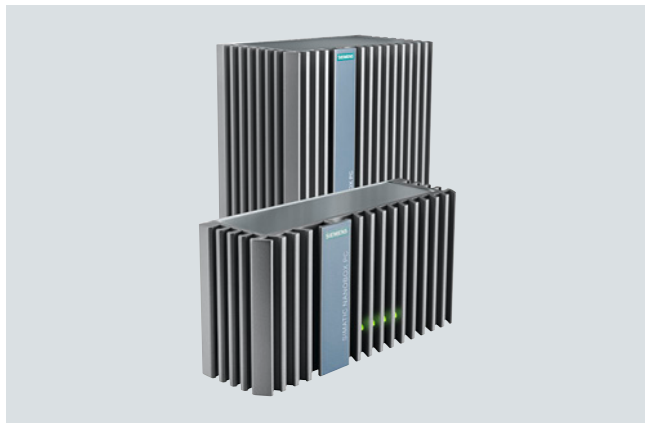


# SIMATIC IPC227E



***SIMATIC IPC227E (Nanobox PC): The Box PC with optimized performance in compact design – maintenance-free and rugged***

The SIMATIC IPC227E Nanobox PC is an extremely compact and flexible embedded industrial PC.

Thanks to its closed, dust-protected all-metal enclosure, the IPC227E offers maximum industrial functionality for flexible use under harsh conditions – while remaining maintenance-free.

Modern interfaces and the option for expansion via a PCIe slot mean this Box PC can be easily integrated into the automation system. The latest Intel Dual-Core and Quad-Core processors ensure excellent performance here in an ultra-compact design.

## Basic design

- All-metal enclosure, resistant to vibrations and shocks, also with high electromagnetic compatibility
- Isolated power supply:
  - 24 V DC (19.2 to 28.8 V)
- Graphics connection DisplayPort
  - Resolution: Up to 2 560 x 1 600 pixels
- Interfaces (accessible from one side):
  - 2 x LAN 10/100/1000 Mbps Ethernet interface (RJ45)
  - 1 x USB 3.0, 3 x USB 2.0
- Field bus
  - PROFINET real-time via Standard Ethernet interface

## Design versions

- Processor / main memory configuration:
  - Intel Celeron N2807, 1.58 GHz, dual-core
  - Intel Celeron N2930, 1.83 GHz, quad-core
  - respectively without/with trusted platform module TPM V2.0
- Main memory configuration
  - 2 GB, 4 GB or 8 GB RAM
- Retentive memory
  - 512 KB retentive memory (NVRAM) optional, of which 128 KB can be written within the buffer time (optional, available soon)
- Serial interface expansion as device version:
  - Without MPI interface
  - 2 COM interfaces (RS232 / RS485 / RS422; switchable in the BIOS)
- Hardware expansion as device versions:
  - 1 x PCIe slot (optional)
- Drives:
  - CFast drive (replaceable, accessible):
    - 4 GB, 8 GB or 16 GB, 30 GB or
  - 80 GB solid-state drive, 2.5" or
  - 240 GB solid-state drive, 2.5" or
  - 480 GB solid-state drive, 2.5" or
  - 320 GB hard disk, 2.5"
- Pre-installed operating systems:
  - Windows Embedded Standard 7 E / P, 32-bit or 64-bit
  - Windows 7 Ultimate, Multi-Language, 32-bit or 64-bit
  - Windows 10 IoT Enterprise LTSB 2016, MUI, 64-bit

## Integrated diagnostics DiagBase

- Integrated, parameterizable monitoring functions (program execution / watchdog, internal enclosure temperature, mass storage)

## Technical specifications SIMATIC IPC227E

Installation type/mounting	
Design	Box PC, built-in unit
Supply voltage	
Type of supply voltage	24 V DC
Mains buffering	
Mains/voltage failure stored energy time	20 ms
Processor	
Processor type	Intel Celeron N2807 / N2930
Drives	
Hard disk	2.5" SATA ≥ 320 GB
SSD	yes; ≥ 80 GB optional
Memory	
Type of memory	DDR3L
Main memory	2 / 4 / 8 GB
Data areas and their retentivity	
retentive data area in total (incl. times, counters, flags), max.	512 KB; 128 KB can be stored in the buffer time; optional
Hardware configuration	
Slots	
free slots	1x PCIe x1 (optional)
Interfaces	
serial interfaces	Without / 2x COM (RS 232 / RS 485 / RS 422; selectable in BIOS)
USB port	1 x USB 3.0 / 3 x USB 2.0
Connection for keyboard/mouse	USB / USB
Video interfaces	
Graphics interface	1x DisplayPort
Industrial Ethernet	
Industrial Ethernet interface	Onboard, 2 x 10/100/1000 Mbit/s, RJ45, no plug-in card necessary
• 100 Mbit/s / 1000 Mbit/s	• Yes / Yes

