Industrial PCs for the Digital Factory

Higher performance, quality, and sustainability with SIMATIC IPC
Ready for the Digital Factory
SIMATIC IPC: the platform for production digitization

In manufacturing and production, linking information across all corporate levels increases the demands placed on the computing power, functioning, and availability of industrial PCs. This is a trend that will only intensify with the growth of digitization. According to experts, the volume of digital information will increase tenfold in the next five years, particularly in the area of industrial processes. SIMATIC industrial PCs offer an innovative platform with long-term availability to prepare your machines and plants for the challenges of the Digital Factory.

Do you need to process and edit a large volume of production-related information? Then take advantage of our wide range of products for tasks such as:

• Control and monitoring of control-room processes using Rack PCs and a multimonitor configuration
• Fast and reliable data transfer using a maintenance-free Box PC as a compact gateway to the enterprise cloud
• Powerful data acquisition and machine automation using rugged Box PCs
• Combined monitoring, operation, and PC-based control using Panel PCs
• Mobile data monitoring and acquisition using industrial Tablet PCs
The Perfect Industrial PC for Every Task
The SIMATIC IPC family at a glance

Embedded IPCs

High-end IPCs

Advanced IPCs

Basic IPCs

Operator panels

Device versions

- Customized solution
  Always the right configuration for your requirements
- Efficient from the very start
  Integrated engineering with Totally Integrated Automation
- Quality guarantees your success
  Developed and built for industry
- For Today and Tomorrow
  SIMATIC IPCs combine innovation and continuity
- Fanless and maintenance-free
  SIMATIC Embedded IPCs
- Power for industry
  SIMATIC High-end IPCs
- Latest PC technology for production
  SIMATIC Advanced IPCs
- Attractive price-performance ratio for flexible use
  SIMATIC Basic IPCs
- On-site with everything in view
  Industrial Flat Panels, Thin Clients, and Tablet PCs
- Ergonomic operation
  Fast, intuitive operator panels with glass fronts
- Tailored to your application
  Device versions for special requirements
- A home-field advantage in the digital factory
  Varied application options for SIMATIC IPCs
- Successful applications
  SIMATIC IPC: examples of concrete applications
- Always by your side
  Service and support for SIMATIC IPCs
SIMATIC IPCs excel due to the wide range of matched product series that enable you to find the right industrial PC. Select exactly the right configuration. You’ll benefit from an optimal price-performance ratio and high investment protection for your application.

You can order over 90 million different configurations in quantities of one or more directly from a catalog. Can’t find your IPC? Want to adapt your IPC to your corporate solution visually and/or technically? It’s easy with our Express-Design. We’re also happy to support you in customizing products and systems based on the SIMATIC standard – precisely tailored to your specific requirements.

The quick and easy way to a suitable system: TIA Selection Tool

Use the TIA Selection Tool to custom configure your industrial PC. An intelligent wizard helps you select components such as processors, memory, drives, cards, and operating systems. If desired, it will forward you directly to our ordering system – easily, securely, and conveniently.

Customized Solution

Always the right configuration for your requirements

- **SIMATIC IPC** | Customized Solution

<table>
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<tr>
<th>Embedded industrial PCs Fanless</th>
<th>IPC2x7 Compact</th>
<th>IPC4x7 Powerful</th>
<th>IPC6x7 High performance</th>
<th>IPC8x7 Maximum expandability</th>
<th>IPC5x7 Maximum performance</th>
<th>IPC3x7 Available ex stock</th>
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<tr>
<td><strong>Rack PC</strong></td>
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<td>IPC227E</td>
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<tr>
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<tr>
<td><strong>Panel PC</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>IPC277E</td>
<td>IPC477D/E</td>
</tr>
</tbody>
</table>
The engineering of your automation solution forms the basis for the productivity and efficiency of your processes. It is a central lever for competently mastering the constantly increasing complexity of machines and plants. Make your production faster, more flexible, and more intelligent right from the start with Totally Integrated Automation.

Totally Integrated Automation is our solution that ensures all automation components work perfectly together. The open system architecture covers the entire production process and is completely based on:

- Consistent data management
- International standards
- Uniform hardware and software interfaces

Our SIMATIC IPCs are an integral part of Totally Integrated Automation. They can be configured easily and efficiently using the integrated TIA Portal engineering framework and integrated directly into the automation network. In this way, we minimize engineering effort while you enjoy reduced costs, a shorter time to market, more flexibility, and greater data transparency.

**Take advantage of:**

- System-tested automation software
- Efficient engineering
- Simple network integration
- Varied networking options

**System diagnostics for higher availability**

The comprehensive, integrated system diagnostics of SIMATIC IPC DiagMonitor provide detailed information on the system status of our IPCs. They enable you to perform preventive maintenance on your industrial PCs, thus reducing downtimes, improving availability, and as a result, increasing the productivity of your machines and plants.
Quality Guarantees Your Success
Developed and built for industry

With our SIMATIC IPCs, you can count on the highest quality. We designed these devices for reliable continuous operation in an industrial environment. To meet our quality standards from the development process to the product itself, we manufacture the mainboards for increased industrial requirements in state-of-the-art plants in Germany.

When it comes to quality, we leave nothing to chance: starting in the development phase, we focus on the quality design of parts to the selection of components. Production in climate-controlled halls with constant temperature and air humidity, special test procedures, and series-accompanying type tests and trials ensure 100% correct functioning and compliance with all technical specifications. The quality of product packaging is especially high and in compliance with strict shipping guidelines to ensure that the product arrives in perfect condition. We not only comply with the requirements of CE and UL approvals but far exceed them. This is demonstrated by regular inspections of field quality.

In this way, we protect your investments. Because the products also conform to our own Siemens standard SN 36350-1 for environmentally sound product design, we also reduce the environmental impact from production to disposal.

