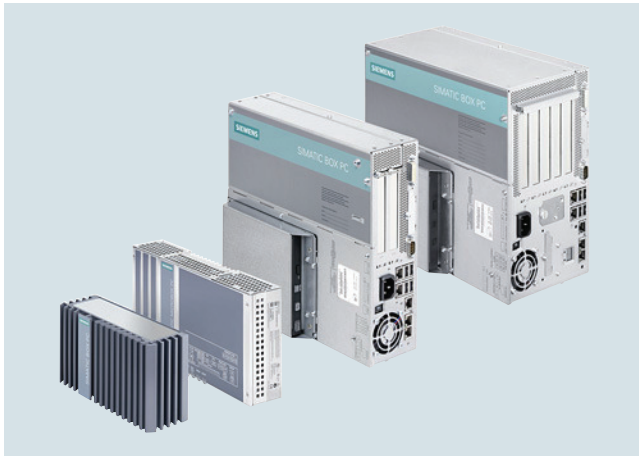


Overview



SIMATIC Box PCs provide mechanical engineers, plant engineers and control cabinet makers with particularly rugged industrial PC systems for use in powerful yet compact applications.

The following device classes are available for various requirements:

- SIMATIC IPC227 (Nanobox PC): The Box PC with optimized performance in compact design – maintenance-free and rugged
- SIMATIC IPC427 (Microbox PC): The powerful embedded IPC – maintenance-free with versatile configuration
- SIMATIC IPC627/IPC827 (Box PC): The high-end IPC – with maximum performance, functional scope, and expansion capability

Shared industrial functionality:

- Extreme compactness
- Certification for global marketing
- System-tested with SIMATIC components
- High vibration/shock load during operation
- Wide operational temperature range
- Robust data storage with CompactFlash/CFast or solid-state drive (SSD)
- Varied mounting possibilities for flexibility with installation
- Designed for 24-hour continuous operation
- Integrated parameterizable monitoring functions (temperature, fan, watchdog)
- High service friendliness
- Operating system pre-installed and activated for fast startup
- Motherboard developed and manufactured by Siemens
- Availability for 3 to 6 years
- Repairs and spare parts service for 5 years
- High component/design continuity
- Long-term availability of PC components from the Intel embedded line

SIMATIC IPC227 (Nanobox PC): The Box PC with optimized performance in compact design – maintenance-free and rugged

- Maximum compactness with approx. 1 liter enclosure volume with integrated industrial power supply for minimum space requirements in the control cabinet
- Maximum flexibility thanks to several mounting options and interfaces on one side suitable for every installation situation
- Optimum variety of interfaces due to a large number of integrated interfaces such as a selectable serial connection and 2 x teaming-capable Gigabit-Ethernet
- Maximum industrial functionality due to closed enclosure for optimum dust protection and non-volatile retentive memory
- Further device options for optimum adaptation to the application with additional PCIe slot

SIMATIC IPC427 (Microbox PC): The powerful embedded IPC – maintenance-free with versatile configuration

- Fan-free operation
- High performance with maximum compactness and ruggedness for direct installation in the machine
- Optimized for embedded applications
- Flexibility expandable using one or two PCIe I/O cards (optional)
- Flexible installation options including standard rail/wall/front upright mounting, even outside control cabinets
- NVRAM for retentive data storage (optional)

SIMATIC IPC627/IPC827 (Box PC): The high-end IPC – with maximum performance, functional scope, and expansion capability

- Maximum system performance for complex measuring, control and visualization tasks
- High flexibility with expansion slots and integral interfaces
- Flexible, space-saving installation with mounting brackets or portrait assembly kits
- Rugged design for direct installation in the machine
- RAID1 controller onboard
- Maximum processor performance up to an ambient temperature of 55 °C
- High system availability
- Buffered SRAM as memory for WinAC data
- 4 signaling LEDs

