

Overview



Rack PCs are flexible, high-availability industrial PC systems for powerful yet compact applications using 19" technology.

Four device classes are available for different requirements:

SIMATIC IPC347 – high performance at an optimized price

SIMATIC IPC547 – latest technology and maximum performance at an attractive price

SIMATIC IPC647 – maximum compactness combined with maximum industrial functionality

SIMATIC IPC847 – maximum expandability and industrial functionality

SIMATIC IPC1047 – maximum performance and expandability

Shared industrial functionality of the IPC series 547, 647 and 847

- Maximum system performance for complex automation tasks and computationally intensive PC tasks in the industrial environment through use of Intel Core processors
- Designed for 24-hour continuous operation
- Monitoring and diagnostics functions (e.g. temperature, fan, watchdog)
- RAID1 configuration (mirrored drives), optionally in hot swap drive bays
- Hard disks with capacities up to 2 TB for large volumes of data
- SSD (solid-state drive) SATA, also as RAID1 configuration, optional
- Redundant AC power supply, optional
- Compact dimensions for installation in control cabinets only 500 mm deep
- Dust protection thanks to overpressure ventilation concept with fan on the front and dust filter
- Lockable front door
- Service-friendly equipment design due to prepared telescopic rail mounting
- Service-friendly device design due, for example, to the replacement of filters/fans from the front without the need for tools, or opening of the enclosure with just one screw.
- Universal implementation as an industrial workstation or server
- Operating system pre-installed and activated for fast startup
- Fast restoration of the delivery status of the HDD thanks to restore DVD or USB flash drive
- High flexibility and expandability of components
- PCI and PCI Express expansion slots
- Independent industrial product design

PC-based Automation

Industrial PC

Rack PC

Overview (continued)

SIMATIC IPC347E – high performance at an optimized price

- Intel Pentium and Intel Core i processors, 4th Generation
- Lockable front flap
- Uninterrupted duty at 40 °C ambient temperature without power loss
- Dust protection thanks to overpressure ventilation concept with fan on the front and dust filter
- PCI and PCI Express expansion slots
- 7 configurations available ex stock at short notice
- Availability approx. 3 years
- Guaranteed spare parts availability for at least 3 years

SIMATIC IPC547G – latest technology and maximum performance at an attractive price

- Intel Core i processors 6th Generation and Xeon
- Maximum processor performance in maximum configuration without loss of power (throttling) at ambient temperatures of up to 40 °C
- Optional RAID5 configuration (striping with parity) in hot swap drive bay
- RAID1 and RAID5 configurations with additional hot spare hard disk, optional
- Hard disks with capacities up to 2 TB for large volumes of data
- Low noise output thanks to controlled fans
- Status and alarm LEDs at the front for signaling critical system states
- Availability approx. 3 years
- Guaranteed spare parts availability for at least 3 years

SIMATIC IPC647E – maximum compactness combined with maximum industrial functionality

- Maximum compactness due to 4 free PCI/PCI Express slots for installing long expansion cards
- High thermal stability up to 50 °C ambient temperature, even at maximum processor performance
- High vibration/shock resistance thanks to special hard disk holders
- Intel Core i processors 8th Generation and Xeon
- ECC memory, optional
- SSD (solid-state drive) M.2 NVMe
- Front LED concept for efficient self-diagnostics, e.g. monitoring of hard disks in RAID1 configurations, fans or the status display for Ethernet
- High component/design continuity
- Motherboard developed and manufactured by Siemens
- Availability for at least 5 years
- Guaranteed spare parts availability for at least 5 years

SIMATIC IPC847E – maximum expandability and industrial functionality

- Maximum expandability due to 11 free PCI/PCI Express slots for installing long expansion cards
- High thermal stability up to 50 °C ambient temperature, even at maximum processor performance
- High vibration/shock resistance thanks to special hard disk holders
- Intel Core i processors 8th Generation and Xeon
- Optional RAID5 configuration (striping with parity) in hot swap drive bay
- RAID1 and RAID5 configurations with additional hot spare hard disk or SSD SATA optional
- ECC memory, optional
- SSD (solid-state drive) M.2 NVMe
- Front LED concept for efficient self-diagnostics, e.g. monitoring of hard disks in RAID1 configurations, fans or the status display for Ethernet
- High component/design continuity
- Motherboard developed and manufactured by Siemens
- Availability for at least 5 years
- Guaranteed spare parts availability for at least 5 years

SIMATIC IPC1047 – maximum performance and expandability

- Maximum computing capacity due to two Intel® Xeon® CPUs
- Maximum graphic capacity
- Product design for industrial environment

Technical specifications

Rack PC	6AG4012-1....-..... SIMATIC IPC347E	6AG4104-4....-..... SIMATIC IPC547G	6AG4112-3....-..... SIMATIC IPC647E	6AG4114-3....-..... SIMATIC IPC847E
Design				
19" rack	4 U	4 U	2 U	4 U
Housing depth	463 mm	447 mm or 357 mm	444 mm	444 mm
Prepared for telescopic rails	•	•	•	•
Horizontal/vertical installation	• / -	• / •	• / -	• / •
19" mounting bracket can be removed from outside	•	•	•	•
Tower kit (optional)	-	•	-	•
General features				
Processor	<ul style="list-style-type: none"> Intel Pentium Dual Core G3420 (2C/2T, 3.2 GHz) Intel Core i5-4570S (4C/4T, 2.9 (3.6) GHz) 	<ul style="list-style-type: none"> Intel Xeon E3-1275 v5 ¹⁾ (4C/8T, 3.6 (4.0) GHz) Intel Core i7-6700 (4C/8T, 3.4 (4.0) GHz) Intel Core i5-6500 (4C/4T, 3.2 (3.6) GHz) Intel Pentium G4400 (2C/2T, 3.3 GHz) 	<ul style="list-style-type: none"> Intel Xeon E-2176G (6C/12T, 3.7 (4.7) GHz) Intel Core i7-8700 (6C/12T, 3.2 (4.6) GHz) Intel Core i5-8500 (6C/6T, 3.0 (4.1) GHz) Intel Core i3-8100 (4C/4T, 3.6 GHz) 	<ul style="list-style-type: none"> Intel Xeon E-2176G (6C/12T, 3.7 (4.7) GHz) Intel Core i7-8700 (6C/12T, 3.2 (4.6) GHz) Intel Core i5-8500 (6C/6T, 3.0 (4.1) GHz) Intel Core i3-8100 (4C/4T, 3.6 GHz)
Main memory	<ul style="list-style-type: none"> 2/4/8 GB, expandable up to 16 GB 	<ul style="list-style-type: none"> 4 GB, expandable up to 64 GB ¹⁾ 	<ul style="list-style-type: none"> 4 GB, expandable up to 64 GB, optional ECC 	<ul style="list-style-type: none"> 4 GB, expandable up to 64 GB, optional ECC
Slots for expansions (all lengths up to 312 mm)	7 slots: <ul style="list-style-type: none"> 1 x PCI Express x16 (16 lanes) 1 x PCI Express x8 (2 lanes) 1 x PCI x1 (1 lane) 4 x PCI 	7 slots: <ul style="list-style-type: none"> 1 x PCI Express x16 (16 lanes) 1 x PCI Express x16 (4 lanes) ¹⁾ 1 x PCI Express x8 (1 lane) 1 x PCI Express x4 (4 lanes) ¹⁾ 1 x PCI Express x4 (1 lane) 2 x PCI or 7 slots: <ul style="list-style-type: none"> 1 x PCI Express x16 (16 lanes) 1 x PCI Express x16 (1 lane) 1 x PCI Express x8 (1 lane) 2 x PCI Express x4 (1 lane) 2 x PCI 	2 slots: <ul style="list-style-type: none"> 1x PCI-Express (x16) (16 lanes) 1x PCI-Express (x16) (4 lanes) or 4 slots: <ul style="list-style-type: none"> 2x PCI 2x PCI-Express (x16) (8 lanes) or 4 slots: <ul style="list-style-type: none"> 2x PCI-Express (x16) (8 lanes) 1x PCI-Express (x16) (4 lanes) 1x PCI-Express (x16) (1 lane) 	9 slots: <ul style="list-style-type: none"> 7x PCI 2x PCI-Express (x16) (8 lanes) or 11 slots: <ul style="list-style-type: none"> 3x PCI 1x PCI-Express (x16) (8 lanes) 5x PCI-Express (x16) (4 lanes) 2x PCI-Express (x4) (4 lanes) or 11 slots: <ul style="list-style-type: none"> 3x PCI 1x PCI-Express (x16) (16 lanes) 3x PCI-Express (x16) (4 lanes) 2x PCI-Express (x16) (1 lane) 2x PCI-Express (x4) (4 lanes)
Onboard graphics	<ul style="list-style-type: none"> 1 x DVI-D 1 x VGA 	<ul style="list-style-type: none"> 1 x or 2 x ¹⁾ DisplayPort (VGA/DVI-D via DP adapter cable, optional) 1 x DVI-D 	<ul style="list-style-type: none"> 2 x DisplayPort (VGA/DVI-D via DP adapter cable, optional) 1 x DVI-D 	<ul style="list-style-type: none"> 2 x DisplayPort (VGA/DVI-D via DP adapter cable, optional) 1 x DVI-D
Graphics card (optional)	-	Graphics card NVIDIA NVS 315 PCIe x16, dual head (2x DVI-D/VGA via adapter)	Graphics card NVIDIA Quadro P400 PCIe x16, triple head (3x mini DisplayPort, DisplayPort/DVI-D/VGA via adapter)	Graphics card NVIDIA Quadro P400 PCIe x16, triple head (3x mini DisplayPort, DisplayPort/DVI-D/VGA via adapter)
Operating system				
None	•	•	•	•
Preinstalled and activated, supplied on restore medium	<ul style="list-style-type: none"> Windows 7 Ultimate, multi-language (64-bit) 	<ul style="list-style-type: none"> Windows 7 Ultimate, multi-language (32-bit/64-bit) Windows 10 Enterprise 2016, LTSB, multi-language (64-bit) Windows 10 Enterprise 2015, LTSB, multi-language (64-bit) Windows Server 2008 R2 incl. 5 clients, multi-language (64-bit) Windows Server 2012 R2 incl. 5 clients, multi-language (64-bit) Windows Server 2016 incl. 5 clients, multi-language (64-bit) 	<ul style="list-style-type: none"> Windows 10 Enterprise 2016, LTSB, multi-language, (64-bit) Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit) 	<ul style="list-style-type: none"> Windows 10 Enterprise 2016, LTSB, multi-language, (64-bit) Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit)
Project-specific on request	-	<ul style="list-style-type: none"> Linux ³⁾ Other 	-	-

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Technical specifications (continued)

Rack PC	6AG4012-1....-.... SIMATIC IPC347E	6AG4104-4....-.... SIMATIC IPC547G	6AG4112-3....-.... SIMATIC IPC647E	6AG4114-3....-.... SIMATIC IPC847E
Interfaces				
Ethernet	2 x Realtek 10/100/1 000 Mbps (RJ45)	2 x Intel 10/100/1 000 Mbps (RJ45, teaming-capable)	3 x Intel 10/100/1 000 Mbps (RJ45, teaming-capable)	3 x Intel 10/100/1 000 Mbps (RJ45, teaming-capable)
USB 3.0 / 3.1 Gen.1 (high current)	2 x type A on the rear	6 x ¹⁾ or 4 x type A, 2 of which at front	2 x type A on the front	2 x type A on the front
USB 3.1 Gen. 2 (high current)			4x type A, 2x type C on the rear; 1x type A internal, e.g. for software dongle with optional interlocking;	4x type A, 2x type C on the rear; 1x type A internal, e.g. for software dongle with optional interlocking;
USB 2.0 (high current)	5 x type A, of which 2 x on the front 1 x type A internal, 2 x type A on the rear	4 x type A on the rear, 1 x internal ¹⁾ e.g. for software dongle with optional lock	-	-
VGA	•	• optionally via DP adapter cable	• optionally via DP adapter cable	• optionally via DP adapter cable
DVI	•	•	•	•
DisplayPort	-	•	•	•
COM port (serial)	-	COM1, COM2 (optional)	COM1, COM2 (optional)	COM1, COM2 (optional)
LPT port (parallel)	-	LPT1 (optional)	-	-
PS/2	•	•	-	-
Audio	•	•	•	•
Drives				
SATA hard disks				
• Internal installation	•	•	•	•
• Installation at the front in the removable drive bay	-	•	•	•
• Internal installation in drive cage (shock and vibration-damped)	-	•	•	•
RAID1/5 configuration with onboard RAID with SATA hard disks	-	• ¹⁾ / • ¹⁾	• / -	• / •
RAID configuration with additional hot spare hard disk	-	• ¹⁾	-	•
SSD (solid-state drive) SATA	•	•	•	•
RAID1 configuration with solid-state drive, SATA	-	• ¹⁾	•	•
SSD (solid-state drive), M.2 NVMe	-	-	•	•
Optical drives				
DVD±R/RW	-	• (Slim)	-	-
Power supply				
Standard AC	•	• (with fan monitoring)	• (with fan monitoring)	• (with fan monitoring)
Redundant AC (optional)	-	•	• (with module monitoring)	• (with module monitoring)
Ambient conditions ⁴⁾				
Vibration/ shock load during operation	- / -	0.2 g/1 g	0.5 g/5 g	0.5 g/5 g
Ambient temperature during operation	With maximum configuration: 5 ... 40 °C	With maximum configuration: 0 ... 40 °C	With maximum configuration: 0 ... +50 °C	With maximum configuration: 0 ... +50 °C

• Available

- Not available

¹⁾ Only with mainboard with C236 chipset

²⁾ Limitation regarding ambient temperature.

³⁾ Suitable for specific Linux versions in accordance with the specifications in the Siemens manufacturer's declaration "Suitable for Linux" (Linux is a trademark owned by Linus Torvald); see also: <http://support.automation.siemens.com/WWW/view/en/10805661/134200>

⁴⁾ Restrictions when using DVD±R/RW, SAS HDDs, SATA Enterprise HDDs and hard disks in removable drive bay

Additional information is available on the Internet at:

<http://www.siemens.com/simatic-pc>

Overview



SIMATIC IPC347E

The SIMATIC IPC347E is an industrial PC in 19" rack design (4U).