的质量保障确保您的成功

- 高抗振和抗冲击
- 适用于环境温度高达60°C
- 坚固的外壳
- 系统和数据冗余性提高
- 用于自动化解决方案的电源故障保护

Developed and built for industry

- ABS
- BV
- DNV
- GL
- LRS
- NK

<table>
<thead>
<tr>
<th>SIMATIC IPC</th>
<th>Marine certifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Box PC (IPC227, IPC427, IPC627, IPC827)</td>
<td>✔️ ✔️ ✔️ ✔️ ✔️ ✔️</td>
</tr>
<tr>
<td>Panel PC (IPC277, IPC477, panel PC EX)</td>
<td>✔️ ✔️ ✔️ ✔️ ✔️ ✔️</td>
</tr>
<tr>
<td>Pack PC (IPC647)</td>
<td>✔️ ✔️ ✔️ ✔️ ✔️ ✔️</td>
</tr>
<tr>
<td>Monitors &amp; thin clients (IFP &amp; ITC(EX))</td>
<td>✔️ ✔️ ✔️ ✔️ ✔️ ✔️</td>
</tr>
</tbody>
</table>

Quality for your industry based on an example from shipbuilding

The SIMATIC IPCs also demonstrate their quality in industries with special requirements. This includes pharmaceutical, oil and gas, and the food and beverage industries with the corresponding certifications. The same applies for the marine industry, where very specific requirements must be met. Our IPCs and operator panels have the necessary approvals even for this complex application. For an overview of all the marine certifications of SIMATIC IPCs, go to support.industry.siemens.com.

Design for industry

Experience the multiple-award-winning industrial design of our SIMATIC IPCs:
For Today and Tomorrow

SIMATIC IPCs combine innovation and continuity

With SIMATIC IPCs, you can rely on the highest degree of compatibility and long-term availability. We're constantly developing these devices further to give your investments the best possible protection. As innovations and new generations are introduced, you can continue ordering the previous version from us for at least 6 months. With almost all our solutions, we guarantee availability for 4 to 6 years and a repair and spare-parts service for 5 years. On request, you can also be provided with complete and fully ready-to-run design-freeze systems that are permanently tailored to a specific application. Wherever possible and practical, the new generation of a SIMATIC IPC series is compatible with its predecessors. Our systems feature a high level of image compatibility within each generation, which minimizes adaptation and replacement outlay.

Thanks to such practical, use-oriented innovation management, you benefit from innovations in performance and power consumption and secure your investments for many years to come.

Take advantage of:

- High investment protection
- Easy and inexpensive modernization
- Simple integration into existing machine concepts

Winner of the RedDot Award for innovative industrial design: SIMATIC IPC547G

Over 20 years of innovation and continuity

SIMATIC IPC627 How we handle innovation and investment protection for our users is demonstrated by the example our SIMATIC IPC627. Throughout five generations and over a period of more than 20 years, this industrial PC has always combined state-of-the-art technology with a proven design – sustainability in practice.

1995
Box PC 620
Box PC 627
Box PC 627B
Box PC IPC627C
Box PC IPC627D

2016
Looking for a compact, fanless industrial PC for use in machines, control enclosures, and control cabinets? Then our SIMATIC Embedded IPCs are right for you. Both the Panel and Box PC, the two series of Embedded IPCs, can be used to perform a variety of tasks directly on the machine or within a process. This includes control and operation, monitoring of machine data, and image processing and are ideal as a data concentrator or gateway. The IPC2x7 and IPC4x7 series each have the same image. Thanks to special components and routines, they’re also protected against voltage failure. If the power fails, the data remains consistent and when the computer is restarted all applications are started from a secure image. Because the devices have no fans or batteries, they’re virtually maintenance-free and based on components that remain available over the long term. We offer you an availability of 4 to 6 years along with a 5-year spare-parts service.

**SIMATIC IPC2x7: ultracompact**

Where space is limited and a compact solution is required, the SIMATIC IPC2x7E series is perfect. The enclosure volume is less than 1 liter. The devices in the series are extremely rugged, can be used at ambient temperatures up to 60°C, and are highly energy saving thanks to special processors.

### General features

<table>
<thead>
<tr>
<th>IPC227E – Nanobox PC – extremely compact, flexible mounting, and dust protection</th>
<th>IPC277E – Nanopanel PC compact with displays from 7”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating systems (preinstalled and activated)</td>
<td>Windows Embedded Standard 7 E/P/Windows 7 Ultimate (32 bit/64 bit in each case); Windows 10 IoT Enterprise LTSB 2016</td>
</tr>
<tr>
<td>Processor</td>
<td>Intel Celeron N2930 – 1.83 GHz (2.16 GHz); Intel Celeron N2807 – 1.58 GHz (2.16 GHz)</td>
</tr>
<tr>
<td>SATA HDD, SATA SSD, CFast</td>
<td>HDD 320 GB (IPC227E only); SSD 240/80 GB; CFast up to 16 GB (can be replaced from outside)</td>
</tr>
<tr>
<td>Networking options (onboard)</td>
<td>2 x Gigabit-Ethernet, 1 x PROFINET (real-time via standard Ethernet)</td>
</tr>
<tr>
<td>Expandability with cards</td>
<td>1 x PCIe (optional)</td>
</tr>
<tr>
<td>Integrated nonvolatile memory</td>
<td>NVRAM 512 KB (optional), of which 128 KB usable for software controller</td>
</tr>
<tr>
<td>Long-term availability</td>
<td>4 to 6 years</td>
</tr>
<tr>
<td>Repair and spare parts service</td>
<td>Additional 5 years</td>
</tr>
<tr>
<td>Industrial compatibility</td>
<td></td>
</tr>
<tr>
<td>Shock/vibration</td>
<td>15 g/1 g</td>
</tr>
<tr>
<td>Ambient temperature during operation</td>
<td>0°C to 60°C</td>
</tr>
</tbody>
</table>

1 As of start of delivery
SIMATIC IPC4x7E: the little powerhouse
The features that distinguish the SIMATIC IPC4x7E series are a powerful processor technology in a compact, fanless design. Thanks to their flexible storage concepts and varied interfaces, these devices can easily be tailored to special requirements and integrated into your infrastructure.