PC-based Automation

Box PC

Introduction

Technical specifications

Article number	6ES7647-8B...-.... SIMATIC IPC227E (NANOBOX PC)	6AG4022-0A...-.... SIMATIC IPC327E	6AG4141-.....-.... SIMATIC IPC427E (MicroBOX PC)	6AG4131-2....-.... SIMATIC IPC627D (BOX PC)	6AG4132-2....-.... SIMATIC IPC827D (BOX PC)
Installation type/mounting					
Mounting	DIN rail, wall mounting, portrait mounting	Standard mounting rail, wall mounting (horizontal and vertical)	DIN rail, wall mounting, portrait mounting	Wall mounting, portrait mounting	Wall mounting, portrait mounting
Design	Box PC, built-in unit	Box PC, built-in unit	Box PC, built-in unit	Box PC, built-in unit	Box PC, built-in unit
Supply voltage					
Type of supply voltage	24 V DC	24 V DC	24 V DC	100/240 V AC (autorange); 24 V DC	100/240 V AC (autorange); 24 V DC
Line frequency					
<ul style="list-style-type: none"> Rated value 50 Hz Rated value 60 Hz 				Yes Yes	Yes Yes
Mains buffering					
<ul style="list-style-type: none"> Mains/voltage failure stored energy time 	20 ms	10 ms		20 ms	20 ms
Processor					
Processor type	Intel Celeron N2807 / N2930	Intel Celeron N3160	Celeron G3902 (2C/2T, 1.6 GHz, 2 MB Cache); Core i3-6102E (2C/4T, 1.9 GHz, 3 MB Cache); Core i5-6442EQ (4C/4T, 1.9 (2.7) GHz, 6 MB Cache, iAMT); Xeon E3-1505L v5 (4C/8T, 2.0 (2.8) GHz, 8 MB Cache, iAMT)	Celeron G1820TE (2C/2T, 2.2 GHz, 2 MB Cache); Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache); Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache, AMT)	Celeron G1820TE (2C/2T, 2.2 GHz, 2 MB Cache); Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache); Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache, AMT)
Chipset				Intel DH82C226 PCH	Intel DH82C226 PCH
Graphic					
Graphics controller			Intel HD graphics controller	Intel HD graphics controller P4600 GT2 (Xeon, Core i3); Intel HD graphics controller (Celeron)	Intel HD graphics controller P4600 GT2 (Xeon, Core i3); Intel HD graphics controller (Celeron)
Drives					
Optical drives				DVD±R±RW combi-drive, optional	DVD±R±RW combi-drive, optional
Hard disk	2.5" SATA ≥ 320 GB	500 GB HDD	2.5" SATA ≥ 320 GB	3.5" SATA ≥ 500 GB, optional; 3.5" SATA ≥ 1 TB; RAID1 2x 2.5" SATA ≥ 320 GB; solid-state drive (SSD) ≥ 240 GB; all hard disk drives within the enclosure are vibration-damped; RAID1 2x 2.5" SATA ≥ 320 GB byte in removable drive bay	3.5" SATA ≥ 500 GB, optional; 3.5" SATA ≥ 1 TB; RAID1 2x 2.5" SATA ≥ 320 GB; solid-state drive (SSD) ≥ 240 GB; all hard disk drives within the enclosure are vibration-damped; RAID1 2x 2.5" SATA ≥ 320 GB byte in removable drive bay
SSD	Yes; ≥ 80 GB optional	Yes; 256 GB SSD	Yes; 1x 80 GB, 1x 240 GB SSD, 1x 480 GB SSD	Yes; ≥ 240 GB optional	Yes; ≥ 240 GB optional
Memory					
Type of memory	DDR3L	DDR3L	DDR4 SO-DIMM	DDR3 1600 DIMM	DDR3 1600 DIMM
Main memory	2 / 4 / 8 GB	4 GB, 8 GB	4 GB to 16 GB, ECC optional	2 / 4 / 8 / 16 GB; ECC optional	2 / 4 / 8 / 16 GB; ECC optional

Technical specifications (continued)

Article number	6ES7647-8B...-.... SIMATIC IPC227E (NANOBOX PC)	6AG4022-0A...-.... SIMATIC IPC327E	6AG4141-.....-.... SIMATIC IPC427E (MicroBOX PC)	6AG4131-2.....-.... SIMATIC IPC627D (BOX PC)	6AG4132-2.....-.... SIMATIC IPC827D (BOX PC)
Data areas and their retentivity					
Retentive data area (incl. timers, counters, flags), max.	512 kbyte; 128 KB can be stored in the buffer time; optional		512 kbyte; 128 KB can be stored in the buffer time; optional	2 Mbyte; 128 KB can be stored in the buffer time; optional	2 Mbyte; 128 KB can be stored in the buffer time; optional
Hardware configuration					
Slots					
• free slots	1x PCIe x1 (optional)	1x mPCIe (half-size), 1x mSATA (full-size)	2x PCIe; optional: 1x PCIe (x4); 2x PCIe (x1, x4), with card retainer	2x PCI; optional: 1x PCI & 1x PCIe (x16); 2x PCIe (x4, x16); with card retainer	3x PCI, 1x PCIe (x4), 1x PCIe (x16); with card retainer
Interfaces					
PROFIBUS/MPI				Optionally onboard, isolated, max. 12 Mbit/s, compatible with CP 5622	Optionally onboard, isolated, max. 12 Mbit/s, compatible with CP 5622
Number of industrial Ethernet interfaces		2; 2x RJ45 (independent)	3; Ethernet (2x RJ45, optional 3x RJ45)	2; 2x RJ45 (independent)	2; 2x RJ45 (independent)
Number of PROFINET interfaces				3; Optional	3; Optional
USB port	1x USB 3.0 / 3x USB 2.0	4x USB 2.0, 2x USB 3.0 (high current)	4x USB 3.0	4x USB 3.0	4x USB 3.0
Connection for keyboard/mouse serial interface	USB / USB Without / 2x COM (RS 232 / 422 / 485), selectable in the BIOS	6x COM (4x RS 232, 2x RS 232 / 422 / 485 switchable)	USB / USB Without / 2x COM (RS 232 / RS 485 / RS 422; switchable)	USB / USB 1x COM1 (RS 232), optional: 1x COM2 (RS 232)	USB / USB 1x COM1 (RS 232), optional: 1x COM2 (RS 232)
parallel interface				optional LPT1	optional LPT1
Video interfaces					
• Graphics interface	1x DisplayPort	1x DisplayPort, 1x VGA	2x DisplayPort	1x DisplayPort and 1x DVI-I; 1x VGA via adapter cable (optional)	1x DisplayPort and 1x DVI-I; 1x VGA via adapter cable (optional)
Industrial Ethernet					
• Industrial Ethernet interface	Onboard, 2x 10 / 100 / 1000 Mbit, RJ45	2 x Ethernet (RJ45)	3x Ethernet (RJ45)	Onboard, 2x 10 / 100 / 1000 Mbit, RJ45	Onboard, 2x 10 / 100 / 1000 Mbit, RJ45
- 100 Mbps	Yes	Yes	Yes	Yes	Yes
- 1000 Mbps	Yes	Yes	Yes	Yes	Yes
Protocols					
Protocols (Ethernet)					
• TCP/IP		Yes			
Integrated Functions					
Monitoring functions					
• Temperature monitoring	Yes	Yes	Yes	Yes	Yes
• Watchdog	Yes	Yes	Yes	Yes	Yes
• Status LEDs	Yes	POWER, HDD	Yes	Yes	Yes
• Fan	No	No	No	Yes	Yes
• Monitoring function via network	Optional		Optional	Optional	Optional