It offers:

- Optimized price
- High performance
- Intel Core i technology of the 4th generation

Technical specifications

Article number	6AG4012-1AA10-0XX0	6AG4012-1AA21-0XX0	6AG4012-1AA21-0BX0	6AG4012-1CA21-0XX0	6AG4012-1CA21-0BX0	6AG4012-1CB31-0BX0	6AG4012-1CE31-0BX0
	SIMATIC IPC347E (Rack PC, 19", 4U)	SIMATIC IPC347E (Rack PC, 19", 4U)	SIMATIC IPC347E (Rack PC, 19", 4U)	SIMATIC IPC347E (Rack PC, 19", 4U)	SIMATIC IPC347E (Rack PC, 19", 4U)	SIMATIC IPC347E (Rack PC, 19", 4U)	SIMATIC IPC347E (Rack PC, 19", 4U)
Installation type/mounting							
Mounting	For horizontal rack mounting	For horizontal rack mounting	For horizontal rack mounting	For horizontal rack mounting	For horizontal rack mounting	For horizontal rack mounting	For horizontal rack mounting
Design	Rack PC, 19", 4U	Rack PC, 19", 4U	Rack PC, 19", 4U	Rack PC, 19", 4U	Rack PC, 19", 4U	Rack PC, 19", 4U	Rack PC, 19", 4U
Rack mounting	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Supply voltage							
Type of supply voltage	100 - 240 V AC	100 - 240 V AC	100 - 240 V AC	100 - 240 V AC	100 - 240 V AC	100 - 240 V AC	100 - 240 V AC
Line frequency							
• Rated value 50 Hz	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Rated value 60 Hz	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Processor							
Processor type	Pentium Dual Core G3420 (2C/2T, 3.2 GHz, 3 MB Cache)			Core i5-4570S (4C/4T, 2.9 (3.6) GHz, 6 MB Cache)			
Drives							
Hard disk	500 GB HDD	500 GB HDD	500 GB HDD	500 GB HDD	500 GB HDD	1 TB HDD	
SSD							Yes; 256 GB
Memory							
Type of memory	DDR3-SDRAM	DDR3-SDRAM	DDR3-SDRAM	DDR3-SDRAM	DDR3-SDRAM	DDR3-SDRAM	DDR3-SDRAM
Main memory	2 GB (pre-installed), support up to 16 GB	4 GB (pre-installed), support up to 16 GB	4 GB (pre-installed), support up to 16 GB	4 GB (pre-installed), support up to 16 GB	4 GB (pre-installed), support up to 16 GB	8 GB (Pre-installed), support up to 16 GB	8 GB (Pre-installed), support up to 16 GB
Hardware configuration							
Slots							
• free slots	4x PCI, 1x PCIe (x1), 1x PCIe (x8) (2 Lanes), 1x PCIe (x16) (16 Lanes)	4x PCI, 1x PCIe (x1), 1x PCIe (x8) (2 Lanes), 1x PCIe (x16) (16 Lanes)	4x PCI, 1x PCIe (x1), 1x PCIe (x8) (2 Lanes), 1x PCIe (x16) (16 Lanes)	4x PCI, 1x PCIe (x1), 1x PCIe (x8) (2 Lanes), 1x PCIe (x16) (16 Lanes)	4x PCI, 1x PCIe (x1), 1x PCIe (x8) (2 Lanes), 1x PCIe (x16) (16 Lanes)	4x PCI, 1x PCIe (x1), 1x PCIe (x8) (2 Lanes), 1x PCIe (x16) (16 Lanes)	4x PCI, 1x PCIe (x1), 1x PCIe (x8) (2 Lanes), 1x PCIe (x16) (16 Lanes)

PC-based Automation

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Rack PC

SIMATIC IPC347E

Technical specifications (continued)

Article number	6AG4012-1AA10-0XX0 SIMATIC IPC347E (Rack PC, 19", 4U)	6AG4012-1AA21-0XX0 SIMATIC IPC347E (Rack PC, 19", 4U)	6AG4012-1AA21-0BX0 SIMATIC IPC347E (Rack PC, 19", 4U)	6AG4012-1CA21-0XX0 SIMATIC IPC347E (Rack PC, 19", 4U)	6AG4012-1CA21-0BX0 SIMATIC IPC347E (Rack PC, 19", 4U)	6AG4012-1CB31-0BX0 SIMATIC IPC347E (Rack PC, 19", 4U)	6AG4012-1CE31-0BX0 SIMATIC IPC347E (Rack PC, 19", 4U)
Interfaces							
Interfaces/bus type	2x Gbit Ethernet (RJ45), 1x DVI-D, 1x VGA, 4x USB 2.0 on rear, 2x USB 2.0 on front, 2x COM, 2x PS/2, Audio (Line in, Line out, Micro)			2x Gbit Ethernet (RJ45)	2x Gbit Ethernet (RJ45), 1x DVI-D, 1x VGA, 4x USB 2.0 on rear, 2x USB 2.0 on front, 2x COM, 2x PS/2, Audio (Line in, Line out, Micro)		
Number of industrial Ethernet interfaces	2	2	2	2	2		
USB port	2x USB 3.0 rear, 2x USB 2.0 rear, 2x USB 2.0 front, 1x USB 2.0 internal	2x USB 3.0 rear, 2x USB 2.0 rear, 2x USB 2.0 front, 1x USB 2.0 internal	2x USB 3.0 rear, 2x USB 2.0 rear, 2x USB 2.0 front, 1x USB 2.0 internal	2x USB 3.0 rear, 2x USB 2.0 rear, 2x USB 2.0 front, 1x USB 2.0 internal	2x USB 3.0 rear, 2x USB 2.0 rear, 2x USB 2.0 front, 1x USB 2.0 internal	2x USB 3.0 rear, 2x USB 2.0 rear, 2x USB 2.0 front, 1x USB 2.0 internal	2x USB 3.0 rear, 2x USB 2.0 rear, 2x USB 2.0 front, 1x USB 2.0 internal
Connection for keyboard/mouse	2x PS/2	2x PS/2	2x PS/2	2x PS/2		2x PS/2	2x PS/2
serial interface	2x COM ports (RS 232, RS 422, RS 485)	2x COM ports (RS 232, RS 422, RS 485)	2x COM ports (RS 232, RS 422, RS 485)	2x COM ports (RS 232, RS 422, RS 485)	2x COM ports (RS 232, RS 422, RS 485)	2x COM ports (RS 232, RS 422, RS 485)	2x COM ports (RS 232, RS 422, RS 485)
Multimedia							
• Audio In/Out	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Microphone In	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Video interfaces							
• Graphics interface	1x VGA; 1x DVI-D	1x VGA; 1x DVI-D	1x VGA; 1x DVI-D		1x VGA; 1x DVI-D	1x VGA; 1x DVI-D	1x VGA; 1x DVI-D
Industrial Ethernet							
• Industrial Ethernet interface	2x Ethernet (RJ45)	2x Ethernet (RJ45)	2x Ethernet (RJ45)	2x Ethernet (RJ45)	2x Ethernet (RJ45)	2x Ethernet (RJ45)	2x Ethernet (RJ45)
- 100 Mbps	Yes	Yes	Yes	Yes	Yes	Yes	Yes
- 1000 Mbps	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Integrated Functions							
Monitoring functions							
• Status LEDs	POWER, HDD	POWER, HDD	POWER, HDD	POWER, HDD	POWER, HDD	POWER, HDD	POWER, HDD
EMC							
Interference immunity against discharge of static electricity							
• Interference immunity against discharge of static electricity	±4 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							
• Interference immunity against high frequency radiation	10 V/m for 80 - 1 000 MHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3; 1 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 150 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 > 30 m	±2 kV acc. to IEC 61000-4-4, burst; ±2 kV acc. to IEC 61000-4-5, surge						
• Interference immunity on signal cables < 30 m	±1 kV acc. to IEC 61000-4-4, Burst						

Technical specifications (continued)

Article number	6AG4012-1AA10-0XX0 SIMATIC IPC347E (Rack PC, 19", 4U)	6AG4012-1AA21-0XX0 SIMATIC IPC347E (Rack PC, 19", 4U)	6AG4012-1AA21-0BX0 SIMATIC IPC347E (Rack PC, 19", 4U)	6AG4012-1CA21-0XX0 SIMATIC IPC347E (Rack PC, 19", 4U)	6AG4012-1CA21-0BX0 SIMATIC IPC347E (Rack PC, 19", 4U)	6AG4012-1CB31-0BX0 SIMATIC IPC347E (Rack PC, 19", 4U)	6AG4012-1CE31-0BX0 SIMATIC IPC347E (Rack PC, 19", 4U)
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	30 A/m; to IEC 61000-4-8	30 A/m; to IEC 61000-4-8	30 A/m; to IEC 61000-4-8	30 A/m; to IEC 61000-4-8	30 A/m; to IEC 61000-4-8	30 A/m; to IEC 61000-4-8	30 A/m; to IEC 61000-4-8
Emission of conducted and non-conducted interference							
• Interference emission via line/AC current cables	IEC 61000-6-4, CISPR 22, FCC Class A						
Compliance with line harmonic distortion limits							
• Compliance with line harmonic distortion acc. to IEC 61000-3-2, IEC 61000-3-3	Yes; EN 61000-3-2 Class D; EN 61000-3-3						
Degree and class of protection							
IP (at the front)	IP20	IP20	IP20	IP20	IP20	IP20	IP20
IP (rear)	IP20	IP20	IP20	IP20	IP20	IP20	IP20
Standards, approvals, certificates							
CE mark	Yes	Yes	Yes	Yes	Yes	Yes	Yes
UL approval	Yes	Yes	Yes	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes	Yes	Yes	Yes
KC approval	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FCC	Yes	Yes	Yes	Yes	Yes	Yes	Yes
EMC	CE, IEC 61000-6-4:2011, IEC 61000-6-2:2005	CE, EN 61000-6-4:2007 +A1:2011, EN 61000-6-2:2005					
Ambient conditions							
Ambient temperature during operation							
• Ambient temperature during operation	+5 °C to +40 °C	+5 °C to +40 °C	+5 °C to +40 °C	+5 °C to +40 °C	+5 °C to +40 °C	+5 °C to +40 °C	+5 °C to +40 °C
Relative humidity							
• 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)						
Operating systems							
pre-installed operating system without operating system	Yes	Yes	Yes	Yes	Yes	Yes	Yes
pre-installed operating system							
• Windows 7			Yes; Ultimate 64 bit		Yes; Ultimate 64 bit	Yes; Ultimate 64 bit, SP1	Yes; Ultimate 64 bit, SP1
Mechanics/material							
Enclosure material (front)							
• Aluminum	Yes	Yes	Yes	Yes	Yes		
Dimensions							
Width	430 mm	430 mm	430 mm	430 mm	430 mm	430 mm	430 mm
Height	177 mm	177 mm	177 mm	177 mm	177 mm	177 mm	177 mm
Depth	463 mm	463 mm	463 mm	463 mm	463 mm	463 mm	463 mm

PC-based Automation

Industrial PC

Rack PC

SIMATIC IPC347E

Ordering data

Configurations

SIMATIC IPC347E

• Configuration 1

Intel Pentium Dual Core G3420 (2C/2T, 3.2 GHz, 3 MB cache); 500 GB HDD SATA, internal; 2 GB DDR3 SDRAM (1 x 2 GB); without operating system; 100/240 V AC industrial power supply. Interfaces: 2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x USB internal, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, audio

• Configuration 2

Intel Pentium Dual Core G3420 (2C/2T, 3.2 GHz, 3 MB cache); 500 GB HDD SATA, internal; 4 GB DDR3 SDRAM (1 x 4 GB); DVD±RW; without operating system; 100/240 V AC industrial power supply. Interfaces: 2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x USB internal, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, audio

• Configuration 3

Intel Core i5-4570S (4C/4T, to 3.6 GHz, 6 MB cache); 500 GB HDD SATA, internal; 4 GB DDR3 SDRAM (1 x 4 GB); DVD±RW; without operating system; 100/240 V AC industrial power supply. Interfaces: 2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x USB internal, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, audio

• Configuration 4

Intel Core i5-4570S (4C/4T, to 3.6 GHz, 6 MB cache); 500 GB HDD SATA, internal; 4 GB DDR3 SDRAM (1 x 4 GB); DVD±RW; Windows 7 Ultimate, 64-bit, SP1; 100/240 V AC industrial power supply. Interfaces: 2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x USB internal, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, audio

Article No.

6AG4012-1AA10-0XX0

6AG4012-1AA21-0XX0

6AG4012-1CA21-0XX0

6AG4012-1CA21-0BX0

Article No.

6AG4012-1AA21-0BX0

6AG4012-1CB31-0BX0

6AG4012-1CE31-0BX0

• Configuration 5

Intel Pentium Dual Core G3420 (2C/2T, 3.2 GHz, 3 MB cache); 500 GB HDD SATA, internal; 4 GB DDR3 SDRAM (1 x 4 GB); DVD±RW; Windows 7 Ultimate, 64-bit, SP1; 100/240 V AC industrial power supply. Interfaces: 2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x USB internal, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, audio

• Configuration 6

Intel Core i5-4570S (4C/4T, to 3.6 GHz, 6 MB cache); 1 TB HDD SATA, internal; 8 GB DDR3 SDRAM (1 x 8 GB); DVD±RW; Windows 7 Ultimate, 64-bit, SP1; 100/240 V AC industrial power supply. Interfaces: 2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x USB internal, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, audio

• Configuration 7

Intel Core i5-4570S (4C/4T, up to 3.6 GHz, 6 MB cache); 256 GB SSD SATA, internal; 8 GB DDR3 SDRAM (1 x 8 GB); DVD±RW; Windows 7 Ultimate, 64-bit, SP1; 100/240 V AC industrial power supply. Interfaces: 2 x Gbit Ethernet (RJ45), 4 x USB at the rear, 2 x USB at the front, 1 x USB internal, 1 x DVI-D, 1 x VGA, 2 x serial, 2 x PS/2, audio

Note:

Software packages with SIMATIC WinCC flexible, SIMATIC WinCC RT Advanced or Professional and SIMATIC WinCC can be ordered together with the SIMATIC IPC at favorable prices.

More information under "Embedded Bundles / Packages for industrial PCs".

Additional information is available on the Internet at:

<http://www.siemens.com/simatic-pc>

Overview



SIMATIC IPC547G

The SIMATIC IPC547G is a rugged industrial PC in 19" rack design (4U).

