

SIMATIC IPC547E



IPC547E, front view

The SIMATIC IPC547E is a rugged industrial PC in 19" rack design (4 HU).

It offers:

- Maximum performance
- Attractive price
- Intel Core i technology

Design

Basic design

- All-metal 19" enclosure for flush mounting (4 HU) for high electromagnetic compatibility and mechanical ruggedness
- Prepared for mounting on telescopic rails
- Horizontal and vertical installation is possible. It can be used as an industrial tower PC with the appropriate kit
- Lockable front flap for authorized access to front swap media, operator controls (Reset, Power), USB interfaces, front fan and dust filter
- Card retainer for PC modules for safe transport (vibration and shock)
- Replacement of PC components (e.g. PC cards or hard disks) with a single tool
- Replacement of the dust filter without tool
- Dust protection by means of overpressure ventilation using bearing seated front fan through filter
- 6 slots for installing drives
 - Front: 3 x 5.25" / 4 x HDD swap frames (low-profile); 1 x 5.25" (slim) for DVD±R/RW)
 - Internal: 2 x 3.5"
- Graphics on-board, Intel HD graphics integrated in the processor, up to 3840 x 2160 pixels, 60 Hz, 32-bit colors

- Interfaces:
 - 2 x Intel Gbit Ethernet (RJ45, teaming-capable)
 - 4 x USB 3.0: 2 x at the rear, 2 x at the front
 - 7 x USB 2.0: 6 x rear, 1 x internal e.g. for software dongle with optional interlocking
 - 2 x DisplayPort V1.2, 1 x DVI-I, 1 x COM1, 2 x PS/2
 - Audio: Line In/Out, Mic
- 7 spare slots for expansions (all long):
 - 1 x PCI Express x16
 - 1 x PCI-Express x16 (4 lanes)
 - 1 x PCI-Express x8 (1 lane)
 - 4 x PCI
- Power supply:
 - AC (100 ... 240 V, 50 ... 60 Hz)

Design versions

- Processors:
 - Intel Core i7-4770S (4C/8T, 3.1 (3.9) GHz, 8 MB cache, iAMT)
 - Intel Core i5-4570S (4C/4T, 2.9 (3.6) GHz, 6 MB cache, iAMT)
 - Intel Pentium Dual Core G3420 (2C/2T, 3.3 GHz, 3 MB cache)
- Main memory expansion from 2 GB up to 32 GB, DDR3-1600 SDRAM (configured as dual channel for the highest performance from 4 GB upwards)
 - Available memory configurations: 2 GB, 4 GB, 8 GB ¹⁾, 16 GB ¹⁾, 32 GB ¹⁾
- Graphics expansion:
 - PCI-Express graphics card x16 (Dual Head: 2 x VGA or 2 x DVI-D), 512 MB, up to 2048 x 1536 pixels, 85 Hz, 32-bit colors
 - Adapter cable (DVI-I to VGA) for the onboard graphics interface (1 x VGA) for connecting an analog monitor
- Drives:
 - Serial ATA 3.5" hard disks (HDD) with NCQ technology
 - Solid-State Drive (SSD) Serial ATA 2.5" with MLC technology
 - Internal installation:
 - 1 x 500 GB HDD
 - 1 x 1 TB HDD
 - 2 x 1 TB HDD
 - 1 x 240 GB SSD
 - RAID1, 1 TB (2 x 1 TB HDD, mirror disks) ²⁾
 - Installation at the front in low-profile swap frame ("hot-swap" in RAID configuration):
 - 1 x 500 GB HDD
 - 1 x 1 TB HDD
 - 2 x 1 TB HDD
 - 1 x 240 GB SSD
 - RAID1, 1 TB (2 x 1 TB HDD, mirror disks) ²⁾
 - RAID1, 1 TB (2 x 1 TB HDD, mirror disks) ²⁾ + 1 x 1 TB HDD as hot spare

RAID1, 1 TB (2 x 1 TB HDD, mirror disks)²⁾ + 1 x 80 GB SSD
 (operating system installed on SSD if configured)
 RAID5, 2 TB (3 x 1 TB, striping with parity)²⁾
 RAID5, 2 TB (3 x 1 TB, striping with parity)²⁾ + 1 x 1 TB HDD
 as hot spare

- Optical drive DVD±R/RW (slim)
- Additional interfaces:
 - 1 x COM2 and 1 x LPT on rear
- Power supply:
 - 100 ... 240 V AC, 50 ... 60 Hz redundant
- Country-specific power cable
- Preinstalled and activated operating systems
 - Windows 7 Ultimate Multi-Language (32/64-bit)
 - Windows Server 2008 R2 Standard Edition incl. 5 Clients Multi-Language (64-bit)



IPC547E, front view with front lid open



IPC547E, rear view

A tower kit can be ordered as an accessory for converting the computer into an industrial tower PC.