PC-based Automation

Box PC

Introduction

Technical specifications (continued)

Article number	6ES7647-8B...-.... SIMATIC IPC227E (NANOBOX PC)	6AG4022-0A...-.... SIMATIC IPC327E	6AG4141-.....-.... SIMATIC IPC427E (MicroBOX PC)	6AG4131-2.....-.... SIMATIC IPC627D (BOX PC)	6AG4132-2.....-.... SIMATIC IPC827D (BOX PC)
EMC					
Interference immunity against discharge of static electricity					
<ul style="list-style-type: none"> Interference immunity against discharge of static electricity Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 <ul style="list-style-type: none"> - Test voltage at air discharge - Test voltage at contact discharge 	±6 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2	±6 kV contact; ±8 kV air (to IEC 1000-4-2; ESD)	±6 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2	±6 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2	±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 - 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	10 V/m for 80 ... 1 000 MHz, 80 % AM according to IEC 61000-4-3; 3 V/m for 1.4 ... 6 GHz, 80 % AM according to IEC 61000-4-3	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	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	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					
<ul style="list-style-type: none"> Interference immunity on supply cables Interference immunity on signal cables >30m Interference immunity on signal cables < 30m 	±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 (according to IEC 61000-4-4, burst); ±1 kV (according to IEC 61000-4-5, surge pulse/line to line); ±2 kV (according to IEC 61000-4-5, surge pulse/line to ground)	±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	±2 kV acc. to IEC 61000-4-5, surge asymmetric	±2 kV acc. to IEC 61000-4-5, surge asymmetric	±2 kV acc. to IEC 61000-4-5, surge asymmetric	±2 kV acc. to IEC 61000-4-5, surge asymmetric
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	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, EN 61000-6-4, CISPR 22 Class B, FCC Class A		EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A	EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A	EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A
Degree and class of protection					
IP (at the front)	IP40		IP20	IP20	IP20
IP (rear)	IP40		IP20	IP20	IP20

Technical specifications (continued)

Article number	6ES7647-8B...-.... SIMATIC IPC227E (NANOBOX PC)	6AG4022-0A...-.... SIMATIC IPC327E	6AG4141-...-.... SIMATIC IPC427E (MicroBOX PC)	6AG4131-2...-.... SIMATIC IPC627D (BOX PC)	6AG4132-2...-.... SIMATIC IPC827D (BOX PC)
Standards, approvals, certificates					
CE mark	Yes	Yes	Yes	Yes	Yes
UL approval	Yes	Yes	Yes	Yes	Yes
• UL 508	Yes		Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes	Yes
KC approval	Yes		Yes	Yes	Yes
EAC (formerly Gost-R)		Yes			
FCC	Yes	Yes	Yes	Yes	Yes
EMC	CE, EN 61000-6-4:2007, EN 61000-6-2:2005		CE, EN 55022A, EN 61000-6-4, EN 61000-6-2	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	Protection against foreign bodies > 1 mm				
Marine approval					
• Germanischer Lloyd (GL)	Yes			Yes	Yes
• American Bureau of Shipping (ABS)	Yes			Yes	Yes
• Bureau Veritas (BV)	Yes			Yes	Yes
• Det Norske Veritas (DNV)	Yes			Yes	Yes
• Lloyds Register of Shipping (LRS)	Yes			Yes	Yes
• Nippon Kaiji Kyokai (Class NK)	Yes			Yes	Yes
Ambient conditions					
Ambient temperature during operation					
• Ambient temperature during operation	0 °C up to 60 °C	0 °C to 50 °C	0 °C to +55 °C	+5 °C up to 55 °C	+5 °C up to 55 °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)	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)	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)	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)	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 to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8 m/s ² (1 g)	Tested to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8 m/s ² (1 g)	Tested to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8 m/s ² (1 g)	Tested according to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm; 58 Hz to 500 Hz 9.8 m/s ² (1g)	Tested according to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm; 58 Hz to 500 Hz 9.8 m/s ² (1g)
Shock testing					
• Shock load during operation	Tested according to IEC 60068-2-27: 150 m/s ² , 11 ms	Tested in accordance with IEC 60068-2-27: With SSD: 150 m/s ² , 11 ms; with HDD: 9.8 m/s ² , 20 ms	Tested to DIN IEC 60068-2-29: 50 m/s ² (5 g), 30 ms, 100 shocks	Tested to DIN IEC 60068-2-29: 50 m/s ² (5 g), 30 ms, 100 shocks	Tested to DIN IEC 60068-2-29: 50 m/s ² (5 g), 30 ms, 100 shocks

PC-based Automation

Box PC

Introduction

Technical specifications (continued)

