Wir leben Elektronik!
We live electronics!

Sontheim

Industrial PCs

Overview of our IPCs

Sontheim Overview

We are your close partner with our innovative portfolio of standardized and customer-specific products and comprehensive support capabilities.

Make your decision a one-stop issue. Every part of our systems is developed, engineered and manufactured in our in-house production and development facilities.

We are working closely together with universities and educational institutions of the region and realise important R&D projects.

We are reinvesting into new technologies, doing pioneers' work in the hardware and software development.

Our driven team of motivated and qualified specialists creates specifically tailored solutions for you.

We are happy to support you in every step of your project – especially our project teams and product manager.


CERTIFICATE

sontheim Industrie Elektronik GmbH

ISO 9001:2008

DEKRA Certification GmbH hereby certifies that the company

Sontheim Industrie Elektronik GmbH

Scope of certification:
Development, manufacturing and distribution of industrial electronics

Certified location:
D-87437 Kempten / Allgäu, Georg-Krug-Straße 2

has established and maintains a quality management system according to the above mentioned standard. The conformity was adduced with audit report no. A15011231.

This certificate is valid from 2015-03-30 to 2018-02-26

Certificate registration no. 51100793/5

DEKRA Certification GmbH
Stuttgart, 2015-03-30

DEKRA

We are certified according to international standards like ISO 9001:2008. In addition to that we are an active member in different industry-related organisations. Our products comply to various standards - you will benefit from normised high quality standards.

Overview of Services

Engineering

We support you from the development phase to integration and support. From the idea, through documentation and production and up to test setups, training courses and seminars you get everything from one source.

Fieldbus

We can use our extensive fieldbus expertise in various branches of the automation and automotive industry. Our focus is particularly on CAN, EtherCAT, Profibus and the protocols used in the automotive sector.

Automotive

With our tools and systems in the automotive sector we offer tstandard-based solutions in the field of diagnostics, measurement and testing. Our modular systems are future-proof and highly performant.

Automation

Whether you need IO modules, Industrial PCs, PLCs, interfaces or the matching software, with Sontheim you get standardized and customized products in highest quality based on current fieldbus technologies.

Hardware-Development

With us you get everything from one source. We develop modular hardware systems - standard or customized - its your choice.

Software-Development

Our software development provides beside diagnostic and analysis tools, protocol stacks, programming interfaces and software for control, operation and configuration of machines.

Diagnostics

MDT - the innovative and comfortable diagnostic tool chain based on ODX for the flexible creation of individual and complex diagnostic and service applications leaves no wish unfulfilled.

Product Development

As an expert in different fieldbus applications, we can provide you with custom-tailored solutions. We are passionate about all aspects of electronics including hardware, software, firmware and the design of complete systems that meet your specific needs. You benefit from our comprehensive know-how as a system provider and the perfect combination of functional hardware, suitable firmware and modular software.

Electronics Manufacturing Services (EMS)

On our two modern production lines, we manufacture electronic components and systems according to your needs and to the highest standards in quality while maintaining your schedule and optimizing for costs. We stand out for our flexibility; we are capable of producing batches from prototype to series and up to nearly 240,000 units per year.

Industrial PCs

Overview of our industrial PCs for both automation and automotive applications

Did you know ...

Our PCs are industrial-suited multi-talents: Use them as PC-substitutes in rough environments, PLCs for simple to complex controlling tasks and your specific fieldbus applications. They contain numerous interfaces and can be adapted to your requirements.

Ask us for our extension cards. Starting at batch size 1, you can get your individual PC with interfaces for CAN, digital and analogue inputs and outputs, RS232/422/485, Profibus, FireWire and many more.

ePC

Key Features

- Atom-CPU with passive cooling
- Link2Go: Extension modules can be linked to the ePC with the basis module being untouched, like a fieldbus coupling device
- Various interface like CAN, Ethernet, I/Os, CFast, DVI and USB
- IP20 full metal housing for optimal EMV protection
- Software-Tools for all CAN-bus tasks

Possible use-cases

- Embedded PC as a master for CAN control
- Compact PLC with integrated I/Os
- Bus-monitoring with remote capabilities
- Master or slave bus-coupling unit

EPC is a modular embedded platform for being used in all areas of the automation sector. The design principle of bus-coupling devices allows extensions while the basic system remains untouched.

Main technical advantages

There are several different processor types of the ATOM family available. The chipset is known for a high energy efficiency and little heat waste. It has 512 MB to 2 GB RAM onboard for small to complex operations. Instead of a usual HDD the ePC uses CFast which is the faster successor of Compact Flash – the system can also be booted over this interface. The advantage is a data transfer speed of up to 3 GBit/sec. Of course, all CFast cards can be purchased via Sontheim. A full metal housing together with the specific memory and CPU provides optimal EMV-capabilities and passive cooling event at high temperatures.