IPC547E with tower kit

Integration

Integrated interfaces:

- **Ethernet**
 The integrated Ethernet interfaces (10/100/1000 Mbit/s; teaming-capable) can be used for IT communication and for exchanging data with PLCs such as SIMATIC S7 (using the "SOFTNET S7" software package).
- **Other interfaces**
 The following interfaces are available for connecting additional I/O devices:
 - 4 free PCI slots and one PCIe x8 slot for PC modules,
 - 2 free PCIe x16 slots for optional graphics expansions,
 - USB 3.0 und 2.0,
 - serial/parallel interfaces

¹⁾ Can only be used on 64-bit operating systems

²⁾ SATA RAID controller onboard in Intel Q87 chipset

Technical specifications

SIMATIC Rack PC	SIMATIC IPC547E	SIMATIC Rack PC	SIMATIC IPC547E
General features		Drives	
Design	19" rack PC, 4 HU	Hard disks, SATA 3.5" with NCQ technology Solid State Drives, SATA 2.5" with MLC technology	Internal installation <ul style="list-style-type: none"> • 1 x 500 GB HDD • 1 x 1 TB HDD • 2 x 1 TB HDD • 1 x 240 GB SSD • RAID1, 1 TB (2 x 1 TB HDD, mirror disks)³⁾ Installation at the front in swap frame (low-profile) <ul style="list-style-type: none"> • 1 x 500 GB HDD • 1 x 1 TB HDD • 2 x 1 TB HDD • 1 x 240 GB SSD • RAID1, 1 TB (2 x 1 TB HDD, mirror disks), "hot swap"³⁾ • RAID1, 1 TB (2 x 1 TB HDD, mirror disks), "hot swap"³⁾ + 1 x 1 TB HDD as hot spare • RAID1, 1 TB (2 x 1 TB HDD, mirror disks), "hot swap"³⁾ + 1 x 80 GB SSD (operating system installed on SSD if configured) • RAID5, 2 TB (3 x 1 TB HDD, striping with parity), "hot swap"³⁾ • RAID5, 2 TB (3 x 1 TB HDD, striping with parity), "hot swap"³⁾ + 1 x 1 TB HDD as hot spare
Processors	<ul style="list-style-type: none"> • Intel Core i7-4770S (4C/8T, 3.1 (3.9) GHz, 8 MB cache, iAMT) • Intel Core i5-4570S (4C/4T, 2.9 (3.6) GHz, 6 MB cache, iAMT) • Intel Pentium Dual Core G3420 (2C/2T, 3.3 GHz, 3 MB cache) 		
Chipset	<ul style="list-style-type: none"> • Intel Q87 		
Main memory	<ul style="list-style-type: none"> • From 2 GB DDR3 -1600 SDRAM • Dual channel support • 4 DIMM base • Expandable up to 32 GB¹⁾ 		
Spare slots for expansions (all long)	<ul style="list-style-type: none"> • 1 x PCI Express x16 • 1 x PCI-Express x16 (4 lanes) • 1 x PCI-Express x8 (1 lane) • 4 x PCI 		
Graphic	<ul style="list-style-type: none"> • Onboard Intel HD 4600 graphics controller integrated into the processor Shared Video Memory up to 1.7 GB Up to 3840 x 2160 pixels at 60 Hz image refresh rate and 32-bit colors • PCI Express graphics card (Dual Head: 2 x VGA or 2 x DVI-D) in the PCIe x16 slot (optional) 512 MB Up to 2048 x 1536 pixels at 85 Hz image refresh rate and 32 bit colors 	DVD±R/RW, 5.25" (slim), SATA	<ul style="list-style-type: none"> • 8 x 8 x 6 x (DVD media) • 24 x 10 x 16 x (CD media)
Operating Systems	<ul style="list-style-type: none"> • Without Preinstalled and activated (supplied on restore DVD): • Windows 7 Ultimate MUI (32/64-bit) • Windows Server 2008 R2 incl. 5 Client MUI (64 bit) MUI (Multilanguage User Interface, 5 languages): English, German, French, Italian, Spanish Project-specific on request: <ul style="list-style-type: none"> • Linux²⁾ • Other 	Slots for drives	Front: <ul style="list-style-type: none"> • 4 x 5.25" (1 x slim) Internal: <ul style="list-style-type: none"> • 2 x 3.5"
Power supplies	<ul style="list-style-type: none"> • 100 ... 240 V AC, 50 ... 60 Hz, with bridging of short-term power failures: max. 20 ms at 0.85% rated voltage • Redundant 100 ... 240 V AC, 50 ... 60 Hz 	Ports	
		Ethernet	2 x Intel Gigabit Ethernet (RJ45, teaming-capable)
		USB 3.0	<ul style="list-style-type: none"> • 2 x front (high current) • 2 x rear (high current)
		USB 2.0	<ul style="list-style-type: none"> • 6 x rear (high current) • 1 x internal (high current), e.g. for USB dongle with optional interlocking
		Serial	9-pole COM1 (V.24); COM2 (V.24) (optional)
		Parallel	LPT (optional)
		VGA	Optionally via adapter cable