Article number	6ES7647-8B...-.... SIMATIC IPC227E (NANOBOX PC)	6AG4022-0A...-.... SIMATIC IPC327E	6AG4141-.....-.... SIMATIC IPC427E (MicroBOX PC)	6AG4131-2....-.... SIMATIC IPC627D (BOX PC)	6AG4132-2....-.... SIMATIC IPC827D (BOX PC)
Operating systems					
Operating system	Windows 7 Ultimate 32-bit / 64-bit, MUI; Windows Embedded Standard 7 E/P, 32-bit / 64-bit	Windows 7 Ultimate (Multi-Language), 64-bit; Windows 10 Enterprise 2016 LTSP, 64-bit	Windows 7 Ultimate (Multi-Language) 64-bit, Windows Embedded Standard 7 E/P 32-bit / 64-bit, Windows 10	Windows 7 Ultimate, 32-bit/64-bit, MUI; Windows Embedded Standard 7 P, 32-bit, MUI; Windows 10 Enterprise 2015 or 2016 LTSP, 64-bit, MUI	Windows 7 Ultimate, 32-bit/64-bit, MUI; Windows Embedded Standard 7 P, 32-bit, MUI; Windows 10 Enterprise 2015 or 2016 LTSP, 64-bit, MUI
pre-installed operating system without operating system	Yes Yes	Yes Yes; Optional	Yes Yes	Yes Yes	Yes Yes
pre-installed operating system					
• Windows 7	Yes; Ultimate 32 bits or 64 bits		Yes; Ultimate 32 bits or 64 bits	Yes; Ultimate 32 bits or 64 bits	Yes; Ultimate 32 bits or 64 bits
• Windows 10 IoT Enterprise	Yes; Windows 10 Enterprise 2016 LTSP, 64-bit, MUI		Yes; Windows 10 IoT Enterprise 2016 LTSP (64-bit) MUI	Yes; Windows 10 Enterprise 2015 or 2016 LTSP, 64-bit, MUI	Yes; Windows 10 Enterprise 2015 or 2016 LTSP, 64-bit, MUI
Software					
SIMATIC Software	Optional package with SIMATIC WinCC or WinAC RTX		Optionally with pre-installed SIMATIC WinCC RT Advanced / Software Controller / CPU 1500S software bundle	Optional package with SIMATIC WinCC or WinAC RTX	Optional package with SIMATIC WinCC or WinAC RTX
Dimensions					
Width	191 mm	254 mm	262 mm	312 mm	312 mm
Height	100 mm	140 mm	139.7 mm	81 mm; with DVD drive: 105 mm	155 mm; With DVD drive: 179 mm
Depth	60 mm	75 mm	55.5 mm	301 mm; incl. mounting rail	301 mm; incl. mounting rail

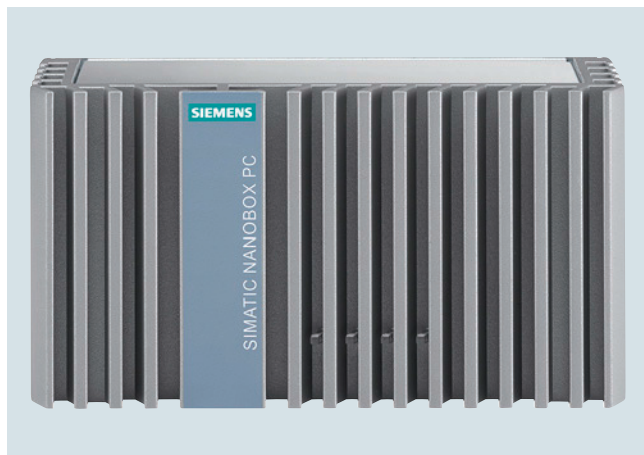
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More information

More information is available on the Internet at:
<http://www.siemens.com/simatic-pc>

Information material can be ordered or downloaded from the Internet:
<http://www.siemens.com/simatic/printmaterial>

Overview



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

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

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

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

Technical specifications

Article number	6ES7647-8B...-.... SIMATIC IPC227E (NANOBOX PC)
Installation type/mounting	
Mounting	DIN rail, wall mounting, portrait mounting
Design	Box PC, built-in unit
Supply voltage	
Type of supply voltage	24 V DC
Mains buffering	
• Mains/voltage failure stored energy time	20 ms
Processor	
Processor type	Intel Celeron N2807 / N2930
Drives	
Hard disk	2.5" SATA ≥ 320 GB
SSD	Yes; ≥ 80 GB optional
Memory	
Type of memory	DDR3L
Main memory	2 / 4 / 8 GB
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	512 kbyte; 128 KB can be stored in the buffer time; optional
Hardware configuration	
Slots	
• free slots	1x PCIe x1 (optional)
Interfaces	
USB port	1x USB 3.0 / 3x USB 2.0
Connection for keyboard/mouse serial interface	USB / USB Without / 2x COM (RS 232 / 422 / 485), selectable in the BIOS
Video interfaces	
• Graphics interface	1x DisplayPort
Industrial Ethernet	
• Industrial Ethernet interface	Onboard, 2x 10 / 100 / 1000 Mbit, RJ45
- 100 Mbps	Yes
- 1000 Mbps	Yes
Integrated Functions	
Monitoring functions	
• Temperature monitoring	Yes
• Watchdog	Yes
• Status LEDs	Yes
• Fan	No
• Monitoring function via network	Optional

PC-based Automation

Box PC

SIMATIC IPC227E

Technical specifications (continued)

