Sontheim

# IPC-4

## The compact industrial PC


We live electronics!


# IPC-4

**The IPC clearly sets itself apart from the competition with its scalable scope of performance. Both computing power and the type and number of interfaces offer many possibilities for individual adaptation.**

## Key Features

- **Significantly increased performance**
- **Scalable power**
- **Additional interfaces easily integrated**
- **All interfaces accessible from the front**
- **Very good performance even in harsh environments**
- **Suitable for industrial use due to integrated power supply and fan**

**In its latest generation the IPC-4 combines the Sontheim know-how in state-of-the-art technology and integrated solutions. It is perfectly suited to all tasks in the automation and automotive industry. Due to its scaleable 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. This creates a maximum of mudalirty and scalability. Of course, the housing is suitable for top hat rail mounting and allows access to all interfaces at the front cover, enabling comfortable handling and well-arranged cabling.**

## Scalable performance

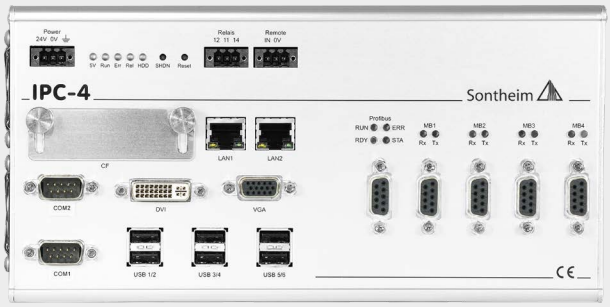
The clock frequencies currently range from 600 MHz with an Intel Celeron M to 2× 2.16 GHz with an Intel Core 2 Duo. Depending on the board type, up to 4 GB DDR RAM is used; thus, even computationally intensive tasks are possible without difficulty. An Intel Atom processor can be used as a power-saving variant.

## Made for rough environments

The SATA HDDs used are approved for 24/7 operations. We are happy to switch to industrial temperature ranges for you. It is also possible to have devices with no 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 has six USB 2.0 ports, two Gigabit Ethernet (10/100/1000 BaseT), two serial interfaces as well as a DVI and a VGA connector. 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 analog inputs and outputs, Framegrabber 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.

# Technical Data

| CPU Versions | 600 MHz | 1.5 GHz | 2× 2.16 GHz |
|---|---|---|---|
| CPU | Intel Celeron M 600 MHz, ULV, 512 KB Cache, FSB 400 MHz | Intel Celeron M 370 1.5 GHz, 1 MB Cache, FSB 400 MHz | Intel Core 2 Duo T7400, 2.6 GHz, (4M Cache, 667 MHz FSB, 65 nm), socket mPGA479M |
| RAM | SO-DIMM DDR2 DDR533/ PC4200 up to 2 GB | | 2 socket, SO-DIMM DDR2 667/PC5300 up to 4 GB, 3 GB usable |
| Chipset | Graphics & memory controller hub: Intel 915GME<br>IO controller hub: Intel 82801FBM (ICH6-M) | | Graphics & memory controller hub: Intel 945GME<br>IO controller hub: Intel 82801GHM (ICH7M-DH) |
| VGA resolution | Up to 2048×1536 (75 Hz) | | |

| 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 up 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 Disk-on-Module flash memory via USB 2.0 |
| Ethernet | LAN1 Gigabit Ethernet, Realtek RTL8111 10/100/1000 BaseT;<br>LAN2 Intel 82573L 10/100/1000 BaseT interface, via PCIexpress lane |
| USB | 6× USB 1.1/2.0 up to 480 Mbit/s, power output 500 mA each |
| Serial interfaces | 2× standard RS232 (with all handshake-signals), galvanic isolation optional (up to 2 kV) |
| PCI104 or PC104+ | 2× PCI104 or PC104+ slots for customer-specific interfaces |
| Optional PC104+ cards | CAN Bus<br>FireWire<br>Serial interfaces (RS232/RS485/RS422)<br>PROFIBUS<br>Framegrabber<br>Digital/analog inputs and outputs<br>Customer-specific functions |

| Hardware | |
|---|---|
| Status LEDs<br>* please see the manual for further information | 5 V – LED illuminated when connected to power supply<br>Device ready for start/started*<br>Run – shows operating status of the IPC-4*<br>Err – Errors cause the error LED to blink*<br>Rel – LED is illumintaed when relay adduct, turns off at dropout (Pin 12, 11 and 14) *<br>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.<br>Reset – Causes a warm boot |
| HDD | 2.5" HDD (SATA or IDE up to 9.5 mm hight) |
| Support of periphery components via USB | CD-/DVD-ROM; CD-/DVD-RW; HDDs, USB-sticks, mouse and keyboard, other peripheral components |
| Certificates | EMC 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) |
| Dimensions (l×w×h) | 244 mm (+10 mm minimum space to the left and right) × 121 mm × 95 mm (without connectors) |
| Housing | Compact aluminium case with integrated top hat rail (TS35) |
| Storage temperature | –20 °C up to +65 °C |
| Operating temperature | 0 °C up to +45 °C, optional –20 °C to +65 °C (with automotive HDD or Industrial CF-card and active cooling) |
| Humidity | 5 % – 95 % non-condensing |
| Power supply | 24 V DC ± 20% (for standard versions)<br>24 V DC –25 % / +30 % (for GL-versions, German Lloyd)<br>Power supply for automotive area available on enquiry |
| Power consumption at 24 V DC (without external periphery) | Max. power consumption 1.0 to 2.0<br>Start-up current 2.5 to 4.5 A |
| ower adaptor (integrated) | ATX – compatible, Wake-up via LAN supported |

# Pin assignment

### RJ 45

| | |
|---|---|
| 1 | TXD+ |
| 2 | TXD– |
| 3 | RXD+ |
| 4 | BIAS1 |
| 5 | BIAS1 |
| 6 | RXD– |
| 7 | BIAS2 |
| 8 | BIAS2 |


### VGA

| | |
|---|---|
| 1 | Red |
| 2 | Green |
| 3 | Blue |
| 13 | HSync |
| 14 | VSync |
| 12 | DDC-Data |
| 15 | DDC-clock |
| 9 | 5V |
| 5–8, 10 | GND |
| 4,11 | NC |


### COM1

| | |
|---|---|
| 1 | DCD |
| 2 | RXD |
| 3 | TXD |
| 4 | DTR |
| 5 | GND |
| 6 | DSR |
| 7 | RTS |
| 8 | CTS |
| 9 | RI |

### USB

| | |
|---|---|
| 1 | VCC (VBUS) |
| 2 | – Data |
| 3 | + Data |
| 4 | GND (Ground) |

### DVI

| | |
|---|---|
| 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 | Analog: 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 | Analog: red |
| C2 | Analog: green |
| C3 | Analog: blue |
| C4 | Analog: H-Sync |
| C5 | Analog: Mass |

# Order information

| | |
|---|---|
| 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 |
| V990230000 | IPC-4 Customizing |


**Mobile Automation**

**Industrial Automation**

**Diagnostics**

**Connectivity**

## We are looking forward to your enquiry!

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