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DVI-I	1 x
DisplayPort V1.2	2 x
PS/2	2 x (keyboard, mouse)
Audio	1 x Line In; 1 x Line Out; 1 x Mic.
Monitoring functions	
Basic functionality	Message locally via DiagBase software
Temperature	When permitted operating temperature range is exceeded
Fan	Speed monitoring <ul style="list-style-type: none"> • 1 x front fan • 1 x CPU fan • 1 x power supply fan
Watchdog	<ul style="list-style-type: none"> • Monitoring of program execution • Monitoring time can be parameterized in software
Monitoring functions via the network	<p>SIMATIC IPC DiagMonitor Version V4.4.x.x or higher (optional)</p> <p>Remote monitoring capability for:</p> <ul style="list-style-type: none"> • Watchdog • Temperature • Fan speed • Battery • Hard disks (SMART) • System/Ethernet <p>Communication:</p> <ul style="list-style-type: none"> • Ethernet interface (SNMP protocol) • OPC for integration in SIMATIC software • Client server architecture • Structure of log files
Front LEDs	<ul style="list-style-type: none"> • POWER (PC switched on) • HDD (access to hard disk) • TEMP (temperature monitoring) • FAN (fan monitoring) • HDD0/1/2/3 alarm (HDD monitoring for RAID configurations)

SIMATIC Rack PC	SIMATIC IPC547E
Environmental conditions	
Degree of protection	IP30 front, IP20 rear according to EN 60529
Dust protection	With the front door closed according to IEC 60529 filter class G2 EN 779, 99% of particles > 0.5 mm are filtered
Protection class	Protection class I according to IEC 61140
Vibration load during operation ⁴⁾	IEC 60068-2-6, 10 cycles <ul style="list-style-type: none"> • 20 ... 58 Hz: 0.015 mm • 58 ... 200 Hz: 2 m/s² (approx. 0.2 g)
Shock load in operation ⁴⁾	IEC 60068-2-27 <ul style="list-style-type: none"> • Half-sine: 9.8 m/s², 20 ms (approx. 1 g), 100 shocks per axis
Electromagnetic compatibility (EMC)	
Emitted interference	EN 61000-6-3; EN 61000-6-4; CISPR 22 / EN 55022 Class B; FCC Class A; EN 61000-3-2 Class D; EN 61000-3-3
Immunity to conducted interference on the supply lines	<ul style="list-style-type: none"> • ± 2 kV (IEC 61000-4-4, burst) • ± 1 kV (IEC 61000-4-5, symm. surge) • ±2 kV (IEC 61000-4-5, asymm. surge)
Noise immunity on signal lines	<ul style="list-style-type: none"> • ±2 kV (IEC 61000-4-4, burst, length > 30 m) • ± 1 kV (IEC 61000-4-4, burst, length < 30 m), • ± 2 kV (IEC 61000-4-5, surge, length > 30 m)
Immunity to static discharge	<ul style="list-style-type: none"> • ±4 kV, contact discharge (IEC 61000-4-2) • ±8 kV, air discharge (IEC 61000-4-2)
Immunity to high radio frequency interference	<ul style="list-style-type: none"> • 1 V/m 80% AM; 2 ... 2.7 GHz (IEC 61000-4-3) • 10 V/m 80% AM; 80 MHz ... 1 GHz and 1.4 GHz ... 2 GHz (IEC 61000-4-3); • 10 V, 10 kHz ... 80 MHz (IEC 61000-4-6)
Immunity to magnetic fields	100 A/m, 50/60 Hz (IEC 61000-4-8)
Ambient temperature during operation	5 ... 40 °C Note: Limitations for operation of DVD±R/RW

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Humidity during operation	5 ... 80 % at 25 °C (no condensation)
Approvals and safety regulations	
Safety regulations	IEC 60950-1; UL60950; CSA
Approvals	cULus 60950
CE mark	For use in industrial areas as well as domestic, business and commercial environments: <ul style="list-style-type: none"> • Emitted interference: EN 61000-6-3:2007 • Noise immunity: EN 61000-6-2:2005
Dimensions and weights	
Installation dimensions (W x H x D) in mm	434 x 177 x 446
Weight, approx.	19 kg

