CEC5-X

Embedded Computer with Intel Atom designed for -40° up to +85°C

General Description

Goal of the design was an Embedded Computer for the Extreme, that is ultra compact, robust, and completely fanless! With the Z510PT processor and US15WPT chipset, we built a compact passive cooled system, that works smooth without derating, throttling, fan or case openings between -40°C and +85°C. Integrated are features like up to 4 Gbit Ethernet ports, 7 USB ports, and 2 serial ports. As memory, extended temperature DDR2 modules up to 2GB can be used. The unique design that gets along without any wiring allows to use the system in any application, careless how rugged the environment might be. MPL computers are available according your configuration and even with your logo.

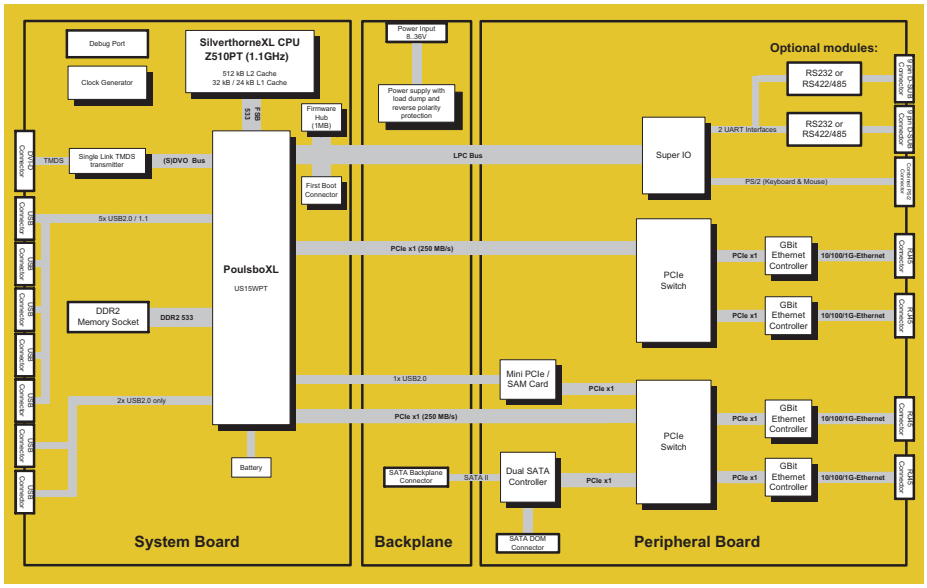
CEC5-X dimensions: 62 x 162 x 118 mm (W x H x D)
Compact rugged aluminum housing with stainless steel side plates

The CEC5-X capabilities

Next to the extreme wide operation temperature range is the compactness of the system. The CEC5-X has a complete set of standard PC features as well as industrial features like 8-36 VDC input power (including load dump and reverse polarity protection) and 2 serial ports (RS232/485). For highest usability all status LEDs and user buttons are available on the front. Versions with DIN-rail holder or flange mounting are offered for easy installation.

Key features are:

- Rugged ultra compact system without any internal wiring
- Use of Z510PT and US15WPT
- extended temperature -40°C to +85°C
- Up to 2GB DDR2 memory
- SATA IF for DOM and 2.5” disk
- Long-term availability 7+ years



These qualities make

the CEC5-X to the ideal solution for applications where a low power consumption Extrem Embedded Computer is required. Furthermore where Swiss Quality, ruggedness, long-term availability, is welcome too.

Backplane Systems Technology

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Technical Features CEC5-X

Board Key Data

Processor	Intel Atom Processor 510PT, 1.1GHz 64-Bit Data Bus, pipelined floating point unit	CPU from the embedded Intel Roadmap Intel Speed Step
Chip Set	PoulsboXL US15WPT	533MHz Frontside Bus
BIOS	1MB Flash EEPROM, easy BIOS update	MPL engineered BIOS (Phoenix), customizable
Memory	Up to 2GB via memory module	200-pin SO-DIMM socket, DDR2-533
Indicators	2 status and up to 9 activity LEDs	Power, Reset, HDD, 4x LAN

Interfaces

Graphics	INTEL GMA 500 (Integrated Graphics Device) 200MHz graphic core with 2D and 3D engine	Digital-Video on DVI-D connector Supports up to 1920x1200 (WUXGA) resolution
Up to 4 x Ethernet	10BaseT /100BaseTX / 1000BaseTX	RJ45 connector, ESD protected, auto negotiation
Up to 7 x USB 2.0	5 ports USB2.0/1.1 and 2 ports USB2.0 only	Type A connectors, ESD protected, bootable
Up to 2 x Serial Ports	Optionally to RS232 or RS422/485 via modules	9-pin DSUB, ESD protected, max. 230.4 kBaud
2 x SATA Ports	Data transfer rates up to 300Mbyte/s,	Micro SATA receptacle connectors
2 x PS/2	For Keyboard and Mouse	On one 6-pin mini DIN connector, ESD protected
Power/Reset Button	On chassis (protected) and remote button	ATX functionality, ESD protected
PCI-Express Minicard	For WLAN, GPRS, UMTS or similar expansions	With 1x PCIe lane and 1x USB 2.0

Physical / Power

Chassis	Rugged chromated Aluminum with stainless steel plates	DIN-rail or flange mounting no ventilation holes
Size & Weight	62.1 x 162.1 x 118mm	1.0 kg (without HDD)
Power	8 – 36VDC input power	Power consumption typically 12W reverse polarity and load dump protection
Temperature Range	-40°C up to +85°C	No fan, no openings, values at full CPU load
Humidity	5% - 95% non-condensing	Optional coating available

Standard Compliance

The CEC5-X is designed to meet or exceed the most common standards. Particular references are:

EMC	EN 55022, EN 55024, EN 61000, MIL-STD-461E
Shock & Vibration	EN 60068
Environmental/Safety	EN 50155, MIL-STD-810-F, EN 60601, EN 60950
Approval Lists	CE

CEC5-X versions

Product number	Function
CEC5-10X	Compact Embedded Computer with Intel Atom 510PT and PoulsboXL US15WPT chipset, Graphics, 2x Gigabit Ethernet, 3x USB2.0, 2x PS/2, 1x SERIF port (all interfaces on bottom side)
CEC5-11X	Compact Embedded Computer with Intel Atom 510PT and PoulsboXL US15WPT chipset, Graphics, 4x Gigabit Ethernet, 7x USB2.0, 2 x PS/2, 2x SERIF ports (interfaces on top and bottom side)
CEC5-Cx	Compact Embedded Computer with Intel Atom 510PT and PoulsboXL US15WPT chipset, customer specific version according your needs

Options

- DDR2 Memory Modules (ext. temperature)
- SATA-DOM (DiskOnModule)
- SATA 2.5“ Disks (SSD or HDD)
- Minicard PCI Express Modules (WLAN, GPRS, ...)
- Coated versions

Operating systems

CEC5-X systems are 100% PC/AT compatible, therefore any PC operating system (Windows, LINUX,..) can be used.

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MPL AG is an ISO9001 certified company