With SIMATIC Embedded IPCs, you benefit from:

- Virtually no maintenance effort
- Rugged design
- Flexible mounting options and installation positions
- High investment security

IPC427E – Microbox PC
powerful and versatile configuration

- Windows Embedded Standard 7 (E/P), 32 bit/64 bit; Windows 7 Ultimate, MUI, 64 bit; Windows 10 IoT Enterprise LT5B 2016
- Intel Celeron N2930 – 1.83 GHz (2.16 GHz); Intel Celeron N2807 – 1.58 GHz (2.16 GHz)
- SSD 320 GB, HDD 320 GB, 1 x CFast up to 16 GB (can be replaced from outside)
- 3 x Gigabit Ethernet, 1 x PROFINET (real-time via standard Ethernet)
- Up to 2 x PCIe (optional)
- 512 KB NVRAM, of which 128 KB usable for software controller

IPC477E – Panel PC
versatile configuration, displays from 15"

- Windows 7 Ultimate (Multi Language)/Windows Embedded Standard 7 (32 bit/64 bit in each case)
- Intel Core i7-3517UE – 1.7 GHz (2.8 GHz), Intel Core i3-3217UE – 1.6 GHz, Intel Xeon processor E3-1505L v5 – 2.0 GHz (2.8 GHz)
- SSD 240/80 GB (Standard)/CFAST 2 to 16 GB (internal and external)
- 2 x Gigabit Ethernet, 1 x MPI/PROFIBUS (optional), 1 x PROFINET (3 ports, optional)
- 0 x PCIe (deviates from built-in unit)
- 512 KB NVRAM, of which 128 KB usable for software controller

IPC477D PRO (15”/19”/22”)

- Windows 7 Ultimate (Multi Language)/Windows Embedded Standard 7 (32 bit/64 bit in each case)
- Intel Core i7-3517UE – 1.7 GHz (2.8 GHz), Intel Core i3-3217UE – 1.6 GHz, Intel Xeon processor E3-1505L v5 – 2.0 GHz (2.8 GHz)
- SSD 240/80 GB (Standard)/CFAST 2 to 16 GB (internal and external)
- 2 x Gigabit Ethernet, 1 x MPI/PROFIBUS (optional), 1 x PROFINET (3 ports, optional)
- 0 x PCIe (deviates from built-in unit)
- 512 KB NVRAM, of which 128 KB usable for software controller

- 4 to 6 years
- Additional 5 years

- 15 g/1 g
- 5 g/1 g
- 5 g/1 g

- 0°C to 55°C
- 0°C to 50°C
- 5°C to 45°C (up to 40° for i3/i7 processors with SSD)
SIMATIC Embedded IPCs are designed for maximum data security. We use a rugged, nonvolatile mass storage device to securely store your data. Special technologies ensure that application data remains consistent even in the event of a power failure. When the IPCs restart, they can immediately resume operation (power-failure protection). Finally, the integrated diagnostic software provides you with detailed information on the status of the storage media and system at all times so that faults can be promptly detected and failures prevented.

**Flexible mounting, simple integration**

Even when space is limited, SIMATIC Embedded IPCs can be flexibly mounted in control cabinets or directly at the machine. This enables you to take full advantage of the available space. The interfaces are located on the side and easily accessible, making it easy to install and connect the devices. Best of all, you can mount Embedded IPCs on a standard rail in conjunction with a power supply, completely without tools.

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### SIMATIC IPC277E/IPC277E: Connections and expansions

**IPC277E basic unit**

- Enclosed all-metal housing
- 24 V DC power supply, isolated
- CFast
- DisplayPort
- 4 x LED
- 2 x Gigabit Ethernet
- 3 x USB 2.0
- 2 x COM: RS232 / RS485 / RS422
- Power switch
- 1 x USB 3.0

**IPC277E basic unit 7”**

From 7” to 19”

Mounting depth from 77 mm (7” unit)

### SIMATIC IPC427E / IPC477E: Connections and expansions

**IPC427E basic unit**

- All-metal enclosure
- Power switch
- CFast slot
- 2 COM: RS232 / RS485 / RS422
- 2 x DisplayPort
- 4 x USB 3.0
- 3 x Gigabit Ethernet

**IPC477E basic unit 15”**

From 15” to 22”, available as single-touch

Mounting depth from 83 mm (15” unit)
Vertical or horizontal: mounting options

- Tool-free mounting on a standard rail
- Wall mounting with interfaces above or below
- Vertical mounting with an extremely narrow footprint

Everything in a single device: Embedded Panel PCs

SIMATIC Embedded Panel PCs combine an Embedded IPC and an industrial panel in a single device. Depending on the application, you can choose between many different display sizes (7” to 22”) with single-touch or multitouch technology and create a powerful, integrated solution for visualization tasks directly on the machine.

Our innovative SIMATIC IPCs are available in numerous versions with different display sizes. Complete bundles with WinCC visualization software preinstalled are also available for our embedded solutions.