Article number	6ES7647-8B...-.... SIMATIC IPC227E (NANOBOX 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 - 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	
<ul style="list-style-type: none"> Interference immunity on supply cables Interference immunity on signal cables >30m Interference immunity on signal cables < 30m 	±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 61000-4-5, surge, length > 30 m ±1 kV acc. to IEC 61000-4-4; burst; length < 3 m; ±2 kV acc. to IEC 61000-4-4; burst; length > 3 m
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
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, CISPR 22 Class B, FCC Class A
Degree and class of protection	
IP (at the front)	IP40
IP (rear)	IP40

Article number	6ES7647-8B...-.... SIMATIC IPC227E (NANOBOX PC)
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes
<ul style="list-style-type: none"> UL 508 	Yes
cULus	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
FCC	Yes
EMC	CE, EN 61000-6-4:2007, EN 61000-6-2:2005
Dust protection	Protection against foreign bodies > 1 mm
Marine approval	
<ul style="list-style-type: none"> Germanischer Lloyd (GL) American Bureau of Shipping (ABS) Bureau Veritas (BV) Det Norske Veritas (DNV) Lloyds Register of Shipping (LRS) Nippon Kaiji Kyokai (Class NK) 	Yes Yes Yes Yes Yes Yes
Ambient conditions	
Ambient temperature during operation	
<ul style="list-style-type: none"> Ambient temperature during operation 	0 °C up to 60 °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 80% at 25 °C (no condensation), Storage: 5% to 95% at 25 °C (no condensation)
Vibrations	
<ul style="list-style-type: none"> Vibration resistance during operation acc. to IEC 60068-2-6 	Tested to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8 m/s ² (1 g)
Shock testing	
<ul style="list-style-type: none"> Shock load during operation 	Tested according to IEC 60068-2-27: 150 m/s ² , 11 ms
Operating systems	
Operating system	Windows 7 Ultimate 32-bit / 64-bit, MUI; Windows Embedded Standard 7 E/P, 32-bit / 64-bit
pre-installed operating system	Yes
without operating system	Yes
pre-installed operating system	
<ul style="list-style-type: none"> Windows 7 Windows 10 IoT Enterprise 	Yes; Ultimate 32 bits or 64 bits Yes; Windows 10 Enterprise 2016 LTSB, 64-bit, MUI
Software	
SIMATIC Software	Optional package with SIMATIC WinCC or WinAC RTX
Dimensions	
Width	191 mm
Height	100 mm
Depth	60 mm

Ordering data	Article No.	Article No.	
SIMATIC IPC227E	6ES7647- 8 B	SIMATIC IPC227E	
<u>Processor</u>		<u>Mass storage</u>	
<ul style="list-style-type: none"> • Celeron N2807 (2C/2T) • Celeron N2930 (4C/4T) • Celeron N2807 (2C/2T)/TPM (not for China) • Celeron N2930 (4C/4T)/TPM (not for China) 	A B C D	<ul style="list-style-type: none"> • Without • 240 GB SSD • 480 GB SSD • 4 GB CFast • 8 GB CFast • 16 GB CFast • 30 GB CFast • 320 GB HDD 	A C D K L M N R
<u>Work memory/NVRAM</u>		<u>Software</u>	
<ul style="list-style-type: none"> • 2 GB • 4 GB • 8 GB • 2 GB/NVRAM • 4 GB/NVRAM • 8 GB/NVRAM 	1 2 3 4 5 6	<ul style="list-style-type: none"> • Without SIMATIC software • CPU 1507S • WinCC RT Advanced V14, 128 PT (V15 license package) • WinCC RT Advanced V14, 512 PT (V15 license package) • WinCC RT Advanced V14, 2 048 PT (V15 license package) • WinCC RT Advanced V14, 4 096 PT (V15 license package) • CPU 1507S/WinCC RT Advanced V14, 128 PT (V15 license package) • CPU 1507S/WinCC RT Advanced V14, 512 PT (V15 license package) • CPU 1507S/WinCC RT Advanced V14, 2 048 PT (V15 license package) • CPU 1507S/WinCC RT Advanced V14, 4 096 PT (V15 license package) 	A B D E F G J K L M
<u>Device version/interface</u>		<u>Mounting accessories</u>	
<ul style="list-style-type: none"> • Basis without COM • Basis with COM1/2 • PCIe without COM • PCIe with COM1/2 	1 2 3 4	<ul style="list-style-type: none"> • Standard mounting rail • Wall mounting • Portrait mounting • Standard mounting rail with ATEX/IECEx Cat 3G Zone 2/cULus Class I Div. 2 • Wall mounting with ATEX/IECEx Cat 3G Zone 2/cULus Class I Div. 2 • Portrait mounting with ATEX/IECEx Cat 3G Zone 2/cULus Class I Div. 2 	1 2 3 4 5 6
<u>Operating system</u>			
<ul style="list-style-type: none"> • Without OS • Windows Embedded Standard 7 E SP1, English, 32-bit • Windows Embedded Standard 7 E SP1, English, 64-bit • Windows Embedded Standard 7 P SP1, English, 32-bit • Windows Embedded Standard 7 P SP1, English, 64-bit • Windows 7 Ultimate SP1, 32-bit, MUI (en, de, fr, it, es) • Windows 7 Ultimate SP1, 64-bit, MUI (en, de, fr, it, es) • Windows 10 IoT Enterprise 2016 LTSB, 64-bit, MUI (en, de, fr, it, es) 	0 1 2 3 4 5 6 7		



Note:

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

Additional information is available on the Internet at:

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

PC-based Automation

Box PC

SIMATIC IPC327E

Overview



SIMATIC IPC327E

Based on Intel Celeron process technology, the SIMATIC IPC327E Box PC represents a new IPC platform which has been specifically developed for cost-optimized, PC-based applications in industrial and industry-oriented environments.