Link2Go – Expand your PC!

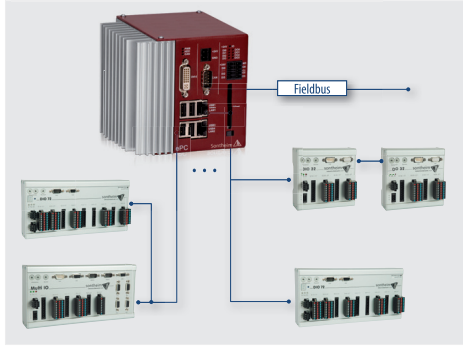
Modern automation applications require efficiency and the flexibility to adapt to changing environments in an individually matching way. Link2Go is a concept of adding extension modules quickly and conveniently to the ePC. However, the basic unit remains as it is and the user can change the modules later on if necessary. The range of the planned extensions varies from touch displays and bus couplers to hard disk drives and serial interfaces. There could even customer-specific modules be created. Link2Go – your personal embedded solution for the price of standard components.

Interfaces

The ePC incorporates many interfaces for a maximum of flexibility already in its basic version without extensions (Link2Go). There are CAN, Ethernet (EtherCAT-capable), digital inputs and outputs, DVI and USB available, allowing tasks such as PLC, CAN-Bus master or slave, signal processing and many more applications. An integrated CFast interface like an USB stick thought for data logging and even booting the system.

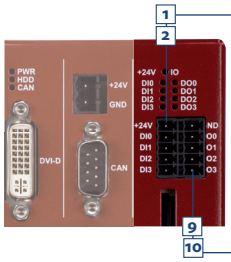
Usecase automation

The ePC is a master unit in the automation system and handles the control as well as the sensors and actors in a fieldbus network with an additional PLC functionality.



ePC	Technical Data
Chipset	Different ATOM chipsets like 1.3 GHz / 1 GB RAM CPU-boards can be changed, system can be upgraded
Dimensions (L,W,H)	120 x 115 x 111 mm
Temperature range	0 to 60°C, extended temperature range with -40 to +85°C upon inquiry
Housing	Extruded aluminum sheath and metal plate components for withstanding EMV and quickly discharging heat TS35 din rail mounting
IP-class	IP20
Humidity	5% - 95%, non-condensing
Power supply	24 VDC ± 20%
Power consumption	Max. 1,2 A
RAM	512 MB to 2 GB
HDD	Slot for CFast-card or Link2Go-module, bootable
Interfaces	2x Gigabit LAN (EtherCAT-capable) 1x CAN according to DIN ISO 11898, galvanically isolated 4x digital inputs according to IEC 61131-2, separate supply 4x digital outputs according to IEC 61131-2, separate supply 1x DVI 4x USB 2.0
Connecting external periphery components	Mouse, keyboard and other components via USB 2.0 Visualization via DVI or Link2Go module
Graphics	Integrated Intel® Graphics Intel® GMA 500, resolution up to 1.366 x 768
LEDs	Power, HDD and CAN
Optional components	W-LAN Separate process data memory (retain-memory) Extended temperature range, -40 to +85°C
Planned Link2Go extensions	RS232 /RS485 HDD- extension Uninterruptible power supply (UPS) Touch-display Bus coupler IO-extension

Digital IOs

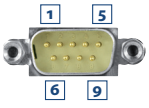


Pin	Pin assignment
1	24V power supply
2	Digital input 0
3	Digital input 1
4	Digital input 2
5	Digital input 3
6	GND
7	Digital output 0
8	Digital output 1
9	Digital output 2
10	Digital output 3

DVI

Pin	Pin assignment
01	TDMS-data 2 –
02	TDMS-data 2+
03	Shield TDMS-data 2,4
04	TDMS-data 4 –
05	TDMS-data 4+
06	DDC frequency
07	DDC frequency
08	Analogue: V-Sync
09	TDMS-data 1 –
17	TDMS-data 0 –
18	TDMS-data 0+
19	Shield TDMS-data 0,5
20	TDMS-data 5 –
21	TDMS-data 5+
22	Shield TDMS-frequency
23	TDMS-data +
24	TDMS-data –
C1	Analogue: red
C2	Analogue: green
C3	Analogue: blue
C4	Analogue: H-Sync
C5	Analogue: Earth

CAN-Interface



Pin	Pin assignment
2	CAN low
3	CAN GND
7	CAN high

RJ45

Pin	Pin assignment
1	Tx+
2	Tx-
3	Rx+
4	NC
5	NC
6	Rx-
7	NC
8	NC

USB-Interface

Pin assignment	
1	VCC (VBUS)
2	– Data
3	+ Data
4	GND (Ground)