* Optional IP65 fully enclosed (IPC477D PRO)
Power for Industry

SIMATIC High-end IPCs

Do you have to process extremely large volumes of data quickly or perform sophisticated visualization tasks? Do you want to expand your individual industrial PC with a number of cards or modules? Our High-end IPCs provide you with the ideal balance between innovative technology, high performance, and superlative investment protection. The devices are available as Rack, Box, or Panel PCs and are intended for use in the control room or as a high-performance, machine-level system in data-intensive processes.

SIMATIC IPC6x7D: high power in a compact design

The SIMATIC IPC6x7D series is impressive for its powerful Intel processors with up to 32 GB RAM and 4 slots for customized expansion in the Rack PC or 2 slots in the Box PC. As Rack PCs, these devices are compact with only two height units. As Panel PCs with an integrated industrial display for single-touch and multitouch operation, they serve as a powerful solution for machine-level operation and automation.

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### General features

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<th>IPC647D – Rack PC</th>
<th>IPC847D – Rack PC</th>
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</thead>
<tbody>
<tr>
<td><strong>High performance, functionality, and compactness</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Operating systems</strong> (preinstalled and activated)</td>
<td>Windows 7 Ultimate (32 bit/64 bit); Windows IoT Enterprise LTSB 2015; Windows Server 2008/2012 R2 (64 bit)</td>
</tr>
<tr>
<td><strong>Processor</strong></td>
<td>Intel Xeon E3-1268L v3 – 2.3 GHz (3.3 GHz) Core i5-4570TE – 2.7 GHz (3.3 GHz) Core i3-4330TE – 2.4 GHz</td>
</tr>
<tr>
<td><strong>Internal/removable drive bay</strong></td>
<td>Internal/removable drive bay: 500 GB; 1 TB; 2 x 1 TB; SSD 240 GB; RAID1: HDD (SAS or SATA) or SSD</td>
</tr>
<tr>
<td><strong>Networking options (onboard)</strong></td>
<td>2 x Gigabit Ethernet, 1 x PROFINET 3 ports optional, 1 x PROFIBUS/MPI optional</td>
</tr>
<tr>
<td><strong>Expandability with cards</strong></td>
<td>4 x PCI Express x 16 or 2 x PCI; 2 x PCIe x 16</td>
</tr>
<tr>
<td><strong>Integrated nonvolatile memory</strong></td>
<td>–</td>
</tr>
<tr>
<td><strong>Long-term availability</strong></td>
<td>4 to 6 years</td>
</tr>
<tr>
<td><strong>Availability</strong></td>
<td>Additional 5 years</td>
</tr>
<tr>
<td><strong>Shock/vibration</strong></td>
<td>5 g ± 0.5 g</td>
</tr>
<tr>
<td><strong>Ambient temperature</strong></td>
<td>During operation: 5°C to 55°C</td>
</tr>
</tbody>
</table>

¹ As of start of delivery
**SIMATIC IPC8x7D: flexibly expandable**

Where expandability is as important as performance, our SIMATIC IPC8x7D with up to 11 spare slots and numerous interfaces is just what you need. Design your customized system, all the way to sophisticated industrial server applications with powerful Intel processors and a RAID5 storage configuration.

**With SIMATIC High-end IPCs, you benefit from:**
- High performance and fast system response
- Extreme expandability through PCI Express slots
- Uniform platform with identical features
- Maximum system availability and data security
- Excellent energy efficiency
- Extremely easy servicing

<table>
<thead>
<tr>
<th>SIMATIC IPC8x7D – Box PC</th>
<th>SIMATIC IPC8x7D – Box PC</th>
<th>SIMATIC IPC677D – Panel PC</th>
</tr>
</thead>
<tbody>
<tr>
<td>High performance,</td>
<td>High performance,</td>
<td>High performance and</td>
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<tr>
<td>functionality,</td>
<td>functionality,</td>
<td>functionality</td>
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<tr>
<td>and compactness</td>
<td>and expandability</td>
<td>with single-touch and</td>
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<td></td>
<td></td>
<td>multitouch displays</td>
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<td></td>
<td></td>
<td>from 15&quot;</td>
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<table>
<thead>
<tr>
<th>Operating systems</th>
<th>Windows 7 Ultimate (32 bit/64 bit)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Intel Xeon E3-1269L v3 – 2.3 GHz (3.3 GHz)</td>
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<tr>
<td></td>
<td>Core i5-4570TE – 2.7 GHz (3.3 GHz)</td>
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<tr>
<td></td>
<td>Core i3-4330TE – 2.4 GHz</td>
</tr>
<tr>
<td></td>
<td>Intel Xeon E3-1275 v3 – 3.5 GHz (3.9 GHz)</td>
</tr>
<tr>
<td></td>
<td>Intel Xeon E3-1268L v3 – 2.3 GHz (3.3 GHz)</td>
</tr>
<tr>
<td></td>
<td>Core i5-4570TE – 2.7 GHz (3.3 GHz)</td>
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<td>Core i3-4330TE – 2.4 GHz</td>
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<tr>
<td></td>
<td>Intel Xeon E3-1269L v3 – 2.3 GHz (3.3 GHz)</td>
</tr>
<tr>
<td></td>
<td>Celeron G1820TE – 2.2 GHz</td>
</tr>
<tr>
<td>Drives</td>
<td>None; 250 GB; 500 GB; SSD 240 GB; SSD 240 GB; RAID1: HDD</td>
</tr>
<tr>
<td></td>
<td>RAID1: HDD (SAS or SATA) or SSD; RAID1: HDD (SAS or SATA)</td>
</tr>
<tr>
<td></td>
<td>RAID5: HDD (SAS or SATA)</td>
</tr>
<tr>
<td>Networking options</td>
<td>2 x Gigabit Ethernet;</td>
</tr>
<tr>
<td></td>
<td>1 x PROFINET (3 Ports) optional; 1 x PROFINET (3 Ports) optional; 1 x PROFINBUS/MPI optional</td>
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<tr>
<td></td>
<td>2 x PCI, 1 x PCIe x 16 and 1 x PCIe x 4</td>
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<tr>
<td></td>
<td>3 x PCI, 1 x PCIe x 16 and 1 x PCIe x 4</td>
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<td>2 x PCI, 1 x PCIe x 16 and 1 x PCIe x 4</td>
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<td>1 x PCIe x 16, 1 x PCI</td>
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<td></td>
<td>1 x PCIe x 16, 1 x PCI</td>
</tr>
<tr>
<td></td>
<td>3 x PCI, 1 x PCIe x 16 and 1 x PCIe x 4</td>
</tr>
<tr>
<td></td>
<td>Battery-backed SRAM 2 MB, of which 128 KB can be used for software controller</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Long-term availability</th>
<th>4 to 6 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repair/spare-parts service</td>
<td>Additional 5 years</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Shock/vibration</th>
<th>5 g/1 g</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient temperature</td>
<td>During operation: 5°C to 55°C</td>
</tr>
</tbody>
</table>
Our SIMATIC High-end IPCs feature the highest performance and an extremely fast system response. Powerful Intel processors up to Intel Xeon and fast onboard HD graphics handle even the most demanding tasks with ease. Thanks to PCI Express x 16 and USB 3.0, the device can communicate with external cards and media while the integrated Gigabit Ethernet ports permit the high-speed transfer of large volumes of data.

