 to +85 ° C (industrial);
- From 0 to +70 ° C (commercial);

Software compatibility

- Linux Debian 10;
- Astra Linux Special Edition, "Smolensk" releases v1.5, v1.6;
- Microsoft Windows 10 IoT Enterprise 64bit;

MTBF

- No less than 50,000 hours;

Ordering information

CPC505 Configuration

CPC505 \Options

Configurations

CPC505-01 CPU Intel Xeon E-2276ML 2.0 GHz 6C/12T 25W; RAM 32 GB 2666 40 DDR4; from -40 to +85 ℃

CPC505-02 CPU Intel Core i3-9100HL 1.6 GHz 4C/4T 25W; RAM 32 GB 2666 DDR4; from -40 to +85 ℃

CPC505-03 CPU Intel Xeon E-2276ML 2.0 GHz 6C/12T 25W; RAM 32 GB 2666 DDR4; from 0 to +70 ℃

CPC505-04 CPU Intel Core i3-9100HL 1.6 GHz 4C/4T 25W; RAM 32 GB 2666 DDR4; from 0 to +70 ℃

Delivery checklist

CPC505 delivery checklist contains:

1. CPC505 6U CompactPCI Serial CPU Module
2. Kit for mounting the M.2 storage drive
3. Packaging.

Additional accessories (available separately)

1. RIO587 Module;
2. MIC1901 XMC Module (2 x Ethernet, Audio, CFast);
3. MIC1902 XMC Module (2xUSB3.1);
4. XMC plug with COM port.

Corporate offices