Ordering information

Art.-No.	Description
V971010000	ePC

IPC-4

Key Features

- High performance
- Scaleable computing power
- Additional interfaces can easily be added
- Suited for rough environments
- Industrial-suited due to integrated power adaptor and cooling system
- All interfaces at the front cover

In its latest generation the IPC-4 combines the Sontheim knowhow in modern technology and integrated solutions. It is perfectly suited for all tasks around automation and automotive applications. Due to its scalable CPU, RAM, HDD and interfaces, you will have a PC that fits your application in every aspect. Both computing performance and number / type of interfaces offer various different versions for a maximum of flexibility. Of course, the housing is designed for a control cabinet and top hat rail and all interfaces are located at the front cover, enabling comfortable handling and well-arranged cabling.

Scalable performance

We will offer you advice concerning the clock rates that vary between 600 MHz with an Intel Celeron M and 2×2,16 GHz with an Intel Core 2 Duo. There is also energy-efficient ATOM technology available. You can have up to 4 GByte DDR RAM built in for complex and resource-consuming tasks.

Rough environments …

The IPC-4 uses SATA HDDs that are cleared for 24/7 operations. We are happy to switch to industrial temperature ranges for you. It is also possible to have devices with not rotating parts like Solid State Disks (SSD) which will guarantee you highest process reliability even in very rough environments.

Many interfaces in a compact design

The IPC-4 offers 6×USB 2.0, 2×Gigabit Ethernet (10 / 100 / 1000 BaseT), 2 serial interfaces, a DVI and a VGA slot. Additionally, there is a CF slot implemented. You will note that the device facilitates a clear arrangement of cabling with all interfaces being allocated at the front cover. The side parts are reserved for cooling fans and heat exhaust. Little cooling fins add up to controlling any heat.

Left side = standard, right side = flexible

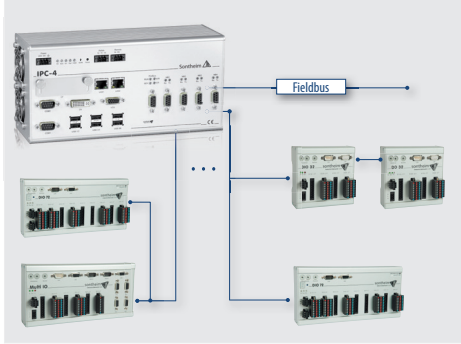
Probably the most important advantage of the IPC-4 is its modular design that is suited for customer-specific extensions. PCI104 and pC104+ cards are up to most individual requirements like CAN, FireWire, digital and analogue inputs and outputs, Frame grabber and many more functions.

32 KB battery-buffered ZERO-RAM

The IPC will save runtime variables in this RAM memory for you in order to keep them in a case of a loss of power.

Usecase automation

IPC-4 is a master unit in the automation system and handles the control as well as the sensors and actors in a fieldbus network.



IPC-4 Technical data

Housing	Compact aluminum case with integrated top hat rail (TS35)
Dimensions (L,W,H)	244 mm (+ 10 mm minimum space to the left and right) × 121 mm × 95 mm (without connectors)
Weight	1,5 kg
Temperature range * active cooling	Operating: 0°C – 45°C, optional with automotive HDD or Industrial CF-card (-20°C – 65°C);* Storage: -20°C – 65°C
Humidity	5% - 95%, non-condensing
Power supply	24 VDC ± 20% (for standard versions) 24 VDC -25%/+30% (for GL-versions, German Lloyd) Power supply for automotive area available on enquiry
Power adaptor (integrated)	ATX – compatible, Wake-Up via LAN supported
Status LEDs * please see the manual for further information	5V - LED inlluminated wenn connected to power supply Device ready for start / started* Run - shows operating status of the IPC-4* Err – Errors cause the error LED to blink* Rel - LED is ilumintaed when relay adduct, turns off at dropout (Pin 12, 11 & 14) * HDD - shows the status of the internal HDD and the CF-card*
Buttons	SHDN – Start resp. automatic shutdown and power off, as long as ACPI is activated. Reset - Causes a warm boot
HDD	2.5" HDD (SATA or IDE up to 9,5mm hight)
Power consumption at 24V DC ** without external periphery	Max. power consumption 1,0 to 2,0A Start-up current 2,5 to 4,5A
Support of periphery components via USB	CD-/DVD-ROM; CD-/DVD-RW; HDDs, USB-sticks, mouse and keyboard, other peripheral components
Certificats	EMV acc. to CE with EN 61000-6-4:2007, EN 55022:2006, EN 61000-6-2:2005, EN 61000-4-2:1995 + A1:1998 + A2:2001, EN 61000-4-3:2006, EN 61000-4-4:2004, EN 61000-4-5:2006, EN 61000-4-6:1996 + A1:2001 GL (on inquiry)