Extreme ruggedness and long-term availability
Whether as a Rack PC for the control room or a Box PC for use in a control cabinet or at the machine, with our High-end IPCs you can count on a rugged, future-proof platform for the industrial environment. The devices feature high installation, interface, and software compatibility. The High-end IPCs can also be optionally equipped with a PROFIBUS or PROFINET interface with three ports for communicating with manufacturing and production systems.

SIMATIC IPC647D/IPC847D: Connections and expansions

<table>
<thead>
<tr>
<th>Connection</th>
<th>Expansion slots:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 x Gigabit Ethernet</td>
<td>4 x PCIe x 16 or 2 x PCI, 2 x PCIe x 16</td>
</tr>
<tr>
<td>2 x USB 3.0, 2 x USB 2.0</td>
<td>2 x VGA or 2 x DVI-D via PCIe graphics card (optional)</td>
</tr>
<tr>
<td>2 x PS/2</td>
<td>2 x DisplayPort V1.2</td>
</tr>
<tr>
<td>1 x PROFINET (3 ports, opt.)</td>
<td></td>
</tr>
<tr>
<td>Module monitoring for redundant power supply</td>
<td></td>
</tr>
<tr>
<td>SATA-hard-disk removable drive bay (hot swap with RAID1)</td>
<td></td>
</tr>
</tbody>
</table>

SIMATIC IPC647D/IPC847D: Connections and expansions

<table>
<thead>
<tr>
<th>Connection</th>
<th>Expansion slots:</th>
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<tbody>
<tr>
<td>2 x Gigabit Ethernet</td>
<td>7 x PCI, 1 x PCIe x 16, 3 x PCIe x 4 or 3 x PCI, 5 x PCIe x 16, 3 x PCIe x 4</td>
</tr>
<tr>
<td>1 x USB 3.0, 1 x USB 2.0</td>
<td>2 x DisplayPort V1.2</td>
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<tr>
<td>1 x PROFINET (3 ports, opt.)</td>
<td></td>
</tr>
<tr>
<td>Module monitoring for redundant power supply</td>
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All-Round Powerhouse
SIMATIC High-end IPCs: platform for higher performance, availability, and efficiency

Special features of the SIMATIC Rack PCs

State-of-the-art, high-quality industrial design
- Vibration-shock-absorbing hard-disk holders
- Reliable dust protection and low noise due to fan-controlled overpressure ventilation
- Painted enclosure for increased corrosion protection

Easy services
- Front fan can be replaced without tools
- Enclosure can be quickly opened with the removal of one screw
- Hard disks and power supply can be replaced during operation

High level of security
- Lockable front door protects front drives, on/off button, and reset button from misuse
- USB flash drive can be operated while the front door is locked
- Additional internal USB interface for protection against unauthorized removal of USB flash drives (e.g., for software dongles)

Industrial server functionality
- Integrated UPS
- Hardware RAID
- Controller and SAS hard disks

Efficient self-diagnostics
Front LED display e.g. for simple identification of a faulty hard disk in the RAID group by HDD1, HDD2, or HDD3 ALARM (IPC847D), for example

Multimonitoring
Up to 5 monitors – via optional PCI Express x 16 graphics card and onboard graphics
Maximum system availability and data security
Due to their high-quality industrial design with vibration-/ shock-absorbing hard-disk holders, these devices are ideally suited for continuous use in an industrial environment. Rugged storage technologies protect you against data loss, and you can configure the systems with redundant components if needed. To protect your data from the outside, we support secure remote access with our SIMATIC IPC Remote Manager.

High energy efficiency
Lots of power, low consumption: thanks to the latest processor technology, our High-end IPCs use very little energy. Using Wake-on-LAN, you can easily start up the computer via the network – for example, after a weekend shutdown.
SIMATIC Advanced IPCs are extremely powerful and flexible Rack PCs that combine the latest processor technology with an innovative industrial design. The SIMATIC IPC547G, which won the Red Dot Award 2016 in the Product Design category, is ideal as a workstation or server in industrial applications such as image processing or as a reliable platform for SCADA systems. It supports multitasking with up to 5 monitors and demonstrates extreme flexibility in terms of expansions. With our specially designed innovation management system, we guarantee you 2 to 3 years of availability with an additional 3 year spare-parts and repair service.