It offers:

- Maximum performance
- Attractive price
- Intel Core i/Xeon technology, 6th generation

Technical specifications

Article number	6AG4104-4....-.... SIMATIC IPC547G
Installation type/mounting	
Mounting	For horizontal and vertical installation; prepared for telescopic rails; 19" mounting bracket can be removed externally; tower kit (optional)
Design	Rack PC, 19", 4U
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 E3-1275 v5 (4C/8T, 3.6 (4.0) GHz, 8 MB Cache); Core i7-6700 (4C/8T, 3.4 (4.0) GHz, 8 MB Cache); Core i5-6500 (4C/4T, 3.2 (3.6) GHz, 6 MB Cache); Pentium G4400 (2C/2T, 3.3 GHz, 3 MB Cache)
Chipset	Intel C236 / Intel H110
Graphic	
Graphics controller	Onboard Intel HD graphics P530 / 530 / 510 integrated in processor; graphics card PCIe (x16) (dual head: 2x VGA or 2x DVI-D) (optional)
Drives	
Optical drives	DVD±R/RW (SlimLine)
Hard disk	Internal installation: 1 TB HDD, 2x 1 TB HDD, RAID1 (2x 1 TB HDD), RAID1 (2x 1 TB HDD (Enterprise)); for front mounting in low-profile removable drive bay trays (hot-swap in RAID configuration): 1 TB HDD, 2x 1 TB HDD, RAID1 (2x 1 TB HDD), RAID1 (2x 1 TB HDD (Enterprise)), RAID1 (2x 2 TB HDD (Enterprise)), RAID1 (2x 2 TB HDD (Enterprise)) + 1x 2 TB HDD (Enterprise) as hot spare, RAID1 (2x 2 TB HDD (Enterprise)) + 1x 480 GB SSD, RAID5 (3x 2 TB HDD (Enterprise)), RAID5 (3x 2 TB HDD (Enterprise)) + 1x 2 TB HDD (Enterprise) as hot spare
SSD	Yes; 1x 240 GB, 1x 480 GB SSD, 2x 480 GB SSD, RAID1 (2x 480 GB SSD)
Slot for drives	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)

PC-based Automation

Industrial PC

Rack PC

SIMATIC IPC547G

Technical specifications (continued)

Article number	6AG4104-4....-.... SIMATIC IPC547G
Memory	
Main memory	4 GB to 64 GB DDR4 2133 SDRAM
Hardware configuration	
Slots	
• free slots	7 spare slots for expansions (all long); mainboard with H110 chipset: 1x PCIe (x16) Gen 3, 1x PCIe (x16) (1 lane) Gen 2, 1x PCIe (x8) (1 lane) Gen 2, 1x PCIe (x4) (1 lane) Gen 2, 1x PCIe (x4) (1 lane) Gen 2, 2x PCI; mainboard with C236 chipset: 1x PCIe (x16) Gen 3, 1x PCIe (x16) (4 lanes) Gen 3, 1x PCIe (x8) (1 lane) Gen 3, 1x PCIe (x4) (4 lane) Gen 3, 1x PCIe (x4) (1 lane) Gen 3, 2x PCI
Interfaces	
Interfaces/bus type	Interfaces mainboard (H110 chipset): 2x Intel Gigabit Ethernet (RJ45, teaming-capable), 4x USB 3.0: 2x on rear, 2x on front, 4x USB 2.0: 4x on rear, 1x DisplayPort V1.2, 1x DVI-D, 2x PS/2, audio: Line in, line out, micro; interfaces mainboard (C236 chip set): 2x Intel Gigabit Ethernet (RJ45, teaming-capable), 6x USB 3.0: 4x on rear, 2x on front, 5x USB 2.0: 4x on rear, 1x internal e.g. for software dongle with optional interlock, 2x DisplayPort V1.2, 1x DVI-D, 1x COM1, 2x PS/2, audio: line in, line out, micro
USB port	Mainboard (H110 chipset): 4x USB 3.0: 2x on rear, 2x on front, 4x USB 2.0: 4x on rear; mainboard (C236 chipset): 6x USB 3.0: 4x on rear, 2x on front, 5x USB 2.0: 4x on rear, 1x internal e.g. for software dongle with optional interlock
Connection for keyboard/mouse serial interface	2x PS/2 COM1: 1x RS 232, COM2 (optional): 1x RS 232
parallel interface	optional LPT1
Multimedia	
• Audio In/Out	Yes
• Microphone In	Yes
Video interfaces	
• Graphics interface	2x DisplayPort and 1x DVI-D onboard; 1x VGA via DP-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

Article number	6AG4104-4....-.... SIMATIC IPC547G
Integrated Functions	
Monitoring functions	
• Temperature monitoring	Yes
• Watchdog	Yes
• Status LEDs	POWER, HDD, TEMP, FAN, HDD0 ALARM, HDD1 ALARM, HDD2 ALARM, HDD3 ALARM
• Fan	Yes
• Monitoring function via network	Optional
EMC	
Interference immunity against discharge of static electricity	
• Interference immunity against discharge of static electricity	±4 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	
• Interference immunity against high frequency radiation	10 V/m for 80 - 1 000 MHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3; 1 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 150 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 > 30 m	±2 kV acc. to IEC 61000-4-4, burst; ±2 kV acc. to IEC 61000-4-5, surge
• Interference immunity on signal cables < 30 m	±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	30 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)	IP30
IP (rear)	IP20

Technical specifications (continued)

Article number	6AG4104-4....-.... SIMATIC IPC547G
Standards, approvals, certificates	
Approval	CE, cULus 60950, KCC
CE mark	Yes; For use in industrial areas as well as domestic, business and commercial environments (emitted interference: EN 61000-6-3:2007 +A1:2011, noise immunity: EN 61000-6-2:2005)
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	CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005
Dust protection	With front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered
Ambient conditions	
Ambient temperature during operation	
• Ambient temperature during operation	0 °C to +40 °C in full configuration (no burner mode), at +5 °C to +35 °C without limitation
Relative humidity	
• Relative humidity	Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation)
Vibrations	
• Vibration resistance during operation acc. to IEC 60068-2-6	Tested according to IEC 60068-2-6, 10 cycles; 20 to 58 Hz: 0.015 mm; 58 to 200 Hz: 2 m/s ² (0.2 g)
Shock testing	
• Shock load during operation	Tested according to IEC 60068-2-27; half-sine: 9.8 m/s ² (1 g), 20 ms, 100 shocks per axis

Article number	6AG4104-4....-.... SIMATIC IPC547G
Operating systems	
Operating system	Windows 7 Ultimate, multi-language (32-bit/64-bit), Windows 10 Enterprise 2015 LTSC, multi-language (64-bit), Windows 10 Enterprise 2016 LTSC, 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	177 mm; 4U
Depth	446 mm; Device with short enclosure: 356 mm

PC-based Automation

Industrial PC

Rack PC

SIMATIC IPC547G

Ordering data

Article No.

SIMATIC IPC547G

Rack PC, 19", 4 U
 Interfaces: 2 x USB 3.0 at the front,
 2 x Gbit Ethernet, 2 x PS/2, audio;
 slots: 5 x PCI Express, 2 x PCI;
 temperature and fan monitoring;
 watchdog; card retainer

Processors and mainboards

- Pentium G4400
 (2C/2T, 3.3 GHz, 3 MB cache);
 mainboard (chipset H110,
 1 x DVI-D, 1 x DisplayPort V1.2,
 2 x USB 3.0 & 4 x USB 2.0
 at the rear)
- Core i5-6500
 (4C/4T, 3.2 (3.6) GHz,
 6 MB cache); mainboard
 (chipset H110, 1 x DVI-D,
 1 x DisplayPort V1.2,
 2 x USB 3.0 & 4 x USB 2.0
 at the rear)
- Core i7-6700
 (4C/8T, 3.4 (4.0) GHz,
 8 MB cache); mainboard
 (chipset H110, 1 x DVI-D,
 1 x DisplayPort V1.2,
 2 x USB 3.0 & 4 x USB 2.0
 at the rear)
- Pentium G4400
 (2C/2T, 3.3 GHz, 3 MB cache);
 mainboard (chipset C236,
 1 x DVI-D, 2 x DisplayPort V1.2,
 4 x USB 3.0 & 4 x USB 2.0 at the
 rear, 1 x USB 2.0 internal,
 1 x COM1; RAID onboard)
- Core i5-6500
 (4C/4T, 3.2 (3.6) GHz,
 6 MB cache, iAMT);
 mainboard (chipset C236,
 1 x DVI-D, 2 x DisplayPort V1.2,
 4 x USB 3.0 & 4 x USB 2.0 at the
 rear, 1 x USB 2.0 internal,
 1 x COM1; RAID onboard)
- Core i7-6700
 (4C/8T, 3.4 (4.0) GHz,
 8 MB cache, iAMT);
 mainboard (chipset C236,
 1 x DVI-D, 2 x DisplayPort V1.2,
 4 x USB 3.0 & 4 x USB 2.0 at the
 rear, 1 x USB 2.0 internal,
 1 x COM1; RAID onboard)
- Xeon E3-1275 v5
 (4C/8T, 3.6 (4.0) GHz,
 8 MB cache, iAMT);
 mainboard (chipset C236,
 1 x DVI-D, 2 x DisplayPort V1.2,
 4 x USB 3.0 & 4 x USB 2.0 at the
 rear, 1 x USB 2.0 internal,
 1 x COM1; RAID onboard)

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SIMATIC IPC547G

Drives (SATA)

- 1 x 1 TB HDD, internal
 (0.2 g vibration, 1 g shock)
- 2 x 1 TB HDD, internal
 (0.2 g vibration, 1 g shock)
- 1 x 240 GB SSD, internal
- 1 x 480 GB SSD, internal
- 2 x 480 GB SSD, internal
- RAID1, 1 TB (2 x 1 TB HDD),
 internal (0.2 g vibration,
 1 g shock)¹⁾
- RAID1, 1 TB (2 x 1 TB HDD
 [Enterprise]), internal
 (0.2 g vibration, 1 g shock)¹⁾
- 1 x 1 TB HDD in removable drive
 bay, on the front²⁾
- 2 x 1 TB HDD in removable drive
 bay, on the front²⁾
- 1 x 480 GB SSD in removable
 drive bay, on the front²⁾
- 2 x 480 GB SSD in removable
 drive bay, on the front²⁾
- RAID1, 480 GB (2 x 480 GB SSD)
 in removable drive bay,
 hot-swappable, front-mounted¹⁾²⁾
- RAID1, 1 TB (2 x 1 TB HDD)
 in removable drive bay,
 hot-swappable, front-mounted¹⁾²⁾
- RAID1, 1 TB (2 x 1 TB HDD
 [Enterprise]) in removable drive
 bay, hot-swappable,
 front-mounted¹⁾²⁾
- RAID1, 2 TB (2 x 2 TB HDD
 [Enterprise]) in removable drive
 bay, hot-swappable,
 front-mounted¹⁾²⁾
- RAID1, 2 TB (2 x 2 TB HDD
 [Enterprise]) in removable
 drive bay, hot-swappable +
 1 x 2 TB HDD [Enterprise] as
 hot spare in removable drive bay,
 front-mounted¹⁾²⁾
- RAID1, 2 TB (2 x 2 TB HDD
 [Enterprise]) in removable
 drive bay, hot-swappable +
 1x 480 GB SSD in removable drive
 bay, front-mounted (operating
 system installed on SSD if
 configured)¹⁾²⁾
- RAID5, 4 TB (3 x 2 TB HDD
 [Enterprise]) in removable
 drive bay, hot-swappable,
 front-mounted¹⁾²⁾
- RAID5, 4 TB (3 x 2 TB HDD
 [Enterprise]) in removable
 drive bay, hot-swappable
 + 1 x 2 TB HDD [Enterprise]
 as hot spare in removable
 drive bay, front-mounted;
 (up to +35°C)¹⁾²⁾

Article No.

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Ordering data	Article No.	Article No.	
SIMATIC IPC547G	6AG4104 - 4	SIMATIC IPC547G	
Memory configuration		6AG4104 - 4	
<ul style="list-style-type: none"> • 4 GB DDR3 SDRAM (1 x 4 GB), single channel • 8 GB DDR3 SDRAM (2 x 4 GB), dual channel • 16 GB DDR3 SDRAM (2 x 8 GB), dual channel • 32 GB DDR3 SDRAM (2 x 16 GB), dual channel • 64 GB DDR3 SDRAM (4 x 16 GB), dual channel ¹⁾ 	0 1 2 3 4	Operating systems (pre-installed and activated) <ul style="list-style-type: none"> • Windows 7 Ultimate, MUI (en, de, fr, it, es), 32-bit, SP1 • Windows 7 Ultimate, MUI (en, de, fr, it, es), 64-bit, SP1 • Windows 10 Enterprise 2015 LTSB, multi-language (en, de, fr, it, es), 64-bit • Windows 10 Enterprise 2016 LTSB, multi-language (en, de, fr, it, es), 64-bit (for Pentium / Core i5) • Windows 10 Enterprise 2016 LTSB, multi-language (en, de, fr, it, es), 64-bit (for Core i7 / Xeon) • Windows Server 2008 R2 Standard Edition, 64-bit SP1 incl. 5 clients, multi-language (en, de, fr, it, es) • Windows Server 2012 R2 Standard Edition incl. 5 clients, 64-bit, MUI (en, de, fr, it, es) • Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit) • Without operating system 	A B C D E F G H X
Type of enclosure / power supplies and removable media		Expansions (software)	
<ul style="list-style-type: none"> • Enclosure (short), blue-chromat., 100/240 V AC industrial power supply, without removable media • Enclosure, blue-chromated, 100/240 V AC industrial power supply, without removable media • Enclosure, blue-chromated, 100/240 V AC industrial power supply, DVD±RW (slim) • Enclosure, blue-chromated, 2 x 100/240 V AC redundant industrial power supply, without removable media • Enclosure, blue-chromated, 2 x 100/240 V AC redundant industrial power supply, DVD±RW (slim) • Painted enclosure, 100/240 V AC industrial power supply, without removable media • Painted enclosure, 100/240 V AC industrial power supply, DVD±RW (slim) • Painted enclosure, 2 x 100/240 V AC redundant industrial power supply, without removable media • Painted enclosure, 2 x 100/240 V AC redundant industrial power supply, DVD±RW (slim) 	0 1 2 3 4 5 6 7 8	<ul style="list-style-type: none"> • SIMATIC IPC DiagMonitor software enclosed • SIMATIC IPC Image & Partition Creator software included • SIMATIC IPC DiagMonitor + Image & Partition Creator software enclosed • Without expansions (software) • Without expansions (software) / TPM 2.0 ³⁾ (not for China or Russia) 	A B C X Y
Expansions (hardware)		Country-specific versions	
<ul style="list-style-type: none"> • Without expansions (hardware), onboard graphics • Without expansions (hardware), onboard graphics; adapter cable DP to VGA for onboard graphics • Without expansions (hardware), PCIe x16 graphics card (dual head: 2 x VGA or 2 x DVI-D), 1 GB • Serial (COM2) + parallel (LPT); onboard graphics • Serial (COM2) + parallel (LPT); onboard graphics; adapter cable DP to VGA for onboard graphics • Serial (COM2) + parallel (LPT) + PCIe x16 graphics card (dual head: 2 x VGA or 2 x DVI-D), 1 GB 	0 1 2 3 4 5	<ul style="list-style-type: none"> • Without power supply cord • Power cord for Europe • Power cord for the USA • Power cord for China 	0 1 2 3

¹⁾ Only with mainboard with C236 chipset

²⁾ Not for use with short enclosure

³⁾ TPM = Trusted Platform Module

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

PC-based Automation

Industrial PC

Rack PC

SIMATIC IPC547G**Ordering data****Article No.***Preferred types (available at short notice from stock)***SIMATIC IPC547G (Rack PC, 19", 4 U)****Configuration 1**

- Pentium G4400 (2C/2T, 3.3 GHz, 3 MB cache)
- Mainboard with chipset H110 1x 1 TB HDD, internal
- 4 GB DDR4 SDRAM (1x 4 GB)
- Painted enclosure
- 100/240 V AC industrial power supply
- Serial (COM2) + parallel (LPT)
- Without power supply cord

6AG4104-4AA05-3XX0**Configuration 2**

- Core i5-6500 (4C/4T, 3.2 (3.6) GHz, 6 MB Cache, iAMT)
- Mainboard with C236 chipset
- RAID1, 1 TB (2x 1 TB HDD) in removable tray, hot-swappable, front-mounted
- 8 GB DDR4 SDRAM (2 x 4 GB), dual channel
- Painted enclosure
- 100/240 V AC industrial power supply
- DVD +/-RW (slim)
- Serial (COM2) + parallel (LPT)
- Adapter cable DP to VGA for onboard graphics
- Windows 7 Ultimate, MUI (en, de, fr, it, es), 64-bit, SP1
- Without power supply cord

6AG4104-4GN16-4BX0**Configuration 3**

- Core i7-6700 (4C/8T, 3.4 (4.0) GHz, 8 MB cache, iAMT)
- Mainboard with C236 chipset
- RAID1, 1 TB (2x 1 TB HDD Enterprise), in removable tray, hot-swappable, front-mounted
- 8 GB DDR4 SDRAM (2x 4 GB), dual channel
- Painted enclosure
- 2x 100/240V AC redundant industrial power supply
- DVD +/-RW (slim)
- Serial (COM2) + parallel (LPT)
- PCIe x16 graphics card (dual head: 2x VGA/2x DVI-D), 1 GB
- Windows 7 Ultimate, MUI (en, de, fr, it, es), 64-bit, SP1
- Without power supply cord

6AG4104-4HP18-5BX0**Article No.****Accessories****Memory expansions**

- 4 GB DDR4-2133 SDRAM
- 8 GB DDR4-2133 SDRAM
- 16 GB, DDR4-2133 SDRAM

6ES7648-2AL60-0PA0**6ES7648-2AL70-0PA0****6ES7648-2AL80-0PA0****Removable drive bay**

for 3.5" hard disk or 2.5" solid-state drive, SATA (without hard disk drive/ solid-state drive)

6ES7648-0EH00-1BA0**Tower Kit IPC547G**

To convert the computer into an industrial tower PC

- Standard enclosure version
- Short enclosure version

6ES7648-1AA01-0XC0**6ES7648-1AA01-0XE0****Adapter cable**

- DisplayPort to DVI-D for on-board graphics
- DisplayPort to VGA for on-board graphics

6ES7648-3AF00-0XA0**6ES7648-3AG00-0XA0****Retainer**

For mechanically interlocking the internal USB port

6ES7648-1AA00-0XK0

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Additional information is available on the Internet at:

<http://www.siemens.com/ipc547g>

Overview



SIMATIC IPC647E

The SIMATIC IPC647E is a very rugged, high-performance industrial PC in 19" rack design (2 U) with excellent industrial functionality.

