## General information

**Product type designation**
- IPC647D

## Installation type/mounting

**Mounting**
- For horizontal installation; prepared for telescopic rails; 19” mounting bracket can be removed externally

**Design**
- Rack PC, 19”, 2U

## Supply voltage

**Type of supply voltage**
- 100/240 V AC (autorange) 50 / 60 Hz; optional redundant 100 - 240 V AC

**Line frequency**
- Rated value 50 Hz: Yes
- Rated value 60 Hz: Yes

**Mains buffering**
- Mains/voltage failure stored energy time: 20 ms

## Processor

**Processor type**
- Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz, 8 MB cache); Core i5-4570TE (2C/4T, 2.7 (3.3) GHz, 4 MB cache); Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB cache)

**Chipset**
- Intel DH82C226 PCH

## Graphic

**Graphics controller**
- Onboard graphics controller Intel HD 4600 Graphics integrated into the processor / PCI-Express graphics card (Dual Head: 2x VGA or 2x DVI-D) in the PCIe (x16) slot (optional)

## Drives

**Optical drives**
- DVD±R/RW (SlimLine)

**Hard disk**
- 500 GB HDD, 1 TB HDD, 2x 1 TB HDD, RAID1 (2x 1 TB HDD, mirror disks); RAID1 (2x 1 TB HDD SAS, mirror disks) with PCIe (x8) RAID controller incl. ZMCP module

**SSD**
- Yes; 240 GB SSD; RAID1 (2x 240 GB SSD, mirror disks)

**Slot for drives**
- Mounted internally on the fixed hard disk support, or mounted internally in vibration/shock-absorbing hard disk support, or mounted at the front in the low-profile removable drive bay (hot-swap in RAID configurations)

## Memory

- Data sheet 6AG4112-2KP70-0XX6

SIMATIC IPC647D (Rack PC, 19”, 2 HU); 2x Gbit Ethernet (IE/PN), RJ45; 1x DVI-I; 2x display ports; 1x COM 1; 2x PS/2; audio; 4x USB 3.0, incl. 1x internal; 3x USB 2.0; Temp. and fan monitoring; Watchdog, Card retainer

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<table>
<thead>
<tr>
<th>Main memory</th>
<th>2 GB to 32 GB DDR3 1600 DIMM, ECC optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity of main memory, max.</td>
<td>32 Gbyte</td>
</tr>
</tbody>
</table>

### Hardware configuration

#### Slots
- **free slots**
  - 2x PCIe mech. (x16) (4 lanes) or 4x PCIe mech. (x16) (4 lanes / 8 lanes depending on slot) or 2x PCI, 2x PCIe mech. (x16) (8 lanes); all modules to a length of 312 mm can be used

#### Interfaces

<table>
<thead>
<tr>
<th>Interfaces/bus type</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1x COM1, 1x COM2 (optional), 1x LPT (optional), 2x DisplayPort, 1x DVI-I, 2x PS/2, audio (Microphone In, Line Out), 7x USB, 2x Gigabit Ethernet, PROFIBUS or PROFINET optional</td>
<td></td>
</tr>
<tr>
<td>Optionally onboard, isolated, max. 12 Mbit/s, no plug-in card necessary, CP 5622-compatible</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interface</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB port</td>
<td>2x USB 3.0, 2x USB 2.0 rear, 1x USB 3.0, 1x USB 2.0 front, 1x USB 3.0 internal</td>
</tr>
<tr>
<td>Connection for keyboard/mouse</td>
<td>2x PS/2</td>
</tr>
<tr>
<td>serial interface</td>
<td>COM1: 1x RS 232, COM2 (optional): 1x RS 232</td>
</tr>
<tr>
<td>parallel interface</td>
<td>optional LPT1</td>
</tr>
</tbody>
</table>

#### Multimedia

- **Audio In/Out**: Yes
- **Microphone In**: Yes

#### Video interfaces

- **Graphics interface**: 2x DisplayPort and 1x DVI-I onboard; 1x VGA via DVI-VGA adapter cable (optional); graphics card PCIe (x16), Dual Head (2x VGA or 2x DVI-D), 1 GB graphics memory (optional)

#### Industrial Ethernet

- **Industrial Ethernet interface**: 2x Ethernet (RJ45) - 100 Mbps: Yes, - 1000 Mbps: Yes

#### Integrated Functions

##### Monitoring functions

- **Temperature monitoring**: Yes
- **Watchdog**: Yes
- **Status LEDs**: POWER, HDD, ETHERNET 1, ETHERNET 2, PROFIBUS / MPI, SF PROFINET, WATCHDOG, TEMP, FAN, HDD0 ALARM, HDD1 ALARM
- **Fan**: Yes
- **Monitoring function via network**: Optional