With SIMATIC Advanced IPCs, you benefit from:

- Maximum performance with 6th generation Intel Xeon and Core-i processors, up to 64 GB DDR4 work memory, and numerous state-of-the-art interfaces
- High data availability with hot spare HDD and RAID1 or RAID5 support
- Excellent security thanks to lockable front door and access-protected USB ports
- Optimal servicing convenience thanks to a sophisticated design
- High availability through a redundant power supply and integrated system diagnostics

**General features**

<table>
<thead>
<tr>
<th>Feature</th>
<th>IPC547G – Rack PC latest technology and maximum performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating systems (preinstalled and activated)</td>
<td>Windows 7 Ultimate (64 bit); Windows 10 IoT Enterprise LTSB 2015 (64 bit); Windows Server 2008/2012 R2 (64 bit)</td>
</tr>
<tr>
<td>Processor</td>
<td>Intel Core i5-4570S; up to 3.6 GHz series Intel Pentium Dual Core G3420; 3.2 GHz</td>
</tr>
<tr>
<td>Drive</td>
<td>Internal removable drive bay*: 1 TB; 2 x 1 TB; SSD 240 GB; SSD 480 GB; 2 x SSD 480 GB; RAID1: HDD or SSD; RAID5: HDD*</td>
</tr>
<tr>
<td>Networking options (onboard)</td>
<td>2 x Gigabit Ethernet</td>
</tr>
<tr>
<td>Expandable with cards</td>
<td>2 x PCI; 2 x PCIe x 16; 1 x PCIe x 8; 2 x PCIe x 4</td>
</tr>
</tbody>
</table>

**Long-term availability**

<table>
<thead>
<tr>
<th>Feature</th>
<th>2 to 3 years</th>
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</thead>
<tbody>
<tr>
<td>Availability¹</td>
<td>2 to 3 years</td>
</tr>
<tr>
<td>Repair and spare-parts service</td>
<td>Additional 3 years</td>
</tr>
</tbody>
</table>

**Industrial compatibility**

<table>
<thead>
<tr>
<th>Feature</th>
<th>1 g/0.2 g</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shock/vibration</td>
<td>1 g/0.2 g</td>
</tr>
<tr>
<td>Ambient temperature during operation</td>
<td>0°C to 40°C</td>
</tr>
</tbody>
</table>

*Not with short enclosure

**Special features of IPC547G**

- Maximum data availability with hot spare HDD and RAID1 or RAID5 support
- Maximum system availability thanks to redundant power supply
- High level of security
  - Lockable front door
  - Two USB 3.0 interfaces on the front usable with the door shut and one internal USB interface for the access-protected use of USB mass storage
- Easy servicing
  - Front fan can be replaced without tools
  - Enclosure can be quickly opened with the removal of one screw
  - Hard disks and power supply unit can be replaced during operation

¹ As of start of delivery
Attractive Price-Performance Ratio for Flexible Use

SIMATIC Basic IPCs

Do you need an industrial PC for visualization and SCADA tasks, data acquisition, data management, measuring, and testing tasks in discrete manufacturing, in process automation, or in logistics or laboratory automation? With the SIMATIC Basic IPCs, we offer you an attractive price-performance ratio. Compared to office PCs, we offer a much more rugged device with higher availability. The Rack PCs are designed for 24-hour continuous operation, comply with high temperature, vibration, shock, and EMC requirements, and operate at full power even at ambient temperatures up to 40°C. We’ve also equipped the Basic IPCs with overpressure ventilation and dust filters. The Basic IPCs are available for delivery for 3 years and are also covered by our spare-parts and services for an additional 3 years.

With the SIMATIC Basic IPCs, you benefit from:

• Industrial functionality at an attractive price
• Substantially higher system availability compared to office PCs
• Versions available ex stock for shorter delivery periods

### General features

<table>
<thead>
<tr>
<th>IPC347E – Rack PC</th>
<th>ideal entry-level device in a rugged metal enclosure</th>
</tr>
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<td>Operating systems (preinstalled and activated)</td>
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<tr>
<td>Processor</td>
<td>Intel Core i5-4570S; up to 3.6 GHz series Intel Pentium Dual Core G3420; 3.2 GHz</td>
</tr>
<tr>
<td>Drive</td>
<td>500 GB</td>
</tr>
<tr>
<td>Networking options (onboard)</td>
<td>2 x Gigabit Ethernet</td>
</tr>
<tr>
<td>Expandable with cards</td>
<td>4 x PCI, 1 x PCIe x 16, 1 x PCIe x 8, 1 x PCIe x 1</td>
</tr>
<tr>
<td>Long-term availability</td>
<td>2 to 3 years</td>
</tr>
<tr>
<td>Repair and spare-parts service</td>
<td>Additional 3 years</td>
</tr>
<tr>
<td>Industrial compatibility</td>
<td>Not specified</td>
</tr>
<tr>
<td>Shock/vibration</td>
<td>2 to 3 years</td>
</tr>
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<td>Ambient temperature during operation</td>
<td>5°C to 40°C</td>
</tr>
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</table>

¹ As of start of delivery
Wherever you require fast access to information and data in an extensive or distributed network, our industrial monitors and Thin Clients are right at home. When conditions get a little harsh, these devices are also available with all-round IP65 protection. Want even more mobility? No problem: take along our industrial Tablet PC, which concentrates our industrial PC expertise in a convenient tablet format.

With our Industrial Flat Panels, Thin Clients, and Tablet PCs, you benefit from:

- Rugged design for industrial applications
- Flexible mounting options for stationary devices
- Brilliant displays with innovative operating concepts
- Components available over the long term
- Ergonomic operation in an industrial environment

**Industrial Flat Panel SIMATIC IFP: fast access on-site**

Our SIMATIC IFP series excels due to its brilliant industrial displays measuring 12", 15", 19", and 22" with single-touch or multitouch operation. These devices are intended for use as stationary display units at distances of up to 30 m (display port) or at a practically unlimited distance (Ethernet port) from the PC.