It offers:

- Extreme compactness
- Extreme ruggedness
- Intel® Core® i / Xeon technology 8th generation

Technical specifications

Article number	6AG4112-3....-.... SIMATIC IPC647E (Rack PC)
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 / 60 Hz	Yes / Yes
Mains buffering	
• Mains/voltage failure stored energy time	20 ms
Processor	
Processor type	Intel Xeon E-2176G (6C/12T, 3.7 (4.7) GHz, 12 MB cache, Turbo Boost 2.0, VT-x/-d technology, iAMT); Intel Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB cache, Turbo Boost 2.0, VT-x/-d technology, iAMT); Intel Core i5-8500 (6C/6T, 3.0 (4.1) GHz, 9 MB cache, Turbo Boost 2.0, VT-x/-d technology, iAMT); Intel Core i3-8100 (4C/4T, 3.6 GHz, 6 MB cache, VT-x/-d technology)
Chipset	Intel C246
Graphic	
Graphics controller	Onboard Intel UHD graphics P630/630 integrated in processor; graphics card NVIDIA Quadro P400 PCIe (x16) triple head (optional)
Drives	
Hard disk	1x 1 TB 3.5" SATA HDD, 2x 1 TB 3.5" SATA HDD, RAID1 2x 1 TB 3.5" SATA HDD, RAID1 2x 1 TB 3.5" SATA HDD (Enterprise), RAID1 2x 2 TB 3.5" SATA HDD (Enterprise)
SSD	Yes; 1x 480 GB 2.5" SATA SSD, 1x 960 GB 2.5" SATA SSD, 2x 480 GB 2.5" SATA SSD, RAID1 2x 480 GB 2.5" SATA SSD; 1x 512 GB M.2 NVMe SSD, 1x 1 024 GB M.2 NVMe SSD
Slot for drives	Mounting internally in vibration/shock-absorbing drive cage Type B or mounting on the front in removable trays (hot swap in RAID configurations) in drive cage Type A; mounting internally on the fixed drive cage optional

Article number	6AG4112-3....-.... SIMATIC IPC647E (Rack PC)
Memory	
Main memory	4 GB to 64 GB DDR4 2666 SDRAM DIMM, ECC optional
Hardware configuration	
Slots	
• free slots	2 slots: 1x PCI Express (x16) (16 lanes), 1x PCI Express (x16) (4 lanes) or 4 slots: 2x PCI, 2x PCI Express (x16) (8 lanes) or 4 slots: 2x PCI Express (x16) (8 lanes), 1x PCI Express (x16) (4 lanes), 1x PCI Express (x16) (1 lane); expansion modules up to 312 mm in length can be used
Interfaces	
Interfaces/bus type	1x COM1, 1x COM2 (optional), 2x DisplayPort, 1x DVI-D, audio (microphone in, line in, line out), 9x USB, 3x Gigabit Ethernet
PROFIBUS/MPI	can be implemented with plug-in card
USB port	4x USB 3.1 Gen. 2 Type A, 2x USB 3.1 Gen. 2 Type C on the rear; 1x USB 3.1 Gen. 2 Type A internally, e.g. for software dongle with optional interlock, 2x USB 3.1 Gen. 1 Type A on the front, can be used with door closed
Connection for keyboard/mouse	USB
serial interface	COM1: 1x RS 232, COM2 (optional): 1x RS 232
Multimedia	
• Audio In/Out	Yes
• Microphone In	Yes
Industrial Ethernet	
• Industrial Ethernet interface	3x Gigabit Ethernet (IE/PN), RJ45
- 100 Mbps	Yes
- 1000 Mbps	Yes
Integrated Functions	
Monitoring functions	
• Temperature monitoring	Yes
• Watchdog	Yes
• Status LEDs	Power, HDD, Ethernet 1, Ethernet 2, Ethernet 3, Watchdog, Temp, Fan, HDD1 alarm, HDD0 alarm
• Fan	Yes
• Monitoring function via network	Optional

PC-based Automation

Industrial PC

Rack PC

SIMATIC IPC647E

Technical specifications (continued)

Article number	6AG4112-3....-.... SIMATIC IPC647E (Rack PC)
EMC	
Interference immunity against discharge of static electricity	
• 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	
• Interference immunity against high frequency radiation	10 V/m for 80 ... 2 700 MHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 2.7 to 6 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 10 kHz to 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 > 30 m	±2 kV acc. to IEC 61000-4-5, surge, length > 30 m
• Interference immunity on signal cables < 30 m	±1 kV acc. to IEC 61000-4-4; burst, length < 3 m
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; EN 61000-6-4, CAN/CSA CISPR 22 Class B, EN 55032 Class B; FCC Class A; KN32 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

Article number	6AG4112-3....-.... SIMATIC IPC647E (Rack PC)
Standards, approvals, certificates	
CE mark	Yes; For use in industrial areas as well as domestic, business and commercial environments (emitted interference: EN 61000-6-3:2007 +A1:2011, noise immunity: EN 61000-6-2:2005)
CSA approval	Yes; CAN/CSA-C22.2 No. 61010-2-201 Second Edition
UL approval	Yes; UL 61010-2-201 Second Edition, File E115352 (I.T.E.)
cULus	Yes; UL 61010-2-201 Second Edition, File E115352 (I.T.E.)
RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
EMC	EN 61000-6-3; EN 61000-6-4, CAN/CSA CISPR 22 Class B, EN 55032 Class B; FCC Class A; KN32 Class B, EN 61000-3-2 Class D; EN 61000-3-3
Dust protection	With front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered
Ambient conditions	
Ambient temperature during operation	
• Ambient temperature during operation	0 °C to +50 °C with full configuration
Relative humidity	
• Relative humidity	Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation)
Vibrations	
• Vibration resistance during operation acc. to IEC 60068-2-6	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/s ² (0.5 g)
Shock testing	
• Shock load during operation	Tested according to DIN IEC 60068-2-7: 50 m/s ² (5 g), 30 ms, 100 shocks
Operating systems	
Operating system	Windows 10 Enterprise 2016 LTSC, 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
Dimensions	
Width	430 mm
Height	88 mm; 2 U
Depth	444 mm

Ordering data	Article No.	Article No.	
SIMATIC IPC647E	6AG4112 - 3	6AG4112 - 3	
<p>Rack PC, 19", 2 U; Interfaces: 3x Gbit Ethernet (IE/PN), RJ45; 1x DVI-D; 2x DisplayPort; 1x COM1; audio; 4x USB 3.1, 2x USB 3.1 (type C) on the rear; 2x USB 3.0 on the front, 1x USB 3.1 internal. 1x M.2 slot internal; Temperature and fan monitoring, watchdog, card retainer</p> <p><u>Processor / main board</u></p> <ul style="list-style-type: none"> Core i3-8100 (4C/4T, 3.6 GHz, 6 MB cache, VT-d) Board 2 slots: 1x PCIe x16 (16 L), 1x PCIe x16 (4 L) Core i3-8100 (4C/4T, 3.6 GHz, 6 MB cache, VT-d). Board 4 slots: 2x PCI, 2x PCIe x16 (8 L) Core i3-8100 (4C/4T, 3.6 GHz, 6 MB cache, VT-d). Board 4 slots: 2x PCIe x16 (8 L), 1x PCIe x16 (4 L), 1x PCIe x16 (1 L) Core i5-8500 (6C/6T, 3.0 (4.1) GHz, 9 MB cache, TB, VT-d, AMT). Board 2 slots: 1x PCIe x16 (16 L), 1x PCIe x16 (4 L) Core i5-8500 (6C/6T, 3.0 (4.1) GHz, 9 MB cache, TB, VT-d, AMT). Board 4 slots: 2x PCI, 2x PCIe x16 (8 L) Core i5-8500 (6C/6T, 3.0 (4.1) GHz, 9 MB cache, TB, VT-d, AMT). Board 4 slots: 2x PCIe x16 (8 L), 1x PCIe x16 (4 L), 1x PCIe x16 (1 L) Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB cache, TB, VT-d, AMT). Board 2 slots: 1x PCIe x16 (16 L), 1x PCIe x16 (4 L) Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB cache, TB, VT-d, AMT); Board 4 slots: 2x PCI, 2x PCIe x16 (8 L) Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB cache, TB, VT-d, AMT). Board 4 slots: 2x PCIe x16 (8 L), 1x PCIe x16 (4 L), 1x PCIe x16 (1 L) Xeon E-2176G (6C/12T, 3.7 (4.7) GHz, 12 MB cache, TB, VT-d, AMT). Board 2 slots: 1x PCIe x16 (16 L), 1x PCIe x16 (4 L) Xeon E-2176G (6C/12T, 3.7 (4.7) GHz, 12 MB cache, TB, VT-d, AMT). Board 4 slots: 2x PCI, 2x PCIe x16 (8 L) Xeon E-2176G (6C/12T, 3.7 (4.7) GHz, 12 MB cache, TB, VT-d, AMT). Board 4 slots: 2x PCIe x16 (8 L), 1x PCIe x16 (4 L), 1x PCIe x16 (1 L) 	<p>A</p> <p>B</p> <p>C</p> <p>D</p> <p>E</p> <p>F</p> <p>G</p> <p>H</p> <p>J</p> <p>K</p> <p>L</p> <p>M</p>	<p>SIMATIC IPC647E</p> <p><u>Drives</u></p> <ul style="list-style-type: none"> 1 TB HDD 3.5" SATA 2x 1 TB HDD 3.5" SATA RAID1, 2x 1 TB HDD 3.5" SATA RAID1, 2x 1 TB HDD [Enterprise] 3.5" SATA RAID1, 2x 2 TB HDD [Enterprise] 3.5" SATA 1 TB HDD 3.5" SATA + 480 GB SSD 2.5" SATA (for operating system if M.2 SSD not ordered) 480 GB SSD 2.5" SATA 960 GB SSD 2.5" SATA 2x 480 GB SSD 2.5" SATA RAID1, 2x 480 GB SSD 2.5" SATA Without drives <p><u>Type of enclosure / power supplies</u></p> <ul style="list-style-type: none"> Enclosure with drive cage type B (for internal installation/0.5 g vibration, 5 g shock); 100/240 V AC industrial power supply Enclosure with drive cage type A (for removable frames on the front); 100/240 V AC industrial power supply Enclosure with drive cage type B (for internal installation/0.5 g vibration, 5 g shock); 2x 100/240 V AC redundant industrial power supply Enclosure with drive cage type A (for removable frames on the front); 2x 100/240 V AC redundant industrial power supply Enclosure with drive cage type B (for internal installation/0.5 g vibration, 5 g shock) + COM2 port; 100/240 V AC industrial power supply Enclosure with drive cage type A (for removable frames on the front) + COM2 interface; 100/240 V AC industrial power supply Enclosure with drive cage type B (for internal installation/0.5 g vibration, 5 g shock) + COM2 port; 2x 100/240 V AC redundant industrial power supply Enclosure with drive cage type A (for removable frames on the front) + COM2 port; 2x 100/240 V AC redundant industrial power supply 	<p>A</p> <p>B</p> <p>C</p> <p>D</p> <p>E</p> <p>P</p> <p>Q</p> <p>R</p> <p>S</p> <p>T</p> <p>X</p> <p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p>

PC-based Automation

Industrial PC

Rack PC

SIMATIC IPC647E

Ordering data

SIMATIC IPC647E

Memory configuration

- 4 GB DDR4 SDRAM (1x 4 GB), single channel 0
- 8 GB DDR4 SDRAM (2x 4 GB), dual channel 1
- 16 GB DDR4 SDRAM (2x 8 GB), dual channel 2
- 32 GB DDR4 SDRAM (2x 16 GB), dual channel 3
- 64 GB DDR4 SDRAM (4x 16 GB), dual channel 4
- 16 GB DDR4 SDRAM (2x 8 GB), ECC, dual channel (only with Core i3/Xeon) 6
- 32 GB DDR4 SDRAM (2x 16 GB), ECC, dual channel (only with Core i3/Xeon) 7
- 64 GB DDR4 SDRAM (4x 16 GB), ECC, dual channel (only with Core i3/Xeon) 8

Expansion hardware

- Without expansions 0
- PCIe x16 graphics card (3x mDP; 3x adapter mDP on DP) (1 slot occupied) 2
- 512 GB SSD M.2 NVMe (M.2 slot occupied) (for operating system) 4
- 512 GB SSD M.2 NVMe (M.2 slot occupied) (for operating system) + PCIe x16 graphics card (3x mDP; 3x adapter mDP on DP) (1 slot occupied) 5
- 1 024 GB SSD M.2 NVMe (M.2 slot occupied) (for operating system) 6

Operating system (pre-installed and activated)

- Windows 10 Enterprise 2016 LTSB, multi-language (en, de, fr, it, sp), 64-bit [for Core i3/i5] A
- Windows 10 Enterprise 2016 LTSB, multi-language (en, de, fr, it, sp), 64-bit, for Core i7/Xeon B
- Windows Server 2016 Standard Edition incl. 5 clients, 64-bit, MUI (en, de, fr, it, sp) H
- Without operating system X

Software / adapters / security expansions

- SIMATIC IPC DiagMonitor software enclosed A
- SIMATIC IPC Image & Partition Creator software included B
- SIMATIC IPC DiagMonitor + Image & Partition Creator software enclosed C
- Adapter cable DP to VGA for onboard graphics H
- Adapter cable DP to DVI-D for onboard graphics J
- Without expansions X
- TPM¹⁾ 2.0 (not for China) Y

Cables, country-specific versions

- Without power supply cord 0
- Power supply cord for Europe 1
- Power supply cord for USA 2
- Power supply cord for China 3

Article No.