It is above all distinguished by a large number of interfaces for easy connection to existing and new systems, fast availability from stock as well as a fanless industrial design.

Technical specifications

Article number	6AG4022-0A...-.... SIMATIC IPC327E
Installation type/mounting	
Mounting	Standard mounting rail, wall mounting (horizontal and vertical)
Design	Box PC, built-in unit
Supply voltage	
Type of supply voltage	24 V DC
Mains buffering	
• Mains/voltage failure stored energy time	10 ms
Processor	
Processor type	Intel Celeron N3160
Drives	
Hard disk	500 GB HDD
SSD	Yes; 256 GB SSD
Memory	
Type of memory	DDR3L
Main memory	4 GB, 8 GB
Hardware configuration	
Slots	
• free slots	1x mPCIe (half-size), 1x mSATA (full-size)
Interfaces	
Number of industrial Ethernet interfaces	2; 2x RJ45 (independent)
USB port	4x USB 2.0, 2x USB 3.0 (high current)
serial interface	6x COM (4x RS 232, 2x RS 232 / 422 / 485 switchable)
Video interfaces	
• Graphics interface	1x DisplayPort, 1x VGA
Industrial Ethernet	
• Industrial Ethernet interface	2 x Ethernet (RJ45)
- 100 Mbps	Yes
- 1000 Mbps	Yes
Protocols	
Protocols (Ethernet)	
• TCP/IP	Yes
Integrated Functions	
Monitoring functions	
• Temperature monitoring	Yes
• Watchdog	Yes
• Status LEDs	POWER, HDD
• Fan	No

Technical specifications (continued)

Article number	6AG4022-0A...-.... SIMATIC IPC327E
EMC	
Interference immunity against discharge of static electricity	
<ul style="list-style-type: none"> Interference immunity against discharge of static electricity Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 - Test voltage at air discharge - Test voltage at contact discharge 	<ul style="list-style-type: none"> ±6 kV contact; ±8 kV air (to IEC 1000-4-2; ESD) 8 kV 6 kV
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 according to IEC 61000-4-3; 3 V/m for 1.4 ... 6 GHz, 80 % AM according to IEC 61000-4-3
Interference immunity to cable-borne interference	
<ul style="list-style-type: none"> Interference immunity on supply cables Interference immunity on signal cables >30m Interference immunity on signal cables < 30m 	<ul style="list-style-type: none"> ±2 kV (according to IEC 61000-4-4, burst); ±1 kV (according to IEC 61000-4-5, surge pulse/line to line); ±2 kV (according to IEC 61000-4-5, surge pulse/line to ground) ±2 kV acc. to IEC 61000-4-4, burst; ±2 kV acc. to IEC 61000-4-5, surge ±1 kV acc. to IEC 61000-4-4, Burst
Interference immunity against voltage surge	
<ul style="list-style-type: none"> asymmetric interference symmetric interference 	<ul style="list-style-type: none"> ±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

Article number	6AG4022-0A...-.... SIMATIC IPC327E
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes
cULus	Yes
RCM (formerly C-TICK)	Yes
EAC (formerly Gost-R)	Yes
FCC	Yes
Ambient conditions	
Ambient temperature during operation	
<ul style="list-style-type: none"> Ambient temperature during operation 	0 °C to 50 °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 to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8 m/s ² (1 g)
Shock testing	
<ul style="list-style-type: none"> Shock load during operation 	Tested in accordance with IEC 60068-2-27: With SSD: 150 m/s ² , 11 ms; with HDD: 9.8 m/s ² , 20 ms
Operating systems	
Operating system	Windows 7 Ultimate (Multi-Language), 64-bit; Windows 10 Enterprise 2016 LTSB, 64-bit
pre-installed operating system	Yes
without operating system	Yes; Optional
Dimensions	
Width	254 mm
Height	140 mm
Depth	75 mm

PC-based Automation

Box PC

SIMATIC IPC327E

Ordering data

Article No.

SIMATIC IPC327E

1 x display port graphic
1 x VGA port graphic
2x 10/100/1 000 Mbps
Ethernet RJ45
2 x USB 3.0; 4 x USB 2.0;
6 x serial ports (COM)

Processor

- Celeron N3160 (4C/4T)

A

Work memory

- 4 GB RAM
- 8 GB RAM

2

3

Expansions/interface

- 1x mPCIe / 1x mSata

1

Operating system

- Without operating system
- Windows Ultimate SP1,
64-bit MUI (en, de, fr, it, es)

0

1

Drives

- Without
- 500 GB HDD
- 256 GB SSD

A

B

C

Power supply

- 24 V DC

A

Mounting accessories

- Installation, VESA installation

1

Ordering data	Article No.
SIMATIC IPC327E	6AG4022- 0 A
1 x display port graphic 1 x VGA port graphic 2x 10/100/1 000 Mbps Ethernet RJ45 2 x USB 3.0; 4 x USB 2.0; 6 x serial ports (COM)	
Processor	
• Celeron N3160 (4C/4T)	A
Work memory	
• 4 GB RAM	2
• 8 GB RAM	3
Expansions/interface	
• 1x mPCIe / 1x mSata	1
Operating system	
• Without operating system	0
• Windows Ultimate SP1, 64-bit MUI (en, de, fr, it, es)	1
Drives	
• Without	A
• 500 GB HDD	B
• 256 GB SSD	C
Power supply	
• 24 V DC	A
Mounting accessories	
• Installation, VESA installation	1

Article No.