**Industrial Thin Clients SIMATIC ITC: for client-server architectures**

If you’re looking for a powerful operator panel for distributed HMI solutions, our SIMATIC ITC devices are right for you. They also have brilliant industrial displays measuring 12", 15", 19", and 22" and, with an Ethernet port, can be used almost anywhere. The Thin Clients are also available in a stand-alone version, or you can flexibly combine them with other systems.

**Industrial Tablet PC: handy companion to industry**

Our industrial Tablet PC is an extraordinarily powerful tablet PC with a 10" display for industrial applications. In it, we’ve combined everything that an industrial PC needs. This includes a rugged industrial design, sophisticated interfaces for optimal compatibility, and components with long-term availability so that you can not only customize the configuration of your Industrial Tablet PC but can also continue to use it for many years.
With their narrow frame and large display area, our monitors and panels not only look good but they also support efficient, fatigue-free, ergonomic operation. The industrial non-glare glass fronts are scratchproof and resistant to chemicals and have a circumferential metal frame to prevent damage. Via a projected-capacitive touch display, you can access your data quickly and intuitively based on gestures. For special commands, we also support two-hand operation as an additional security feature. The devices are also intelligent. They automatically detect inadvertent operation – for example, catching the screen with the ball of the hand or the buildup of dirt on the panel surface.

When operating your processes, take advantage of:

- Sharp, high-contrast image display with uniform brightness for better legibility
- Backlit LED display, dimmable from 0% to 100%
- Multitouch operation with intelligent fault detection
- Reliability and a long service life
- Extraordinary software support: individual programming, SIMATIC TIA Portal from V13, SIMATIC WinCC from V7.2, SIMATIC WinCC OA from V3.13
Tailored to Your Application
Device versions for special requirements

To meet special ruggedness, security, or hygiene requirements, we also offer our SIMATIC IPCs from a catalog in numerous versions, made from special materials, and with various degrees of protection and special certifications. Can't find your application? At your request, we'll develop and build an entirely customized system according to your specifications.

PRO – for all-round protection

The completely IP65-protected PRO devices and their expansion modules permit flexible operation mounted on a support bracket or stand. The back cover can easily be removed from the installed device – for example, to facilitate memory-card replacement. The PRO devices are available as flat-panel monitors and embedded panel PCs with various functionalities.

With the PRO devices, you benefit from:

• Mounting outside a control cabinet thanks to all-round IP65 protection
• Service-friendly design
• Easy assembly and cabling using standard connectors
• Modern, slim design with a completely scratchproof glass front
• Intuitive multitouch operation

INOX – for hygienic production

Our INOX versions meet the hygiene requirements of applications in the pharmaceutical, fine chemical, and food and beverage industries. These certified, stainless-steel devices with a smooth, splinter-proof surface are in accordance with the degree of protection of IP66K and are available as a 19” IPC277E Panel PC or IFP1900 with an Ethernet interface.

With the INOX devices, you benefit from:

• Superior hygiene thanks to all-round IP66K-protected operator panels in stainless-steel enclosures, flush-fitting front design, and food-standard seals
• Flexible mounting options outside the control cabinet through mounting on support arms or stands
Ex versions: for the really hard cases
The all-round IP66-protected operator panels for hazardous areas can be used in Ex Zones 1/21 and 2/22 without implementing any special measures, such as an expensive enclosure or additional certifications. They are specially designed for applications in the chemical, oil & gas, and marine industries. Four different mounting types can be ordered directly via the configurator and additional equipment options selected, including an additional camera, Bluetooth, wireless functionality, and an internal RFID reader.

The SIMATIC HMI Panel PC Ex is available as a 22” (16:9) or 15” (4:3) version.

With the Ex devices, you benefit from:
• Simple operation of the capacitive touch display (multitouch)
• Ergonomic operation even in direct sunlight thanks to a special display (1,000 cd/m²) for a view that is virtually glare-free
• High performance capability due to high-speed Intel Core-i7 multicore processor
• Large work memory and data memory (up to 8 GB RAM and 300 GB SSD)

Individual SIMATIC IPCs: an offer that leaves nothing to be desired
If your requirements are even more specialized and cannot be fully met with our standard devices, we will assemble your device with Customized Automation. You’ll also receive, among other things, individually designed panel fronts in just a few business days, including when small quantities are ordered.
Perfect interaction with SCADA software

- System-tested components reduce testing, validation, and integration overhead and shorten the time to market
- Redundancy (hard disks, servers, and integrated UPSs) guarantee high system and data availability
- Intelligent diagnostics reduce downtime and permit preventive maintenance
- Attractive complete package reduces the total cost of ownership

siemens.com/scada

SIMATIC IPC and S7-1500 Software Controller for innovative control solutions

- High system availability because it’s not dependent on the operating system
- Fail-safe control thanks to Safety Integrated
- High level of security through know-how protection and access protection with Security Integrated
- User-friendly engineering in the TIA Portal
- Simple implementation of interfaces with PC applications
- Integration of real-time-capable, high-level language code

siemens.com/software-controller

Industrial Tablet PC for mobile applications

- Ideal platform for acquiring, processing, and transferring data in accordance with specific commercial requirements
- Supports sequences in production, warehousing, plant maintenance, and field service
- High availability thanks to Remote Manager and integrated diagnostics

siemens.com/itp1000
Networking production with the digital world

- Open platform for acquiring, processing, and transferring production data to the cloud or in-house IT
- Rugged, maintenance-free gateways
- Reliable industrial servers

siemens.com/ipc227e  siemens.com/iot2000

Industrial image processing for optimal processes

- Powerful, reliable hardware
- High-performance quality inspection, machine operation, parts identification, process control, and code reading
- Flexible expansion options

siemens.com/ipc847d

SIMATIC WinCC Runtime Advanced visualization software

- PC-based control and monitoring solution for stand-alone systems at the machine level
- Basic package for visualization, reporting, and logging, and user management, flexibly expandable through VB scripts
- Expanded service concepts with remote operation, diagnosis, and administration via intranet and Internet in combination with e-mail communication

siemens.com/wincc
Successful Applications
SIMATIC IPCs: examples of concrete applications