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Article No.

Accessories

Memory expansions

- 4 GB DDR4 2666 SDRAM, DIMM 6ES7648-2AL60-0QA0
- 8 GB DDR4 2666 SDRAM, DIMM 6ES7648-2AL70-0QA0
- 16 GB DDR4 2666 SDRAM, DIMM 6ES7648-2AL80-0QA0

Removable drive bay

For 3.5" hard disk or 2.5" solid-state drive, SATA (without hard disk drive/ solid-state drive)

6ES7648-0EH00-1BA0

Retainer

For mechanically interlocking the internal USB port

6ES7648-1AA00-0XK0

Adapter cable

- DisplayPort to DVI-D for on-board graphics 6ES7648-3AF00-0XA0
- DisplayPort to VGA for on-board graphics 6ES7648-3AG00-0XA0
- Mini DisplayPort to VGA for graphics card 6ES7648-3AL00-0XA0
- Mini DisplayPort to DVI-D for graphics card 6ES7648-3AK00-0XA0
- Mini DisplayPort to DVI-D for graphics card (3 per package) 6ES7648-3AK00-1XA0
- Mini DisplayPort to DisplayPort for graphics card 6ES7648-3AJ00-0XA0
- Mini DisplayPort to DisplayPort for graphics card (3 per package) 6ES7648-3AJ00-1XA0

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

For an up-to-date overview, see the SIMATIC IPC online configurator at: <http://www.siemens.com/ipc-configurator>

Further information can be found on the Internet at:

<http://www.siemens.com/simatic-pc>

¹⁾ TPM = Trusted Platform Module

Overview



SIMATIC IPC647D

The SIMATIC IPC647D is a very rugged, high-performance industrial PC in 19" rack design (2 U) with excellent industrial functionality.

It offers:

- Extreme compactness
- Extreme ruggedness
- Intel® Core® i/Xeon technology 4th generation

Technical specifications

Article number	6AG4112-2....-.... SIMATIC IPC647D (Rack PC)
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	
Main memory	2 GB to 32 GB DDR3 1600 DIMM, ECC optional

PC-based Automation

Industrial PC

Rack PC

SIMATIC IPC647D**Technical specifications (continued)**

Article number	6AG4112-2....-.... SIMATIC IPC647D (Rack PC)
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	
Interfaces/bus type	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
PROFIBUS/MPI	Optionally onboard, isolated, max. 12 Mbit/s, no plug-in card necessary, CP 5622-compatible
USB port	2x USB 3.0, 2x USB 2.0 rear, 1x USB 3.0, 1x USB 2.0 front, 1x USB 3.0 internal
Connection for keyboard/mouse serial interface	2x PS/2 COM1: 1x RS 232, COM2 (optional): 1x RS 232
parallel interface	optional LPT1
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

Article number	6AG4112-2....-.... SIMATIC IPC647D (Rack PC)
EMC	
Interference immunity against discharge of static electricity	
• 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	
• 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 >30 m	±2 kV acc. to IEC 61000-4-4, burst; ±2 kV acc. to IEC 61000-4-5, surge
• Interference immunity on signal cables < 30 m	±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

Technical specifications (continued)

Article number	6AG4112-2....-.... SIMATIC IPC647D (Rack PC)	Article number	6AG4112-2....-.... SIMATIC IPC647D (Rack PC)
Standards, approvals, certificates		Operating systems	
Approval	CE, cULus 60950, KCC	Operating system	Windows 7 Ultimate, multi-language (32-bit/64-bit), Windows 10 Enterprise 2015 LTSC, multi-language (64-bit), Windows 10 Enterprise 2016 LTSC, 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)
CE mark	Yes; For use in industrial areas as well as domestic, business and commercial environments (emitted interference: EN 61000-6-3:2007 +A1:2011, noise immunity: EN 61000-6-2:2005)	pre-installed operating system	Yes
CSA approval	Yes; Included in cULus	Additional info on operating system	Multi-Language User Interface (MUI): 5 languages (English, German, French, Spanish, Italian)
UL approval	Yes	without operating system	Yes
cULus	Yes; UL 60950-1, file number E115352	Software	
RCM (formerly C-TICK)	Yes	SIMATIC Software	Optionally in package with SIMATIC WinCC or WinCC flexible
KC approval	Yes	Dimensions	
EAC (formerly Gost-R)	Yes	Width	430 mm
EMC	CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005	Height	88 mm; 2U
Dust protection	With front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered	Depth	444 mm
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			
• 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		
Relative humidity			
• Relative humidity	Tested to IEC 60068-78, DIN IEC 68-2-30: 5% to 80% at 25 °C (no condensation)		
Vibrations			
• Vibration resistance during operation acc. to IEC 60068-2-6	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/s ² (0.5 g)		
Shock testing			
• Shock load during operation	Tested according to IEC 60068-2-27, IEC 60068-2-29: half-sine: 50 m/s ² (5 g), 30 ms, 100 shocks per axis		

PC-based Automation

Industrial PC

Rack PC

SIMATIC IPC647D**Ordering data****Article No.****SIMATIC IPC647D****6AG4112 - 2**

Interfaces: RACK PC, 19", 2 U
 Interfaces: 2 x GBIT LAN (RJ45);
 1 x DVI-I; 2 x DisplayPort;
 1 x COM; 2 x PS/2; audio;
 2 x USB 3.0, 2 x USB 2.0 at rear;
 1 x USB 3.0, 1 x USB 2.0 at front,
 1 x USB 3.0 internal; temperature
 and fan monitoring, watchdog,
 card retainer

Processor/main board

- Core i3-4330TE
(2C/4T, 2.4 GHz, 4 MB cache);
mainboard without fieldbus
- Core i3-4330TE
(2C/4T, 2.4 GHz, 4 MB, VT-x);
mainboard with PROFIBUS/MPI
(CP 5622-compatible)
- Core i3-4330TE
(2C/4T, 2.4 GHz, 4 MB cache);
mainboard with PROFINET
(3 x RJ45, CP 1616-compatible)
- Core i5-4570TE
(2C/4T, 2.7 (3.3) GHz,
4 MB cache, TB, VT-d, AMT);
mainboard without fieldbus
- Core i5-4570TE
(2C/4T, 2.7 (3.3) GHz,
4 MB cache, TB, VT-x, VT-d, AMT);
mainboard with PROFIBUS/MPI
(CP 5622-compatible)
- Core i5-4570TE
(2C/4T, 2.7 (3.3) GHz,
4 MB cache, TB, VT-d, AMT);
mainboard with PROFINET
(3 x RJ45, CP 1616-compatible)
- Xeon E3-1268L v3
(4C/8T, 2.3 (3.3) GHz,
8 MB cache, TB, VT-d, AMT);
mainboard without fieldbus
- Xeon E3-1268L v3
(4C/8T, 2.3 (3.3) GHz,
8 MB cache, TB, VT-x, VT-d, AMT);
mainboard with PROFIBUS/MPI
(CP 5622-compatible)
- Xeon E3-1268L v3
(4C/8T, 2.3 (3.3) GHz,
8 MB cache, TB, VT-d, AMT);
mainboard with PROFINET
(3 x RJ45, CP 1616-compatible)

D

E

F

G

H

J

K

L

M

Article No.**SIMATIC IPC647D****6AG4112 - 2**Hard disks/SSD

- 500 GB HDD SATA, internal
(0.5 g vibration, 5 g shock)
- 1 TB HDD SATA, internal
(0.5 g vibration, 5 g shock)
- 2 x 1 TB HDD SATA, internal
(0.5 g vibration, 5 g shock)
- RAID1, 1 TB (2 x 1 TB HDD SATA,
mirror disks), internal (0.5 g
vibration, 5 g shock)
- 500 GB HDD SATA in removable
drive bay; front
- 1 TB HDD SATA in removable
drive bay; front
- 2 x 1 TB HDD SATA in removable
drive bay; front-mounted
- RAID1, 1 TB (2 x 1 TB HDD SATA,
mirror disks) in removable drive
bay, hot-swappable, front
- 240 GB SSD SATA, internal
- 240 GB SSD SATA in removable
drive bay; front
- RAID1, 1 TB (2 x 1 TB HDD SAS,
mirror disks) in removable
drive bay, hot-swappable, front-
mounted; PCIe x8 RAID controller
including ZCMP module
(2 slots occupied)
- RAID1, 240 GB (2 x 240 GB SSD
SATA, mirror disks), in removable
drive bay, hot swap, at the front

A

B

C

D

H

K

M

P

S

T

U

W

Memory configuration

- 2 GB DDR3 SDRAM (1 x 2 GB),
single channel
- 4 GB DDR3 SDRAM (2 x 2 GB),
dual channel
- 8 GB DDR3 SDRAM (2 x 4 GB),
dual channel
- 16 GB DDR3 SDRAM (2 x 8 GB),
dual channel
- 32 GB DDR3 SDRAM (4 x 8 GB),
dual channel
- 8 GB DDR3 SDRAM, (2 x 4 GB),
ECC, dual channel
- 16 GB DDR3 SDRAM, (2 x 8 GB),
ECC, dual channel
- 32 GB DDR3 SDRAM, (4 x 8 GB),
ECC, dual channel

1

2

3

4

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7

8

Ordering data	Article No.	Ordering data	Article No.
SIMATIC IPC647D	6AG4112 - 2	SIMATIC IPC647D	6AG4112 - 2
<u>Bus module/removable data storage media/SSD:</u>		<u>Operating system (pre-installed and activated)</u>	
• Bus module 2-slot: 2 x PCIe x16; without drives	0	• Windows 7 Ultimate, 32-bit, SP1, MUI (en, de, fr, it, es)	A
• Bus module 4-slot: 2 x PCI, 2 x PCIe x16; without drives	1	• Windows 7 Ultimate, 64-bit, SP1, MUI (en, de, fr, it, es)	B
• Bus module 4-slot: 4 x PCIe x16; without drives	2	• Windows 10 Enterprise 2015, LTSB, multi-language (en, de, fr, it, es), 64-bit	C
• Bus module 2-slot: 2 x PCIe x16; DVD±RW (slim)	3	• Windows 10 Enterprise 2016, LTSB, multi-language (en, de, fr, it, es), 64-bit (for Core i3/i5)	D
• Bus module 4-slot: 2 x PCI, 2x PCIe x16; DVD±RW (slim)	4	• Windows 10 Enterprise 2016, LTSB, multi-language (en, de, fr, it, es), 64-bit (for Xeon)	E
• Bus module 4-slot: 4 x PCIe x16; DVD±RW (slim)	5	• Windows Server 2008 R2 Standard Edition, 64-bit SP1 incl. 5 clients, multi-language (en, de, fr, it, es)	F
• Bus module 2-slot: 2 x PCIe x16/1 x 240 GB SSD (for operating system), internal	6	• Windows Server 2012 R2 Standard Edition incl. 5 clients, MUI (en, de, fr, it, es), 64-bit	G
• Bus module 4-slot: 2 x PCI, 2 x PCIe x16/1 x 240 GB SSD (for operating system), internal	7	• Windows Server 2016 Standard Edition incl. 5 clients, MUI (en, de, fr, it, es), 64-bit	H
• Bus module 4-slot: 4 x PCIe x16/1 x 240 GB SSD (for operating system), internal	8	• Without operating system	X
<u>Expansion hardware</u>		<u>Expansions (software)/Security</u>	
• Without expansions (hardware), onboard graphics;	0	• SIMATIC IPC DiagMonitor software enclosed	A
• Without expansions (hardware), onboard graphics, DVI-I adapter cable, VGA-compliant for onboard graphics;	1	• SIMATIC IPC Image Creator software included	B
• Serial (COM2) + parallel (LPT, 1 slot reserved), onboard graphics;	2	• SIMATIC IPC DiagMonitor and Image Creator software enclosed	C
• Serial (COM2) + parallel (LPT, 1 slot reserved), onboard graphics; DVI-I adapter cable, VGA-compliant for onboard graphics;	3	• Without software	X
• Serial (COM2) + parallel (LPT, 1 slot reserved) + PCIe x16 Graphics Card (Dual-Head: 2 x VGA or 2 x DVI-D), 1 GB, (1 slot occupied);	4	• TPM 1.2 ¹⁾ (not for China and Russia)	Y
• PCIe x16 graphics card (dual head: 2 x VGA or 2 x DVI-D), 1 GB, (1 slot occupied)	5	<u>Power supply, with country-specific cable</u>	
		• 110/240 V AC industrial power supply with NAMUR; power cable for Europe	0
		• 110/240 V AC industrial power supply with NAMUR; power cable for United Kingdom	1
		• 110/240 V AC industrial power supply with NAMUR; power cable for Switzerland	2
		• 110/240 V AC industrial power supply with NAMUR; power cable for the USA	3
		• 110/240 V AC industrial power supply with NAMUR; power cable for Italy	4
		• 110/240 V AC industrial power supply with NAMUR; power cable for China	5
		• 2 x 110/240 V AC redund. power supply; without power cable	6
		• 110/240 V AC industrial power supply with NAMUR; without power cable	8

¹⁾ TPM = Trusted Platform Module

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

For an up-to-date overview, see the SIMATIC IPC online configurator at:

<http://www.siemens.com/ipc-configurator>

PC-based Automation

Industrial PC

Rack PC

SIMATIC IPC647D

Ordering data	Article No.	Ordering data	Article No.
Accessories		Power cable, straight, 3 m long	
Memory expansions		<ul style="list-style-type: none"> • Austria, Belgium, Finland, France, Germany, Netherlands, Spain, Sweden • United Kingdom • Switzerland • USA • Italy • China 	6ES7900-0AA00-0XA0 6ES7900-0BA00-0XA0 6ES7900-0CA00-0XA0 6ES7900-0DA00-0XA0 6ES7900-0EA00-0XA0 6ES7900-0FA00-0XA0
<ul style="list-style-type: none"> • 2 GB DDR3 1600 DIMM • 4 GB DDR3 1600 DIMM • 8 GB DDR3 1600 DIMM • 8 GB DDR3 1600 DIMM, ECC 	6ES7648-2AJ50-0MA0 6ES7648-2AJ60-0MA0 6ES7648-2AJ70-0MA0 6ES7648-2AJ70-1MA0	USB retainer	6ES7648-1AA00-0XK0
Hardware accessories		Expansion components	See Expansion components
Tray for low-profile removable drive bay	6ES7648-0EG01-1BA0	Communication products	See Expansion components
For 3.5" hard drive (SATA/SAS) and 2.5" SSD (SATA), without drive			
Filter mats	A5E02396171		
for SIMATIC IPC647D (packing unit: 10 units)			
Adapter cable			
<ul style="list-style-type: none"> • Adapter cable DisplayPort to DVI-D for onboard graphics • Adapter cable DisplayPort to VGA for onboard graphics 	6ES7648-3AF00-0XA0 6ES7648-3AG00-0XA0		

Note:

Software Packages with SIMATIC WinCC flexible, WinCC RT Advanced, SIMATIC WinCC, and SIMATIC WinAC RTX (F) can be ordered together with the SIMATIC IPC at a price advantage. More information under "Embedded Bundles/Packages for industrial PCs".