Preferred variants (available ex stock)

SIMATIC IPC327E

• Configuration 1

Intel Celeron Quad-Core N3160
(1.6 GHz);
500 GB HDD SATA, internal;
4 GB RAM (1 x 4 GB);
without operating system;
24 V DC;
interfaces: 2 x Gbit Ethernet
(RJ45), 6 x USB 2.0; 2 x USB 3.0;
6 x serial, 1 x Display Port,
1 x VGA, audio

6AG4022-0AA21-0BA1

• Configuration 2

Intel Celeron Quad-Core N3160
(1.6 GHz);
500 GB HDD SATA, internal;
4 GB RAM (1 x 4 GB);
Windows 7 Ultimate 64-bit;
24 V DC;
interfaces: 2 x Gbit Ethernet
(RJ45), 6 x USB 2.0; 2 x USB 3.0;
6 x serial, 1 x Display Port,
1 x VGA, audio

6AG4022-0AA21-1BA1

• Configuration 3

Intel Celeron Quad-Core N3160
(1.6 GHz);
256 GB SSD, internal;
4 GB RAM (1 x 4 GB);
without operating system;
24 V DC;
interfaces: 2 x Gbit Ethernet
(RJ45), 6 x USB 2.0; 2 x USB 3.0;
6 x serial, 1 x Display Port,
1 x VGA, audio

6AG4022-0AA21-0CA1

• Configuration 4

Intel Celeron Quad-Core N3160
(1.6 GHz);
256 GB SSD, internal;
4 GB RAM (1 x 4 GB);
Windows 7 Ultimate 64-bit;
24 V DC;
interfaces: 2 x Gbit Ethernet
(RJ45), 6 x USB 2.0; 2 x USB 3.0;
6 x serial, 1 x Display Port,
1 x VGA, audio

6AG4022-0AA21-1CA1

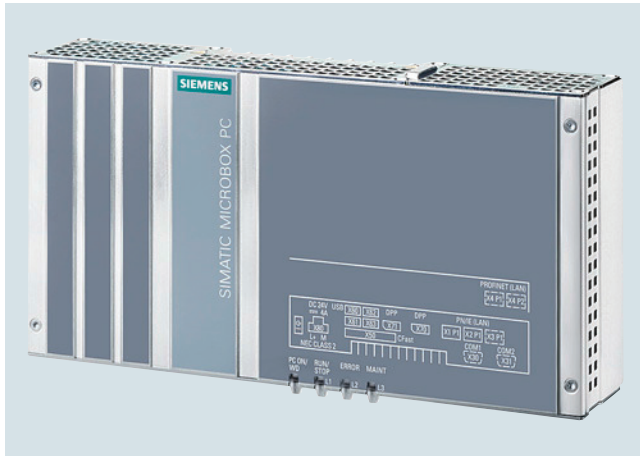
Note:

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

Additional information is available on the Internet at:

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

Overview



SIMATIC IPC427E (Microbox PC): The powerful embedded IPC – maintenance-free with versatile configuration

Ready-to-run, complete solution:

- Ultra-compact
- Maintenance-free
- Intel Core i technology of the sixth Generation

Technical specifications

Article number	6AG4141-.....-..... SIMATIC IPC427E (MicroBOX PC)
Installation type/mounting	
Mounting	DIN rail, wall mounting, portrait mounting
Design	Box PC, built-in unit
Supply voltage	
Type of supply voltage	24 V DC
Processor	
Processor type	Celeron G3902 (2C/2T, 1.6 GHz, 2 MB Cache); Core i3-6102E (2C/4T, 1.9 GHz, 3 MB Cache); Core i5-6442EQ (4C/4T, 1.9 (2.7) GHz, 6 MB Cache, iAMT); Xeon E3-1505L v5 (4C/8T, 2.0 (2.8) GHz, 8 MB Cache, iAMT)
Graphic	
Graphics controller	Intel HD graphics controller
Drives	
Hard disk	2.5" SATA ≥ 320 GB
SSD	Yes; 1x 80 GB, 1x 240 GB SSD, 1x 480 GB SSD
Memory	
Type of memory	DDR4 SO-DIMM
Main memory	4 GB to 16 GB, ECC optional
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	512 kbyte; 128 KB can be stored in the buffer time; optional
Hardware configuration	
Slots	
• free slots	2x PCIe; optional: 1x PCIe (x4); 2x PCIe (x1, x4), with card retainer

PC-based Automation

Box PC

SIMATIC IPC427E

Technical specifications (continued)

Article number	6AG4141-.....-.... SIMATIC IPC427E (MicroBOX PC)
Interfaces	
Number of industrial Ethernet interfaces	3; Ethernet (2x RJ45, optional 3x RJ45)
USB port	4x USB 3.0
Connection for keyboard/mouse serial interface	USB / USB Without / 2x COM (RS 232 / RS 485 / RS 422; switchable)
Video interfaces	
• Graphics interface	2x DisplayPort
Industrial Ethernet	
• Industrial Ethernet interface	3x Ethernet (RJ45)
- 100 Mbps	Yes
- 1000 Mbps	Yes
Integrated Functions	
Monitoring functions	
• Temperature monitoring	Yes
• Watchdog	Yes
• Status LEDs	Yes
• Fan	No
• Monitoring function via network	Optional
EMC	
Interference immunity against discharge of static electricity	
• Interference immunity against discharge of static electricity	±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 61000-4-5, surge, length > 30 m
• Interference immunity on signal cables < 30m	±1 kV acc. to IEC 61000-4-4; burst; length < 3 m; ±2 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, CISPR 22 Class B, FCC Class A
Degree and class of protection	
IP (at the front)	IP20
IP (rear)	IP20