Optimized usability in the pharmaceutical industry

As a specialist in tablet presses, Korsch AG serves customers worldwide. Our innovative machines and concepts enable Korsch to adapt perfectly to customers’ individual wishes. To gain an additional competitive advantage in the area of design and usability, Korsch is collaborating with Siemens and CaderaDesign. Sophisticated, innovative operation with gestures and a powerful automation and visualization solution ensure fast, efficient, secure operation and significantly reduce training effort.

Control system optimizes the productivity of a hot-dip galvanizing plant

Hot Dip Galvanizing Plant 2 at Thyssenkrupp Steel Europe was modernized with a new control system. Based on a SIMATIC IPC and using the SIMATIC WinCC SCADA system, the SIMATIC Process Historian, and SIMATIC Thin Clients for visualization in the plant, the Siemens Solution Partner designed an innovative and future-oriented solution characterized by high availability and data security, thus improving the performance and process safety of the entire plant.

PC-based automation solution supports research

The Laboratory for Materials and Joining Technology at the University of Paderborn in Germany is researching innovative joining technologies in the lightweight construction sector. Among other things, researchers are using a complete, multifunctional, robot-based joining cell in which various joining techniques can be investigated in a realistic production environment. Large volumes of data must be acquired, processed, and visualized during the experiments—a task handled by a SIMATIC IPC. The system has sufficient power reserves for future research and is easy to program and expand.
Machine-data acquisition

AGCO GmbH, one of the largest manufacturers and suppliers of tractors and farm machinery worldwide, offers high-tech solutions for agriculture. To facilitate more economical production processes with reduced consumption of resources, centralized and consistent end-to-end machine data acquisition has been introduced by means of panel PCs with all-round protection. Simple retrofitting of the panel PCs directly into the production plant on a stand meant that there was no need for the additional installation of a control desk, thus reducing costs even further.

Retrofitting for high performance and precision

Heinrich Kuper GmbH & Co. KG, a global player in the woodworking and plastics processing industry, is a specialist in retrofitting older machines. New automation and safety engineering with a fail-safe software controller on a maintenance-free embedded PC multiplied the performance and precision of a customer’s plant, as well as providing an integrated diagnostics capability. The control cabinet size was reduced by 20 percent and wiring by 50 percent, and machine downtimes were also shortened.

Control and monitoring of wind turbine generator systems

Siemens turbines for offshore wind farms feature technical characteristics that ensure long-term, low-maintenance operation. Rugged box PCs in a shock- and vibration-proof, all-metal enclosure with high electromagnetic compatibility ensure safe 24-hour continuous operation at ambient temperatures up to 55°C. RAID1 mirror-disk systems have been selected to provide a high level of data security. International standards, CE and UL certification, and worldwide servicing ensure global use.

More references are available online: 

siemens.com/automation/references
Always by Your Side
Service and support for SIMATIC IPCs

SIMATIC IPCs are designed to operate reliably around the clock, 365 days a year. To keep them running for many years to come, we have established an appropriate service and support concept for fast and efficient assistance – and not just in the event of faults.

**Global online support**
Whether it’s important technical documentation, comprehensive FAQs, tools and downloads, or newsletters, we provide you with quick assistance and support around the clock via the Internet with comprehensive expertise covering all sectors and application areas of SIMATIC IPCs.

**Online Support app**
With the Online Support app, you have access to more than 300,000 documents, anytime and anywhere. Whether you have problems during the implementation of a project, need help troubleshooting, or want to expand your system or plan a new plant, we are here for you.

**PED (Product Equipment Data) service tool**
With the PED service tool, you can identify and manage the device and component data of SIMATIC IPCs/PGs online and worldwide by means of standard Internet browsers.

**SIMATIC hotline**
The SIMATIC hotline is available by phone 24 hours a day, 365 days a year. Our engineers offer ample experience in development, system commissioning, and system tests, and incorporate the development and production departments in solving your problem, enabling them to assist you even with difficult cases.

**Repair and service**
Siemens has 36 repair centers in 29 countries and subsidiaries in 190 countries. As a user, you’re thus provided with maximum qualified support from PC repairs in our Repair Centers to on-site servicing.

**Project support**
When you need support for the dimensioning and options of a PC-based automation project, or even for engineering, our specialists in the PC-based Competence Centers in Italy, Germany, and China offer you expert assistance.

There’s more to it:
siemens.com/pc-based-automation
siemens.com/online-support

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youtube.com/siemens
Siemens offers automation and drive products with Industrial Security functions that support the safe operation of the plant or machine. They are an important component in a holistic Industrial Security concept. With this in mind, our products undergo continuous development. We therefore recommend that you keep yourself informed with respect to our product updates and only use the respective current versions. Further information can be found at:
There you can also register for a product-specific newsletter.

To ensure the secure operation of a plant or machine, it is also necessary to take suitable preventive action (e.g., cell protection concept) and to integrate the automation and drive components into a state-of-the-art holistic industrial security concept for the entire plant or machine. Third-party products that may be in use must also be taken into account.

More detailed information can be found at:
www.siemens.com/industrialsecurity

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