Additional information is available on the Internet at:

<http://www.siemens.com/simatic-pc>

Overview



SIMATIC IPC847E

SIMATIC IPC847E is a very robust, high-performance industrial PC in 19" rack design (4 U) with excellent industrial functionality.

It offers:

- Maximum expandability
- Extreme ruggedness
- Intel® Core® i / Xeon technology 8th generation

Technical specifications

Article number	6AG4114-3....-.... SIMATIC IPC847E (Rack PC)
Installation type/mounting	
Mounting	For horizontal and vertical installation; prepared for telescopic rails; 19" mounting bracket can be removed externally; tower kit (optional)
Design	Rack PC, 19", 4U
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	Intel Xeon E-2176G (6C/12T, 3.7 (4.7) GHz, 12 MB cache, Turbo Boost 2.0, VT-x/-d technology, iAMT); Intel Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB cache, Turbo Boost 2.0, VT-x/-d technology, iAMT); Intel Core i5-8500 (6C/6T, 3.0 (4.1) GHz, 9 MB cache, Turbo Boost 2.0, VT-x/-d technology, iAMT); Intel Core i3-8100 (4C/4T, 3.6 GHz, 6 MB cache, VT-x/-d technology)
Chipset	Intel C246
Graphic	
Graphics controller	Onboard Intel UHD graphics P630/630 integrated in processor; graphics card NVIDIA Quadro P400 PCIe (x16) triple head (optional)

PC-based Automation

Industrial PC

Rack PC

SIMATIC IPC847E**Technical specifications** (continued)

Article number	6AG4114-3....-.... SIMATIC IPC847E (Rack PC)
Drives	
Hard disk	1x 1 TB 3.5" SATA HDD, 2x 1 TB 3.5" SATA HDD, RAID1 2x 1 TB 3.5" SATA HDD, RAID1 2x 1 TB 3.5" SATA HDD [Enterprise], RAID1 2x 2 TB 3.5" SATA HDD [Enterprise], RAID1 2x 2 TB 3.5" SATA HDD [Enterprise] + 2 TB 3.5" SATA HDD [Enterprise] as hot spare, RAID1 2x 2 TB 3.5" SATA HDD [Enterprise] + 480 GB 2.5" SATA SSD, RAID5 3x 2 TB 3.5" SATA HDD [Enterprise], RAID5 3x 2 TB 3.5" SATA HDD [Enterprise] + 2 TB 3.5" SATA HDD [Enterprise] as hot spare
SSD	Yes: 1x 480 GB 2.5" SATA SSD, 1x 960 GB 2.5" SATA SSD, 2x 480 GB 2.5" SATA SSD, RAID1 2x 480 GB 2.5" SATA SSD; 1x 512 GB M.2 NVMe SSD, 1x 1 024 GB M.2 NVMe SSD
Slot for drives	Mounting internally in vibration/shock- absorbing drive cage Type B or mounting on the front in removable trays (hot swap in RAID configurations) in drive cage Type A; mounting internally on the fixed drive cage optional
Memory	
Main memory	4 GB to 64 GB DDR4 2666 SDRAM DIMM, ECC optional
Hardware configuration	
Slots	
• free slots	9 slots: 7x PCI, 2x PCI Express (x16) (8 lanes) or 11 slots: 3x PCI, 1x PCI Express (x16) (8 lanes), 5x PCI Express (x16) (4 lanes), 2x PCI Express (x4) (4 lanes) or 11 slots: 3x PCI, 1x PCI Express (x16) (16 lanes), 3x PCI Express (x16) (4 lanes), 2x PCI Express (x16) (1 lane), 2x PCI Express (x4) (4 lanes); expansion modules up to a length of 312 mm can be used

Article number	6AG4114-3....-.... SIMATIC IPC847E (Rack PC)
Interfaces	
Interfaces/bus type	1x COM1, 1x COM2 (optional), 2x DisplayPort, 1x DVI-D, audio (microphone in, line in, line out), 9x USB, 3x Gigabit Ethernet
PROFIBUS/MPI	can be implemented with plug-in card
USB port	4x USB 3.1 Gen. 2 Type A, 2x USB 3.1 Gen. 2 Type C on the rear; 1x USB 3.1 Gen. 2 Type A internally, e.g. for software dongle with optional interlock, 2x USB 3.1 Gen. 1 Type A on the front, can be used with door closed
Connection for keyboard/ mouse	USB
serial interface	COM1: 1x RS 232, COM2 (optional): 1x RS 232
Multimedia	
• Audio In/Out	Yes
• Microphone In	Yes
Video interfaces	
• Graphics interface	2x DisplayPort and 1x DVI-D onboard; 1x VGA via DP-VGA adapter cable (optional); graphics card PCIe (x16), Triple Head (3x mini DisplayPort, 2 GB graphics memory, 3x mini DisplayPort to DisplayPort adapter cable) (optional)
Industrial Ethernet	
• Industrial Ethernet interface	3x Gigabit Ethernet (IE/PN), RJ45
- 100 Mbps	Yes
- 1000 Mbps	Yes
Integrated Functions	
Monitoring functions	
• Temperature monitoring	Yes
• Watchdog	Yes
• Status LEDs	POWER, HDD, ETHERNET 1, ETHERNET 2, ETHERNET 3, WATCHDOG, TEMP, FAN, HDD3 ALARM, HDD2 ALARM, HDD1 ALARM, HDD0 ALARM
• Fan	Yes
• Monitoring function via network	Optional

Technical specifications (continued)

Article number	6AG4114-3....-.... SIMATIC IPC847E (Rack PC)
EMC	
Interference immunity against discharge of static electricity	
<ul style="list-style-type: none"> 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	
<ul style="list-style-type: none"> Interference immunity against high frequency radiation 	10 V/m for 80 ... 2 700 MHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 2.7 to 6 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 10 kHz to 80 MHz, 80% AM acc. to IEC 61000-4-6
Interference immunity to cable-borne interference	
<ul style="list-style-type: none"> 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
<ul style="list-style-type: none"> Interference immunity on signal cables > 30 m 	±2 kV acc. to IEC 61000-4-5, surge, length > 30 m
<ul style="list-style-type: none"> Interference immunity on signal cables < 30 m 	±1 kV acc. to IEC 61000-4-4; burst, length < 3 m
Interference immunity against voltage surge	
<ul style="list-style-type: none"> asymmetric interference 	±2 kV acc. to IEC 61000-4-5, surge asymmetric
<ul style="list-style-type: none"> symmetric interference 	±1 kV acc. to IEC 61000-4-5, surge symmetric
Interference immunity to magnetic fields	
<ul style="list-style-type: none"> Interference immunity to magnetic fields at 50 Hz 	100 A/m; to IEC 61000-4-8
Emission of conducted and non-conducted interference	
<ul style="list-style-type: none"> Interference emission via line/AC current cables 	EN 61000-6-3; EN 61000-6-4, CAN/CSA CISPR 22 Class B, EN 55032 Class B; FCC Class A; KN32 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

Article number	6AG4114-3....-.... SIMATIC IPC847E (Rack PC)
Standards, approvals, certificates	
CE mark	Yes; For use in industrial areas as well as domestic, business and commercial environments (emitted interference: EN 61000-6-3:2007 +A1:2011, noise immunity: EN 61000-6-2:2005)
CSA approval	Yes; CAN/CSA-C22.2 No. 61010-2-201 Second Edition
UL approval	Yes; UL 61010-2-201 Second Edition, File E115352 (I.T.E.)
cULus	Yes; UL 61010-2-201 Second Edition, File E115352 (I.T.E.)
RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
EMC	EN 61000-6-3; EN 61000-6-4, CAN/CSA CISPR 22 Class B, EN 55032 Class B; FCC Class A; KN32 Class B, EN 61000-3-2 Class D; EN 61000-3-3
Dust protection	With front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered
Ambient conditions	
Ambient temperature during operation	
<ul style="list-style-type: none"> Ambient temperature during operation 	0 °C to +50 °C with full configuration
Relative humidity	
<ul style="list-style-type: none"> Relative humidity 	Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation)
Vibrations	
<ul style="list-style-type: none"> Vibration resistance during operation acc. to IEC 60068-2-6 	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/s ² (0.5 g)
Shock testing	
<ul style="list-style-type: none"> Shock load during operation 	Tested according to IEC 60068-2-27, IEC 60068-2-29: half-sine: 50 m/s ² (5 g), 30 ms, 100 shocks per axis
Operating systems	
Operating system	Windows 10 Enterprise 2016 LTSB, 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
Dimensions	
Width	430 mm
Height	177 mm; 4U
Depth	444 mm

PC-based Automation

Industrial PC

Rack PC

SIMATIC IPC847E

Ordering data

Article No.

SIMATIC IPC847E

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Rack PC, 19", 4 U
 Interfaces: 3x Gbit Ethernet (IE/PN), RJ45; 1x DVI-D; 2x DisplayPort; 1x COM1; audio; 4x USB 3.1, 2x USB 3.1 (type C) on the rear; 2x USB 3.0 on the front, 1x USB 3.1 internal. Temperature and fan monitoring, watchdog, card retainer

Processors / Boards

- Core i3-8100 (4C/4T, 3.6 GHz, 6 MB cache, VT-d).
Board 9 slots: 7x PCI, 2x PCIe x16 (8 L)
- Core i3-8100 (4C/4T, 3.6 GHz, 6 MB cache, VT-d).
Board 11 slots: 3x PCI, 1x PCIe x16 (8 L), 5x PCIe x16 (4 L), 2x PCIe x4 (4 L)
- Core i3-8100 (4C/4T, 3.6 GHz, 6 MB cache, VT-d).
Board 11 slots: 3x PCI, 1x PCIe x16 (16 L), 3x PCIe x16 (4 L), 2x PCIe x16 (1 L), 2x PCIe x4 (4 L)
- Core i5-8500 (6C/6T, 3.0 (4.1) GHz, 9 MB cache, TB, VT-d, AMT); Board 9 slots: 7x PCI, 2x PCIe x16 (8 L)
- Core i5-8500 (6C/6T, 3.0 (4.1) GHz, 9 MB cache, TB, VT-d, AMT); Board 11 slots: 3x PCI, 1x PCIe x16 (8 L), 5x PCIe x16 (4 L), 2x PCIe x4 (4 L)
- Core i5-8500 (6C/6T, 3.0 (4.1) GHz, 9 MB cache, TB, VT-d, AMT); Board 11 slots: 3x PCI, 1x PCIe x16 (16 L), 3x PCIe x16 (4 L), 2x PCIe x16 (1 L), 2x PCIe x4 (4 L)
- Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB cache, TB, VT-d, AMT); Board 9 slots: 7x PCI, 2x PCIe x16 (8 L)
- Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB cache, TB, VT-d, AMT); Board 11 slots: 3x PCI, 1x PCIe x16 (8 L), 5x PCIe x16 (4 L), 2x PCIe x4 (4 L)
- Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB cache, TB, VT-d, AMT); Board 11 slots: 3x PCI, 1x PCIe x16 (16 L), 3x PCIe x16 (4 L), 2x PCIe x16 (1 L), 2x PCIe x4 (4 L)
- Xeon E-2176G (6C/12T, 3.7 (4.7) GHz, 12 MB cache, TB, VT-d, AMT); Board 9 slots: 7x PCI, 2x PCIe x16 (8 L)
- Xeon E-2176G (6C/12T, 3.7 (4.7) GHz, 12 MB cache, TB, VT-d, AMT); Board 11 slots: 3x PCI, 1x PCIe x16 (8 L), 5x PCIe x16 (4 L), 2x PCIe x4 (4 L)
- Xeon E-2176G (6C/12T, 3.7 (4.7) GHz, 12 MB cache, TB, VT-d, AMT); Board 11 slots: 3x PCI, 1x PCIe x16 (16 L), 3x PCIe x16 (4 L), 2x PCIe x16 (1 L), 2x PCIe x4 (4 L)

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M

Article No.

SIMATIC IPC847E

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Drives

- 1 TB HDD 3.5" SATA
- 2x 1 TB HDD 3.5" SATA
- RAID1, 2x 1 TB HDD 3.5" SATA
- RAID1, 2x 1 TB HDD [Enterprise] 3.5" SATA
- RAID1, 2x 2 TB HDD [Enterprise] 3.5" SATA
- RAID1, 2x 2 TB HDD [Enterprise] 3.5" SATA + 2 TB HDD [Enterprise] 3.5" SATA as HotSpare
- RAID1, 2x 2 TB HDD [Enterprise] 3.5" SATA + 480 GB 2.5" SSD SATA (for operating system if M.2 SSD not ordered)
- RAID5, 3x 2 TB HDD [Enterprise] 3.5" SATA
- RAID5, 3x 2 TB HDD [Enterprise] 3.5" SATA + 2 TB HDD [Enterprise] 3.5" SATA as HotSpare
- 1 TB HDD 3.5" SATA + 480 GB SSD 2.5" SATA (for operating system if M.2 SSD not ordered)
- 480 GB SSD 2.5" SATA
- 960 GB SSD 2.5" SATA
- 2x 480 GB SSD 2.5" SATA
- RAID1, 2x 480 GB SSD 2.5" SATA
- Without drives

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Type of enclosure/power supplies

- Enclosure with drive cage type B (for internal installation / 0.5 g vibration, 5 g shock); 100/240 V AC industrial power supply
- Enclosure with drive cage type A (for removable frames on the front); 100/240 V AC industrial power supply
- Enclosure with drive cage type B (for internal installation / 0.5 g vibration, 5 g shock); 2x 100/240 V AC redundant industrial power supply
- Enclosure with drive cage type A (for removable frames on the front); 2x 100/240 V AC redundant industrial power supply
- Enclosure with drive cage type B (for internal installation / 0.5 g vibration, 5 g shock) + COM2 port; 100/240 V AC industrial power supply
- Enclosure with drive cage type A (for removable frames on the front) + COM2 interface; 100/240 V AC industrial power supply
- Enclosure with drive cage type B (for internal installation / 0.5 g vibration, 5 g shock) + COM2 port; 2x 100/240 V AC redundant industrial power supply
- Enclosure with drive cage Type A (for removable frames on the front) + COM2 port; 2x 100/240 V AC redundant industrial power supply