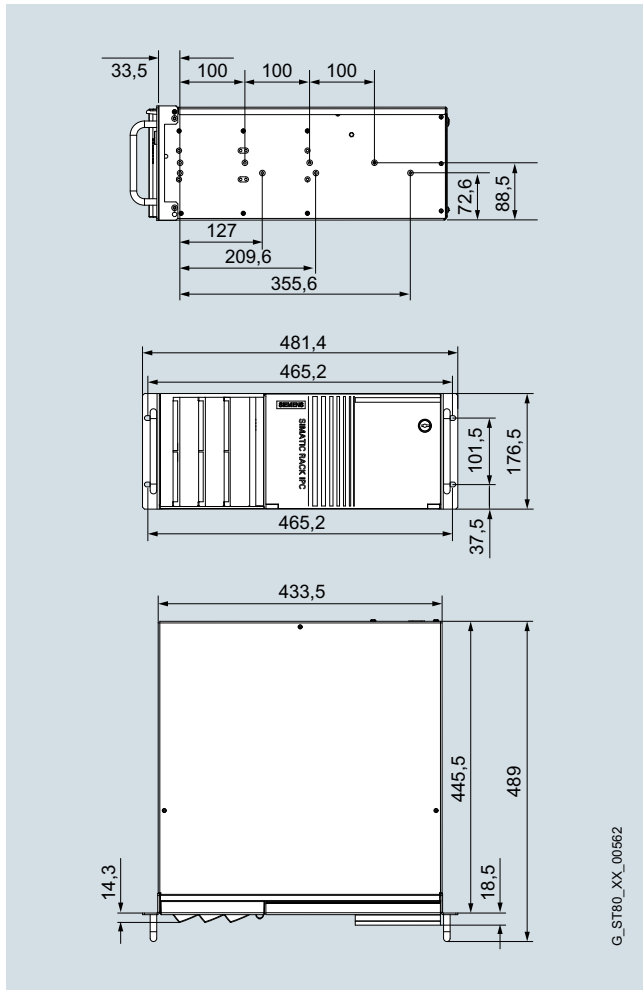
- 1) Memory information: In order to use a memory with more than 4 GB, a 64-bit operating system is required. In the case of configurations with 4 GB, the visible memory can be reduced to about 3.5 GB or less (with 32-bit operating systems). In configurations with 8 GB, the visible memory can be reduced to about 7.5 GB or less.
- 2) Suitable for specific LINUX versions in accordance with the specifications of the Siemens manufacturer's declaration "Suitable for LINUX", see <http://www.siemens.com/simatic-pc/suited-for-linux> (LINUX is a trademark of Linus Torvalds)
- 3) SATA RAID controller onboard in Intel Q87 chipset
- 4) Restrictions with operation of optical drives and hard disks in swap frames

Note regarding SIMATIC PC operating system licenses

The accompanying operating system license is only valid for installation on the respective supplied SIMATIC IPC. Installation can only be performed on these SIMATIC systems in accordance with Microsoft OEM licensing regulations.

Dimensional drawings

All dimensions in mm. For mounting cut-out see technical specifications.



SIMATIC IPC547E, Rack PC

Technical data for telescopic rails

Carrying capacity per pair, min.	30 kg
Extended length when fully withdrawn, min.	470 mm
Rail thickness, max.	9.7 mm
Fixing screws	M5 x 6 mm

The fixing screws of the telescopic rails should not project more than 5 mm into the enclosure.

The enclosure is prepared for the following telescopic rails:

- Rittal: Type 3659.180 for 600 mm cabinet / Type RP 3659.190 for 800 mm cabinet
- Schroff: Type 20110-072

SIMATIC IPC – the more Industrial PC	
More information on SIMATIC IPC is available at:	www.siemens.com/simatic-ipc
You can select, configure and order devices for Totally Integrated Automation with the TIA Selection Tool:	www.siemens.com/tia-selection-tool
In-depth information is available in the SIMATIC manuals:	www.siemens.com/simatic-doku
Information material for download:	www.siemens.com/simatic/printmaterial
Technical documentation is available in our Service& Support portal:	www.siemens.com/automation/support
Your personal contact partner is listed at:	www.siemens.com/automation/partner
Electronic ordering via the Internet with the Industry Mall:	www.siemens.com/industrymall
Additional information on PC-based Automation with SIMATIC is available under:	www.siemens.com/pc-based-automation
Additional information on the TIA Portal:	www.siemens.com/tia-portal
Additional information on customer-specific products / systems:	www.siemens.com/customized-automation
Additional information on Industrial Flat Panels in the Internet:	www.siemens.com/simatic-ifp