Interfaces

Power / Watchdog	1 × power supply, 1 × relay, 1 × remote
VGA	Depending on COM Express module (see CPU types)
DVI	1 × DVI (resolution 640 × 480 to 1600 × 1200, depending on display)
CF	CF-card acc. to specification 4.1 (CF UDMA Mode 0-4, PIO Mode 0-6)
USB flash memory	Internal slot for Diskon Module flash memory via USB 2.0
Ethernet	LAN1 Gigabit ethernet, Realtek RTL8111 10 / 100 / 1000 BaseT LAN2 Intel 82573L 10 / 100 / 1000 BaseT interface via PCIexpress lane
USB	6 × USB 1.1 / 2.0 up to 480 MBit power output 500 mA each
Serial interfaces	2 × standard RS232 (with all handshake-signals), galvanic isolation optional (up to 2 kV)
PCI104 or PC104+	2x PCI104 or PC104+ slots for customer-specific interfaces
Optional PC104+ cards	- CAN-Bus - FireWire - Serial interfaces (RS232 / RS485 / RS422) - Profibus - Framegrabber - Digital / analogue inputs and outputs - Customer-specific functions

CPU-types

600 MHz	CPU	Intel Celeron M 600 MHz, ULV, 512 KByte Cache, FSB 400 MHz
	RAM	SO-DIMM DDR2 DDR533/ PC4200 up to 2 GByte
	Chipset	Graphics & memory controller hub: Intel 915GME IO-controller hub: Intel 82801FBM (ICH6-M
	VGA resolution	Up to 2048 × 1536 (75 Hz)
1,5 GHz	CPU	Intel Celeron M 370 1.5 GHz, 1 MByte Cache, FSB 400 MHz
	RAM	SO-DIMM DDR2 DDR533/ PC4200 up to 2 GByte
	Chipset	Graphics & memory controller hub: Intel 915GME IO-controller hub: Intel 82801FBM (ICH6-M
	VGA resolution	Up to 2048 × 1536 (75 Hz)
2 × 2,16 GHz	CPU	Intel Core 2 Duo T7400, 2.16 GHz, (4M Cache, 667 MHz FSB, 65nm), socket mPGA479M
	RAM	2 sockets, SO-DIMM DDR2 667/PC5300 up to 4 GByte, 3 GByte usable
	Chipset	Graphics & memory controller hub: Intel 945GME IO-controller hub: Intel 82801GHM (ICH7M-DH)
	VGA resolution	Up to 2048 × 1536 (75 Hz)

Extensions

- PC104-HiLo-CAN for up to 2 additional CAN-channels
- Multi-IO-PC104+ for up to 8 digital IOs each and as an option 4 analogue IOs each
- RS-combicard-PC104+ 4 RS232/RS485 interfaces
- LEDcc-PC104 for controlling LED units
- PB-ZR-PC104+ for Profibus control
- FireWire-PC104+ for up to 3 FireWire-channels

Ordering information

Art.-No.	Description
V969000600	IPC-4; 600 MHz Intel Celeron M
V969001500	IPC-4; 1,5 GHz Intel Celeron M 370
V969002100	IPC-4; 2 × 2,16 GHz Intel Core2Duo T7400

Equipment/ Adaptation

Art.-No.	Description
V990230000	IPC-4 Customizing

Legal information

Contact:

DE

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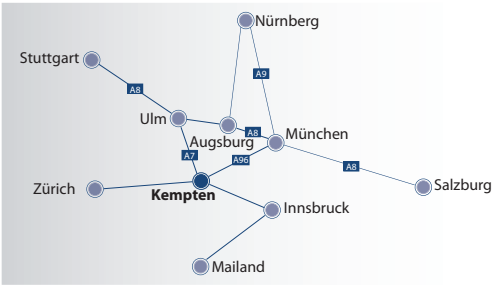

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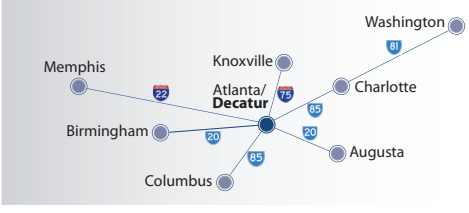

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XING

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Sontheim Overview and Portfolio:

We are looking forward to your enquiry. For a personal advice and detailled information please refer to our specialists:

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