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Ordering data	Article No.	Article No.
SIMATIC IPC847E	6AG4114 - 3	6AG4114 - 3
<u>Memory configuration</u>		
• 4 GB DDR4 SDRAM (1x 4 GB), single channel	0	0
• 8 GB DDR4 SDRAM (2x 4 GB), dual channel	1	1
• 16 GB DDR4 SDRAM (2x 8 GB), dual channel	2	2
• 32 GB DDR4 SDRAM (2x 16 GB), dual channel	3	3
• 64 GB DDR4 SDRAM (4x 16 GB), dual channel	4	
• 16 GB DDR4 SDRAM (2x 8 GB), ECC, dual channel (only with Core i3/Xeon)	6	
• 32 GB DDR4 SDRAM (2x 16 GB), ECC, dual channel (only with Core i3/Xeon)	7	
• 64 GB DDR4 SDRAM (4x 16 GB), ECC, dual channel (only with Core i3/Xeon)	8	
<u>Expansion hardware</u>		
• Without expansion	0	
• PCIe x4 adapter card for M.2 NVMe module without SSD (1 slot occupied)	1	
• PCIe x16 graphics card (3x mDP: 3x adapter mDP on DP) (1 slot occupied)	2	
• PCIe x4 adapter card for M.2 NVMe module without SSD (1 slot occupied) + PCIe x16 graphics card (3x mDP: 3x adapter mDP on DP) (1 slot occupied)	3	
• 512 GB SSD M.2 NVMe on PCIe x4 adapter card (1 slot occupied) (for operating system)	4	
• 512 GB SSD M.2 NVMe on PCIe x4 adapter card (1 slot occupied) (for operating system) + PCIe x16 graphics card (3x mDP: 3x adapter mDP on DP) (1 slot occupied)	5	
• 1 024 GB SSD M.2 NVMe on PCIe x4 adapter card (1 slot occupied) (for operating system)	6	
<u>Operating system (pre-installed and activated)</u>		
• Windows 10 Enterprise 2016 LTSB, multi-language (en, de, fr, it, sp), 64-bit (for Core i3/i5)	A	
• Windows 10 Enterprise 2016 LTSB, multi-language (en, de, fr, it, sp), 64-bit (for Core i7/Xeon)	B	
• Windows Server 2016 Standard Edition incl. 5 clients, 64-bit, MUI (en, de, fr, it, sp)	H	
• Without operating system	X	
<u>Software / adapters / security expansions</u>		
• SIMATIC IPC DiagMonitor software enclosed	A	
• SIMATIC IPC Image & Partition Creator software included	B	
• SIMATIC IPC DiagMonitor + Image & Partition Creator software enclosed	C	
• Adapter cable DP to VGA for onboard graphics	H	
• Adapter cable DP to DVI-D for onboard graphics	J	
• Without expansions	X	
• TPM ¹⁾ 2.0 (not for China)	Y	
<u>SIMATIC IPC847E</u>		
<u>Cables, country-specific versions</u>		
• Without power supply cord	0	
• Power supply cord for Europe	1	
• Power supply cord for USA	2	
• Power supply cord for China	3	
<u>Accessories</u>		
<u>Memory expansions</u>		
• 4 GB DDR4 2666 SDRAM, DIMM	6ES7648-2AL60-0QA0	
• 8 GB DDR4 2666 SDRAM, DIMM	6ES7648-2AL70-0QA0	
• 16 GB DDR4 2666 SDRAM, DIMM	6ES7648-2AL80-0QA0	
<u>Removable drive bay</u>	6ES7648-0EH00-1BA0	
for 3.5" hard disk or 2.5" solid-state drive, SATA (without hard disk drive/ solid-state drive)		
<u>Tower Kit</u>	6ES7648-1AA01-0XC0	
To convert the computer into an industrial tower PC		
<u>Retainer</u>	6ES7648-1AA00-0XK0	
For mechanically interlocking the internal USB port		
<u>Adapter cable</u>		
• DisplayPort to DVI-D for onboard graphics	6ES7648-3AF00-0XA0	
• DisplayPort to VGA for onboard graphics	6ES7648-3AG00-0XA0	
• miniDisplayPort to VGA for graphics card	6ES7648-3AL00-0XA0	
• miniDisplayPort to DVI-D for graphics card	6ES7648-3AK00-0XA0	
• miniDisplayPort to DVI-D for graphics card (3 per package)	6ES7648-3AK00-1XA0	
• miniDisplayPort to DisplayPort for graphics card	6ES7648-3AJ00-0XA0	
• miniDisplayPort to DisplayPort for graphics card (3 per package)	6ES7648-3AJ00-1XA0	

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

For an up-to-date overview, see the SIMATIC IPC online configurator at: <http://www.siemens.com/ipc-configurator>

Further information can be found on the Internet at:

<http://www.siemens.com/simatic-pc>

¹⁾ TPM = Trusted Platform Module

PC-based Automation

Industrial PC

Rack PC

SIMATIC IPC847D**Overview****SIMATIC IPC847D**

The SIMATIC IPC847D is an extremely robust, high-performance industrial PC in 19" rack design (4 U) with excellent industrial functionality.

It offers:

- Maximum expandability
- Extreme ruggedness
- Intel® Core® i / Xeon technology 4th generation

Technical specifications

Article number	6AG4114-2....-.... SIMATIC IPC847D (Rack PC)
Installation type/mounting	
Mounting	For horizontal and vertical installation; prepared for telescopic rails; 19" mounting bracket can be removed externally; tower kit (optional)
Design	Rack PC, 19", 4U
Supply voltage	
Type of supply voltage	100/240 V AC (autorange) 50 / 60 Hz; optional redundant 100/240 V AC; optional 100/240 V AC with UPS functionality incl. maintenance-free lead-tin battery
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 E3-1275 v3 (4C/8T, 3.5 (3.9) GHz, 8 MB cache); 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, mirror disks) + 1x 1 TB HDD as hot spare, RAID5 (3x 1 TB HDD, striping with parity), RAID5 (3x 1 TB HDD, striping with parity) + 1x 1 TB HDD as hot spare; RAID1 (2x 1 TB HDD SAS, mirror disks), RAID5 (3x 1 TB HDD SAS, striping with parity), RAID5 (3x 1 TB HDD SAS, striping with parity) + 1x 1 TB HDD SAS as hot spare incl. PCIe (x8) RAID SAS 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)

Technical specifications (continued)

Article number	6AG4114-2....-.... SIMATIC IPC847D (Rack PC)
Memory	
Main memory	2 GB to 32 GB DDR3 1600 DIMM, ECC optional
Hardware configuration	
Slots	
• free slots	11 slots: 7x PCI, 3x PCIe (x4) (1 lane), 1x PCIe (x16) or 3x PCI, 5x PCIe mech. (x16) (4x 4 lanes, 1x 8 lanes), 3x PCIe (x4); all modules to a length of 312 mm can be used
Interfaces	
Interfaces/bus type	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
PROFIBUS/MPI	Optionally onboard, isolated, max. 12 Mbit/s, no plug-in card necessary, CP 5622-compatible
USB port	2x USB 3.0, 2x USB 2.0 rear, 1x USB 3.0, 1x USB 2.0 front, 1x USB 3.0 internal
Connection for keyboard/mouse serial interface	2x PS/2 COM1: 1x RS 232, COM2 (optional): 1x RS 232
parallel interface	optional LPT1
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, ETHERNET 1, ETHERNET 2, PN MPI / DP, WATCHDOG, TEMP, FAN, HDD0 ALARM, HDD1 ALARM, HDD2 ALARM, HDD HDD3 ALARM
• Fan	Yes
• Monitoring function via network	Optional

Article number	6AG4114-2....-.... SIMATIC IPC847D (Rack PC)
EMC	
Interference immunity against discharge of static electricity	
• 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	
• 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

PC-based Automation

Industrial PC

Rack PC

SIMATIC IPC847D**Technical specifications** (continued)

Article number	6AG4114-2....-.... SIMATIC IPC847D (Rack PC)
Standards, approvals, certificates	
Approval	CE, cULus 60950, KCC
CE mark	Yes; For use in industrial areas as well as domestic, business and commercial environments (emitted interference: EN 61000-6-3:2007 +A1:2011, noise immunity: EN 61000-6-2:2005)
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	CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005
Dust protection	With front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered
Ambient conditions	
Ambient temperature during operation	
• Ambient temperature during operation	0 °C to +45 °C, no burner operation, 0 °C to +50 °C, no operation of optical drive, power dissipation of the expansion cards in total < 30 W, maximum 3 removable drive bays, 0 °C to +40 °C with AC UPS, 0 °C to +35 °C with hardware RAID controller
Relative humidity	
• 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 resistance during operation acc. to IEC 60068-2-6	Tested according to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.0375 mm, 58 Hz to 500 Hz: 4.9 m/s ² (0.5 g)
Shock testing	
• Shock load during operation	Tested according to IEC 60068-2-27, IEC 60068-2-29: half-sine: 50 m/s ² (5 g), 30 ms, 100 shocks per axis

Article number	6AG4114-2....-.... SIMATIC IPC847D (Rack PC)
Operating systems	
Operating system	Windows 7 Ultimate, multi-language (32-bit/64-bit), Windows 10 Enterprise 2015 LTSC, multi-language (64-bit), Windows 10 Enterprise 2016 LTSC, 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	177 mm; 4U
Depth	444 mm

Ordering data**Article No.****Article No.****SIMATIC IPC847D****6AG4114 - 2**

Interfaces: RACK PC, 19", 4 U
 Interfaces: 2 x GBIT LAN (RJ45);
 1 x DVI-I; 2 x DisplayPort;
 1 x COM; 2 x PS/2; audio;
 2 x USB 3.0, 2 x USB 2.0 at rear;
 1 x USB 3.0, 1 x USB 2.0 at front,
 1 x USB 3.0 internal; temperature
 and fan monitoring, watchdog,
 card retainer

Processor / main board

- Core i3-4330TE
(2C/4T, 2.4 GHz, 4 MB cache);
mainboard without fieldbus
- Core i3-4330TE
(2C/4T, 2.4 GHz, 4 MB cache,
VT-x); mainboard with PROFIBUS/
MPI (CP 5622-compatible)
- Core i3-4330TE
(2C/4T, 2.4 GHz, 4 MB cache);
mainboard with PROFINET
(3 x RJ45, CP 1616-compatible)
- Core i5-4570TE
(2C/4T, 2.7 (3.3) GHz,
4 MB cache, TB, VT-d, AMT);
mainboard without fieldbus
- Core i5-4570TE
(2C/4T, 2.7 (3.3) GHz,
4 MB cache, TB, VT-x, VT-d, AMT);
mainboard with PROFIBUS/MPI
(CP 5622-compatible)
- Core i5-4570TE
(2C/4T, 2.7 (3.3) GHz, 4 MB
cache, TB, VT-d, AMT);
mainboard with PROFINET
(3 x RJ45, CP 1616-compatible)
- Xeon E3-1268L v3
(4C/8T, 2.3 (3.3) GHz,
8 MB cache, TB, VT-d, AMT);
mainboard without fieldbus
- Xeon E3-1268L v3
(4C/8T, 2.3 (3.3) GHz,
8 MB cache, TB, VT-x, VT-d, AMT);
mainboard with PROFIBUS/MPI
(CP 5622-compatible)
- Xeon E3-1268L v3
(4C/8T, 2.3 (3.3) GHz, 8 MB
cache, TB, VT-d, AMT); mainboard
with PROFINET (3 x RJ45, CP
1616-compatible)
- Xeon E3-1275 v3
(4C/8T, 3.5 (3.9) GHz, 8 MB
cache, TB, VT-d, AMT);
mainboard without fieldbus
- Xeon E3-1275 v3
(4C/8T, 3.5 (3.9) GHz,
8 MB cache, TB, VT-x, VT-d, AMT);
mainboard with PROFIBUS/MPI
(CP 5622-compatible)
- Xeon E3-1275 v3
(4C/8T, 3.5 (3.9) GHz,
8 MB cache, TB, VT-d, AMT);
mainboard with PROFINET
(3 x RJ45, CP 1616-compatible)

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SIMATIC IPC847D**6AG4114 - 2**Drives

- 500 GB HDD SATA, internal
(0.3 g vibration, 3 g shock)
- 500 GB HDD SATA, internal
(0.5 g vibration, 5 g shock)
- 1 TB HDD SATA, internal
(0.5 g vibration, 5 g shock)
- 2 x 1 TB HDD SATA, internal
(0.5 g vibration, 5 g shock)
- RAID1, 1 TB (2 x 1 TB HDD SATA,
mirror disks), internal (0.5 g
vibration, 5 g shock)
- 500 GB HDD SATA in removable
drive bay; front
- 1 TB HDD SATA in removable
drive bay; front
- 2 x 1 TB HDD SAT in removable
drive bay; front
- RAID1, 1 TB (2 x 1 TB HDD SATA,
mirror disks) in removable drive
bay, hot-swappable, front;
- RAID5, 2 TB (3 x 1 TB HDD, SATA,
striping with parity) in removable
drive bay, hot-swappable, front
- RAID5, 2 TB (3 x 1 TB HDD, SATA,
striping with parity) in removable
drive bay, hot-swappable +
1 TB SATA HDD as hot spare in
remov. drive bay, front-mounted
- 240 GB SSD SATA, internal
- 240 GB SSD SATA in removable
drive bay; front
- RAID1, 1 TB (2 x 1 TB HDD SATA,
mirror disks), internal (0.5 g
vibration, 5 g shock) + 240 GB
SSD SATA (for operating system)
in removable drive bay
- RAID1, 1 TB (2 x 1 TB HDD, SATA,
mirror disks) in removable drive
bay, hot swap + 1 TB HDD SATA
as hot spare in removable drive
bay, front;
- RAID1, 1 TB (2 x 1 TB HDD SATA,
mirror disks) + 240 GB SSD SATA
(for operating system) in remov.
drive bay, hot-swap; front
- RAID1, 1 TB (2 x 1 TB HDD SAS,
mirror disks) in removable drive
bay, hot-swappable, front-mount-
ed; PCIe x8 RAID controller incl.
ZCMP module (2 slots occupied)
- RAID1, 1 TB (2 x 1 TB HDD SAS,
mirror disks) in removable drive
bay; PCIe x8 RAID controller
including ZCMP module (2 slots
occupied) + 240 GB SATA HDD
(for operating system) in remov.
drive bay, front-mounted
- RAID5, 2 TB (3 x 1 TB HDD SAS,
striping with parity) in removable
drive bay, hot-swappable, front-
mounted; PCIe x8 RAID controller
including ZCMP module
(2 slots occupied)
- RAID5, 2 TB (3 x 1 TB HDD SAS,
striping with parity) in removable
drive bay, hot-swappable;
PCIe x8 RAID controller including
ZCMP module (2 slots occupied)
+ 1 TB SATA HDD as hot-spare in
remov. drive bay, front-mounted
- RAID1, 240 GB (2 x 240 GB SSD
SATA, mirror disks), in removable
drive bay, hot swap, at the front

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PC-based Automation

Industrial PC

Rack PC

SIMATIC IPC847D

Ordering data

Article No.

SIMATIC IPC847D	6AG4114 - 2
Memory configuration	
• 2 GB DDR3 SDRAM (1 x 2 GB), single channel	1
• 4 GB DDR3 SDRAM (2 x 2 GB), dual channel	2
• 8 GB DDR3 SDRAM (2 x 4 GB), dual channel	3
• 16 GB DDR3 SDRAM (2 x 8 GB), dual channel	4
• 32 GB DDR3 SDRAM (4 x 8 GB), dual channel	5
• 8 GB DDR3 SDRAM, (2 x 4 GB), ECC, dual channel	6
• 16 GB DDR3 SDRAM, (2 x 8 GB), ECC, dual channel	7
• 32 GB DDR3 SDRAM, (4 x 8 GB), ECC, dual channel	8
Bus module / removable data storage media	
• Bus module 11-slot: 7 x PCI, 3 x PCIe x4, 1 x PCIe x16; without removable data storage media	0
• Bus module 11-slot: 3 x PCI, 3 x PCIe x4, 5 x PCIe x16; without removable data storage media	1
• Bus module 11-slot: 7 x PCI, 3 x PCIe x4, 1 x PCIe x16; DVD±RW (slim)	2
• Bus module 11-slot: 3 x PCI, 3 x PCIe x4, 5 x PCIe x16; DVD±RW (slim)	3
Expansion hardware	
• Without expansions (hardware), onboard graphics	0
• Without expansions (hardware), onboard graphics, DVI-I to VGA adapter for onboard graphics;	1
• Serial (COM2) + parallel (LPT) (1 slot reserved), onboard graphics	2
• Serial (COM2) + parallel (LPT) (1 slot reserved), onboard graphics, DVI-I to VGA adapter cable for onboard graphics	3
• Serial (COM2) + parallel (LPT, 1 slot reserved) + PCIe x16 Graphics Card (Dual-Head: 2 x VGA or 2 x DVI-D), 1 GB, (1 slot occupied)	4

Article No.