#### EMC

- **Interference immunity against discharge of static electricity**: ±6 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2
- **Interference immunity against high-frequency electromagnetic fields**: ±6 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2
### Interference immunity against high frequency radiation
- 10 V/m for 80 - 1000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 10 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6

### Interference immunity to cable-borne interference
- **Interference immunity on supply cables**
  - ±2 kV acc. to IEC 61000-4-4, burst; ±1 kV acc. to IEC 61000-4-5, surge symmetric; ±2 kV acc. to IEC 61000-4-5, surge asymmetric
- **Interference immunity on signal cables >30m**
  - ±2 kV acc. to IEC 61000-4-4, burst; ±2 kV acc. to IEC 61000-4-5, surge
- **Interference immunity on signal cables < 30m**
  - ±1 kV acc. to IEC 61000-4-4, Burst

### Interference immunity against voltage surge
- **asymmetric interference**
  - ±2 kV acc. to IEC 61000-4-5, surge asymmetric
- **symmetric interference**
  - ±1 kV acc. to IEC 61000-4-5, surge symmetric

### Interference immunity to magnetic fields
- **Interference immunity to magnetic fields at 50 Hz**
  - 100 A/m; to IEC 61000-4-8

### Emission of conducted and non-conducted interference
- **Interference emission via line/AC current cables**
  - EN 61000-6-3, FCC Class A, EN 61000-6-4, CISPR 22, EN 55022 Class B, EN 61000-3-2 Class D, EN 61000-3-3

### Degree and class of protection
- **IP (at the front)**
  - IP41
- **IP (rear)**
  - IP20

### Standards, approvals, certificates
- **Approval**
  - CE, cULus 60950, KCC
- **CE mark**
- **CSA approval**
  - Yes; Included in cULus
- **UL approval**
  - Yes
- **cULus**
  - Yes; UL 60950-1, file number E115352
- **RCM (formerly C-TICK)**
  - Yes
- **KC approval**
  - Yes
- **EAC (formerly Gost-R)**
  - Yes
- **EMC**
- **Dust protection**
  - With front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered

### Marine approval
- **Germanischer Lloyd (GL)**
  - Yes; Only with SSD
- **American Bureau of Shipping (ABS)**
  - Yes; Only with SSD
- **Bureau Veritas (BV)**
  - Yes; Only with SSD
- **Det Norske Veritas (DNV)**
  - Yes; Only with SSD
- **Lloyds Register of Shipping (LRS)**
  - Yes; Only with SSD

### Ambient conditions
- **Ambient temperature during operation**

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### Ambient temperature during operation
- 0 ... 50 °C: no ODD operation, no HDD operation in swap frame, no hardware RAID controller.
- 0 ... 45 °C: no ODD operation, no hardware RAID controller, power loss of expansion cards in total < 55 W.
- 0 ... 40 °C: no hardware RAID controller, power loss of the expansion cards in total < 55 W.
- 0 ... 35 °C: no restrictions.

### Ambient temperature during storage/transportation
- min.: -20 °C
- max.: 60 °C

### Relative humidity
- Tested to IEC 60068-78, DIN IEC 68-2-30: 5% to 80% at 25 °C (no condensation)

### Vibrations
- Tested according to IEC 60068-2-6: 10 cycles, 10 Hz to 58 Hz: 0.0375 mm, 58 Hz to 500 Hz: 4.9 m/s² (0.5 g)

### Shock testing
- Tested according to IEC 60068-2-27, IEC 60068-2-29: half-sine: 50 m/s² (5 g), 30 ms, 100 shocks per axis

### Operating systems
- **Operating system**: Windows 7 Ultimate, multi-language (32-bit/64-bit), Windows 10 Enterprise 2015 LTSB, multi-language (64-bit), Windows 10 Enterprise 2016 LTSB, multi-language (64-bit), Windows Server 2008 R2 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2012 R2 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit)
- **Pre-installed operating system**: Yes
- **Additional info on operating system**: Multi-Language User Interface (MUI): 5 languages (English, German, French, Spanish, Italian)
- **Without operating system**: Yes

### Software
- **SiMATIC Software**: Optionally in package with SiMATIC WinCC or WinCC flexible

### Dimensions
- **Width**: 430 mm
- **Height**: 88 mm; 2U
- **Depth**: 444 mm

*last modified: 10/03/2018*