Monitoring functions	
Temperature	Yes
Watchdog	Yes
Status LEDs	Yes
Fan	No
Monitoring function via network	optional
EMC	
Interference immunity against discharge of static electricity	
Interference immunity against discharge of static electricity	<ul style="list-style-type: none"> <li>• ±6 kV contact discharge acc. to IEC 61000-4-2;</li> <li>• ±8 kV air discharge acc. to IEC 61000-4-2</li> </ul>
Interference immunity to cable-borne interference	
Interference immunity on supply cables	<ul style="list-style-type: none"> <li>• ±2 kV acc. to IEC 61000-4-4, burst;</li> <li>• ±1 kV acc. to IEC 61000-4-5, surge symmetric;</li> <li>• ±2 kV acc. to IEC 61000-4-5, surge asymmetric</li> </ul>
Interference immunity on signal cables > 30 m	±2 kV acc. to IEC 61000-4-5, surge, length > 30 m
Interference immunity on signal cables < 30 m	<ul style="list-style-type: none"> <li>• ±1 kV acc. to IEC 61000-4-4, burst, length &lt; 3 m;</li> <li>• ±2 kV acc. to IEC 61000-4-4, burst, length &gt; 3 m</li> </ul>
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 against high-frequency electromagnetic fields	
Interference immunity against high-frequency radiation	<ul style="list-style-type: none"> <li>• 10 V/m for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3;</li> <li>• 3 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3;</li> <li>• 10 V for 10 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6</li> </ul>
Interference immunity to magnetic fields	
Interference immunity to magnetic fields at 50 Hz	100 A/m; acc. to IEC 61000-4-8
Emission of conducted and non-conducted interference	
Interference emission via line/AC current cables	EN 61000-6-3, EN 61000-6-4, CISPR 22 class B, FCC class A

Degree and class of protection	
IP at the front / rear	IP40 / IP40
Standards, approvals, certificates	
CE mark	Yes
UL approval • UL 508	Yes • Yes
cULus	Yes
RCM (former C-TICK)	Yes
KC approval	Yes
FCC	Yes
EMC	CE, EN 61000-6-4:2007, EN 61000-6-2:2005
Dust protection	foreign particles > 1 mm
Ambient conditions	
Ambient temperature during operation	0 °C ... 60 °C
Relative humidity	Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5% to 80% at 25 °C (no condensation), Storage: 5% to 95% at 25 °C (no condensation)

Vibrations	
Vibration load in operation	Tested acc. to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8 m/s <sup>2</sup> (1 g)
Shock testing	
Shock load during operation	Tested acc. to DIN IEC 60068-2-27: 150 m/s <sup>2</sup> , 11 ms
Operating systems	
Operating systems	<ul style="list-style-type: none"> <li>• Windows 7 Ultimate (multi language) 32 bits / 64 bits</li> <li>• Windows Embedded Standard 7 E/P 32 bits / 64 bits</li> </ul>
pre-installed and activated	Yes
without	Yes
Software	
SIMATIC Software	Optional package with SIMATIC WinCC or WinAC RTX
Dimensions	
<ul style="list-style-type: none"> <li>• Width</li> <li>• Hight</li> <li>• Depth</li> </ul>	<ul style="list-style-type: none"> <li>• 191 mm</li> <li>• 100 mm</li> <li>• 60 mm</li> </ul>

SIMATIC IPC – the more Industrial PC	
More information on SIMATIC IPC is available at:	<a href="http://www.siemens.com/simatic-ipc">www.siemens.com/simatic-ipc</a>
A current overview of the configurations is provided by the SIMATIC IPC Online-Konfigurator:	<a href="http://www.siemens.com/ipc-configurator">www.siemens.com/ipc-configurator</a>
In-depth information is available in the SIMATIC manuals:	<a href="http://www.siemens.com/simatic-doku">www.siemens.com/simatic-doku</a>
Information material for download:	<a href="http://www.siemens.com/simatic/printmaterial">www.siemens.com/simatic/printmaterial</a>
Technical documentation is available in our Service& Support portal:	<a href="http://www.siemens.com/automation/support">www.siemens.com/automation/support</a>
Your personal contact partner is listed at:	<a href="http://www.siemens.com/automation/partner">www.siemens.com/automation/partner</a>
Electronic ordering via the Internet with the Mall:	<a href="http://www.siemens.com/industrymall">www.siemens.com/industrymall</a>
Additional information on PC-based Automation with SIMATIC is available under:	<a href="http://www.siemens.com/pc-based-automation">www.siemens.com/pc-based-automation</a>
Additional information on the TIA Portal:	<a href="http://www.siemens.com/tia-portal">www.siemens.com/tia-portal</a>
Additional information on SIMATIC Safety Integrated:	<a href="http://www.siemens.com/f-cpu">www.siemens.com/f-cpu</a>