SIMATIC IPC847D	6AG4114 - 2
Operating system (pre-installed and activated)	
• Windows 7 Ultimate, 32-bit, SP1, MUI (en, de, fr, it, es)	A
• Windows 7 Ultimate, 64-bit, SP1, MUI (en, de, fr, it, es)	B
• Windows 10 Enterprise 2015, LTSB, 64-bit, MUI (en, de, fr, it, es)	C
• Windows 10 Enterprise 2016, LTSB, 64-bit, MUI (en, de, fr, it, es) (for Core i3/i5)	D
• Windows 10 Enterprise 2016, LTSB, 64-bit, MUI (en, de, fr, it, es) (for Xeon)	E
• Windows Server 2008 R2 Standard Edition, 64-bit SP1 incl. 5 clients, multi-language (en, de, fr, it, es)	F
• Windows Server 2012 R2 Standard Edition incl. 5 clients, MUI (en, de, fr, it, es), 64-bit	G
• Windows Server 2016 Standard Edition incl. 5 clients, MUI (en, de, fr, it, es), 64-bit language	H
• Without operating system	X
(Software) / security expansions	
• SIMATIC IPC DiagMonitor software enclosed	A
• SIMATIC IPC Image Creator software included	B
• SIMATIC IPC DiagMonitor and Image Creator software enclosed	C
• Without software (software)	X
• TPM 1.2 ¹⁾ (not for China and Russia)	Y
Power supply, with country-specific cable	
• 110/240 V AC industrial power supply with NAMUR; power cable for Europe	0
• 110/240 V AC industrial power supply with NAMUR; power cable for United Kingdom	1
• 110/240 V AC industrial power supply with NAMUR; power cable for Switzerland	2
• 110/240 V AC industrial power supply with NAMUR; power cable for the USA	3
• 110/240 V AC industrial power supply with NAMUR; power cable for Italy	4
• 110/240 V AC industrial power supply with NAMUR; power cable for China	5
• 2 x 110/240 V AC redundant power supply; without power cable	6
• 110/240 V AC industrial UPS including maintenance-free lead-tin battery; without network cable	7
• 110/240 V AC industrial power supply with NAMUR; without power cable	8

¹⁾ TPM = Trusted Platform Module

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

For an up-to-date overview, see the SIMATIC IPC online configurator at:

<http://www.siemens.com/ipc-configurator>

Ordering data	Article No.		Article No.
Accessories		Power cable, straight, 3 m long	
Memory expansions		<ul style="list-style-type: none"> • Austria, Belgium, Finland, France, Germany, Netherlands, Spain, Sweden • United Kingdom • Switzerland • USA • Italy • China 	6ES7900-0AA00-0XA0 6ES7900-0BA00-0XA0 6ES7900-0CA00-0XA0 6ES7900-0DA00-0XA0 6ES7900-0EA00-0XA0 6ES7900-0FA00-0XA0
<ul style="list-style-type: none"> • 2 GB DDR3 1600 DIMM • 4 GB DDR3 1600 DIMM • 8 GB DDR3 1600 DIMM • 8 GB DDR3 1600 DIMM, ECC 	6ES7648-2AJ50-0MA0 6ES7648-2AJ60-0MA0 6ES7648-2AJ70-0MA0 6ES7648-2AJ70-1MA0	Tower Kit	6ES7648-1AA00-0XD0
Hardware accessories		USB retainer	6ES7648-1AA00-0XK0
Tray for low-profile removable drive bay	6ES7648-0EG01-1BA0	for converting the computer into an industrial tower PC	
For 3.5" hard drive (SATA/SAS) and 2.5" SSD (SATA), without drive		Expansion components	See Expansion components
Filter mats	A5E01064980	for interlocking the internal USB port	
for SIMATIC IPC847D (packing unit: 10 units)		Communication products	See Expansion components
Adapter cable			
<ul style="list-style-type: none"> • DisplayPort to DVI-D for onboard graphics • DisplayPort to VGA for onboard graphics 	6ES7648-3AF00-0XA0 6ES7648-3AG00-0XA0		

Note:

Software Packages with SIMATIC WinCC flexible, WinCC RT Advanced, SIMATIC WinCC, and SIMATIC WinAC RTX (F) can be ordered together with the SIMATIC IPC at a price advantage. More information under "Embedded Bundles/Packages for industrial PCs".

Additional information is available on the Internet at:

<http://www.siemens.com/simatic-pc>

PC-based AutomationIndustrial PC
Rack PC**SIMATIC IPC1047****Overview****SIMATIC IPC1047**

SIMATIC IPC1047 is an industrial PC for maximum computing and graphic capacity requirements with expansive expandability in 19" installation design (4 U).

It offers:

- Maximum computing capacity due to two Intel® Xeon® CPUs
- Maximum graphic capacity
- High degree of expandability
- Product design for industrial environment

Technical specifications

Article number	6BK1800-1HA01-0AA0 SIMATIC IPC1047 - CPU (Rack PC)	6BK1800-1HA02-0AA0 SIMATIC IPC1047 - GPU (Rack PC)	6BK1800-1HA03-0AA0 SIMATIC IPC1047 - Virtualize (Rack PC)
Installation type/mounting			
Mounting	For horizontal rack mounting	For horizontal rack mounting	For horizontal rack mounting
Design	Rack PC, 19", 4U	Rack PC, 19", 4U	Rack PC, 19", 4U
Rack mounting	Yes	Yes	Yes
Supply voltage			
Type of supply voltage	100/240V AC (autorange) 50/60 Hz	100/240V AC (autorange) 50/60 Hz	AC redundant 100/240 V (autorange) 50 Hz/60 Hz
Line frequency			
• Rated value 50 Hz	Yes	Yes	Yes
• Rated value 60 Hz	Yes	Yes	Yes
Mains buffering			
• Mains/voltage failure stored energy time	20 ms	20 ms	20 ms
Processor			
Processor type	Xeon E5-2620 v4 (8C/16T, 2.1 (3.0) GHz, 20 MB cache)	Xeon E5-2620 v4 (8C/16T, 2.1 (3.0) GHz, 20 MB cache)	Xeon E5-2658 v4 (14C/28T, 2.3 (2.8) GHz, 35 MB cache)
Chipset	Intel PCH C612	Intel PCH C612	Intel PCH C612
Graphic			
Graphics controller	Onboard VGA / 2D controller 1 920 x 1 200 @ 60 Hz 32 bpp	NVIDIA Quadro P5000, 2 560 cores, 16 GB DDR5	Onboard VGA / 2D controller 1 920 x 1 200 @ 60 Hz 32 bpp
Drives			
Hard disk	1x 480 GB SSD	1x 480 GB SSD	1x 480 GB SSD, 4x 1.9 TB SSD
SSD	Yes	Yes	Yes
Memory			
Type of memory	DDR4-SDRAM DIMM	DDR4-SDRAM DIMM	DDR4-SDRAM DIMM
Main memory	32 GB, 2 400 MHz	32 GB, 2 400 MHz	128 GB, 2 400 MHz
Hardware configuration			
Slots			
• free slots	6 slots: 3x PCIe (x16), 3x PCIe (x8)	6 slots: 3x PCIe (x16), 3x PCIe (x8)	6 slots: 3x PCIe (x16), 3x PCIe (x8)
Interfaces			
USB port	4x USB 3.0: 2x on rear, 2x on front; 2x USB 2.0: 2x on rear	4x USB 3.0: 2x on rear, 2x on front; 2x USB 2.0: 2x on rear	4x USB 3.0: 2x on rear, 2x on front; 2x USB 2.0: 2x on rear
Integrated Functions			
Monitoring functions			
• Temperature monitoring	Yes	Yes	Yes
• Status LEDs	POWER, HDD, FAN Fail	POWER, HDD, FAN Fail	POWER, HDD, FAN Fail
• Fan	Yes	Yes	Yes
• Monitoring function via network	Yes (per IPMI)	Yes (per IPMI)	Yes (per IPMI)

Technical specifications (continued)

Article number	6BK1800-1HA01-0AA0 SIMATIC IPC1047 - CPU (Rack PC)	6BK1800-1HA02-0AA0 SIMATIC IPC1047 - GPU (Rack PC)	6BK1800-1HA03-0AA0 SIMATIC IPC1047 - Virtualize (Rack PC)
EMC			
Interference immunity against discharge of static electricity			
<ul style="list-style-type: none"> Interference immunity against discharge of static electricity 	±4 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2	±4 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2	±4 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			
<ul style="list-style-type: none"> Interference immunity against high frequency radiation 	10 V/m for 80 - 1 000 MHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3; 1 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 150 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6		
Interference immunity to cable-borne interference			
<ul style="list-style-type: none"> Interference immunity on supply cables Interference immunity on signal cables > 30 m Interference immunity on signal cables < 30 m 	±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	±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	±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 against voltage surge			
<ul style="list-style-type: none"> asymmetric interference symmetric interference 	±2 kV acc. to IEC 61000-4-5, surge asymmetric ±1 kV acc. to IEC 61000-4-5, surge symmetric	±2 kV acc. to IEC 61000-4-5, surge asymmetric ±1 kV acc. to IEC 61000-4-5, surge symmetric	±2 kV acc. to IEC 61000-4-5, surge asymmetric ±1 kV acc. to IEC 61000-4-5, surge symmetric
Interference immunity to magnetic fields			
<ul style="list-style-type: none"> Interference immunity to magnetic fields at 50 Hz 	100 A/m; to IEC 61000-4-8	100 A/m; to IEC 61000-4-8	100 A/m; to IEC 61000-4-8
Emission of conducted and non-conducted interference			
<ul style="list-style-type: none"> 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	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	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)	IP30	IP30	IP30
IP (rear)	IP20	IP20	IP20
Standards, approvals, certificates			
Approval	CE, cULus 60950	CE, cULus 60950	CE, cULus 60950
CE mark	Yes; For use in industrial areas as well as domestic, business and commercial environments (emitted interference: EN 61000-6-3:2007 +A1:2011, noise immunity: EN 61000-6-2:2005)	Yes; For use in industrial areas as well as domestic, business and commercial environments (emitted interference: EN 61000-6-3:2007 +A1:2011, noise immunity: EN 61000-6-2:2005)	Yes; For use in industrial areas as well as domestic, business and commercial environments (emitted interference: EN 61000-6-3:2007 +A1:2011, noise immunity: EN 61000-6-2:2005)
CSA approval	Yes	Yes	Yes
cULus	Yes	Yes	Yes
FCC	Yes	Yes	Yes
EMC	CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005	CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005	CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005
Dust protection	With front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered	With front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered	With front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered

PC-based Automation

Industrial PC

Rack PC

SIMATIC IPC1047

Technical specifications (continued)

Article number	6BK1800-1HA01-0AA0 SIMATIC IPC1047 - CPU (Rack PC)	6BK1800-1HA02-0AA0 SIMATIC IPC1047 - GPU (Rack PC)	6BK1800-1HA03-0AA0 SIMATIC IPC1047 - Virtualize (Rack PC)
Ambient conditions			
Ambient temperature during operation			
<ul style="list-style-type: none"> Ambient temperature during operation 	0 °C to +50 °C in basic configuration; 0 °C to +40 °C in maximum configuration	0 to +40 °C	0 to +40 °C
Relative humidity			
<ul style="list-style-type: none"> Relative humidity 	Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5 % to 85 % at 30 °C (no condensation), storage / transport: 5 % to 95 % at 25 / 55 °C (no condensation)		
Vibrations			
<ul style="list-style-type: none"> Vibration resistance during operation acc. to IEC 60068-2-6 	Tested according to IEC 60068-2-6, 10 cycles; 20 to 58 Hz: 0.015 mm; 58 to 200 Hz: 2 m/s ² (0.2 g)		
Shock testing			
<ul style="list-style-type: none"> Shock load during operation 	Tested according to IEC 60068-2-27; half-sine: 9.8 m/s ² (1 g), 20 ms, 100 shocks per axis	Tested according to IEC 60068-2-27; half-sine: 9.8 m/s ² (1 g), 20 ms, 100 shocks per axis	Tested according to IEC 60068-2-27; half-sine: 9.8 m/s ² (1 g), 20 ms, 100 shocks per axis
Operating systems			
Operating system	Windows 7 Professional x64 bit	Windows 7 Professional x64 bit	Windows Server 2012 R2
pre-installed operating system	Yes	Yes	No
pre-installed operating system			
<ul style="list-style-type: none"> Windows 7 	Yes	Yes	Yes
Dimensions			
Width	430 mm	430 mm	430 mm
Height	176.6 mm; 4U	176.6 mm; 4U	176.6 mm; 4U
Depth	572 mm	572 mm	572 mm

Ordering data

SIMATIC IPC1047

SIMATIC IPC1047 CPU

- 2x Intel Xeon E5-2620v4; 32 GB DDR4 ECC SDRAM;
- 1x system-SSD 480 GB;
- 2x Gbit Ethernet, IPMI, RJ45
- 1x VGA, 1x COM 1, TPM1.2
- 2x USB 3.0, 2x USB rear; 2x USB 3.0 front
- WIN 7 Professional x64bit
- ATX power supply 860 W; temp. and fan monitoring
- SW RAID onboard

6BK1800-1HA01-0AA0

SIMATIC IPC1047 GPU

- 2x Intel Xeon E5-2620v4; 32 GB DDR4 ECC SDRAM;
- 1x system SSD 480 GB;
- 1x GPU NVIDIA P5000;
- 2x Gbit Ethernet, IPMI, RJ45; 1x VGA, 1x COM 1, TPM1.2;
- 2x USB 3.0, 2x USB rear; 2x USB 3.0 front
- WIN 7 Professional x64bit
- ATX power supply 860 W; temp. and fan monitoring
- SW RAID onboard

6BK1800-1HA02-0AA0

Article No.

SIMATIC IPC1047 Virtualize

- 2x Intel Xeon E5-2658v4; 128 GB DDR4 ECC SDRAM
- 1x system-SSD 480 GB;
- 4x DATA-SSD 1.9TB
- 2x Gbit Ethernet, IPMI, RJ45; 1x VGA, 1x COM 1, TPM1.2;
- 2x USB 3.0, 2x USB rear; 2x USB 3.0 front
- Windows Server 2012 R2
- 700 W redundant power supply; temp. and fan monitoring
- HW RAID controller

6BK1800-1HA03-0AA0

Note:

Request customized configurations via Siemens Customized Automation.

Further information can be found on the Internet at:

<http://www.siemens.com/simatic-pc>