Article number	6AG4141-.....-.... SIMATIC IPC427E (MicroBOX PC)
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes
• UL 508	Yes
cULus	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
FCC	Yes
EMC	CE, EN 55022A, EN 61000-6-4, EN 61000-6-2
Ambient conditions	
Ambient temperature during operation	
• Ambient temperature during operation	0 °C to +55 °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)
Vibrations	
• Vibration resistance during operation acc. to IEC 60068-2-6	Tested to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8 m/s ² (1 g)
Shock testing	
• Shock load during operation	Tested to DIN IEC 60068-2-29: 50 m/s ² (5 g), 30 ms, 100 shocks
Operating systems	
Operating system	Windows 7 Ultimate (Multi-Language) 64-bit, Windows Embedded Standard 7 E/P 32-bit / 64-bit, Windows 10
pre-installed operating system	Yes
without operating system	Yes
pre-installed operating system	
• Windows 7	Yes; Ultimate 32 bits or 64 bits
• Windows 10 IoT Enterprise	Yes; Windows 10 IoT Enterprise 2016 LTSB (64-bit) MUI
Software	
SIMATIC Software	Optionally with pre-installed SIMATIC WinCC RT Advanced / Software Controller CPU 1500S software bundle
Dimensions	
Width	262 mm
Height	139.7 mm
Depth	55.5 mm

Ordering data	Article No.	Article No.	Ordering data	Article No.
SIMATIC IPC427E (Box PC) ¹⁾	6AG4141-		SIMATIC IPC427E (Box PC) ¹⁾	6AG4141-
<u>Processor and fieldbus</u>			<u>Mass storage, externally accessible</u>	
• Celeron G3902E; 2 x Gigabit Ethernet (IE/PN)	0		• Without external mass storage	0
• Celeron G3902E; 3 x Gigabit Ethernet (IE/PN)	1		• CFast 2 GB without operating system	1
• Core i3-6102E; 3 x Gigabit Ethernet (IE/PN)	3		• CFast 4 GB without operating system	2
• Core i5-6442EQ; 3 x Gigabit Ethernet (IE/PN)	5		• CFast 8 GB (only optionally with operating system/software if no internal mass storage or HDD)	3
• Xeon E3-1505L; 3 x Gigabit Ethernet (IE/PN)	7		• CFast 16 GB (only optionally with operating system/software if no internal mass storage or HDD)	4
			• CFast 30 GB (only optionally with operating system/software if no internal mass storage or HDD)	5
<u>Mounting accessories/ATEX</u>			<u>Mass storage, internal</u>	
• Standard mounting rail	B		• Without internal mass storage	A
• Wall mounting	C		• CFast 8 GB	B
• Portrait mounting	D		• CFast 16 GB	C
• Standard mounting rail with ATEX/IECEx Cat 3G Zone 2 / cULus Class I Div. 2	F		• CFast 30 GB	D
• Wall mounting with ATEX/IECEx Cat 3G Zone 2 / cULus Class I Div. 2	G		• 240 GB solid-state drive SATA	F
• Portrait mounting with ATEX/IECEx Cat 3G Zone 2 / cULus Class I Div. 2	H		• 480 GB solid-state drive SATA	G
			• 320 GB HDD	J
<u>Work memory/NVRAM/ECC</u>			<u>SIMATIC software (bundles)</u>	
• 4 GB	A		• Without SIMATIC software	A
• 8 GB	B		• CPU 1507S	B
• 16 GB	C		• WinCC RT Advanced V14 SP1, 128 PT	C
• 8 GB with ECC	D		• WinCC RT Advanced V14 SP1, 512 PT	D
• 16 GB with ECC	E		• WinCC RT Advanced V14 SP1, 2 048 PT	E
• 4 GB and NVRAM	F		• WinCC RT Advanced V14 SP1, 4 096 PT	F
• 8 GB and NVRAM	G		• WinCC RT Advanced V14 SP1, 8 192 PT	G
• 16 GB and NVRAM	H		• CPU 1507S / WinCC RT Advanced V14 SP1, 128 PT	H
• 8 GB with ECC and NVRAM	J		• CPU 1507S / WinCC RT Advanced V14 SP1, 512 PT	J
• 16 GB with ECC and NVRAM	K		• CPU 1507S / WinCC RT Advanced V14 SP1, 2 048 PT	K
			• CPU 1507S / WinCC RT Advanced V14 SP1, 4 096 PT	L
			• CPU 1507S / WinCC RT Advanced V14 SP1, 8 192 PT	M
<u>Expansions/interface</u>			<u>Power supply</u>	
• No RS 232/RS 485, without PCIe	0		• 24 V DC industrial power supply	0
• No RS 232/RS 485 and one PCIe	1		• 24 V DC and TPM ²⁾	8
• No RS 232/RS 485 and two PCIe	2		(not for China or Russia)	
• Two RS 232/RS 485, without PCIe	3			
• Two RS 232/RS 485 and one PCIe	4			
• Two RS 232/RS 485 and two PCIe	5			
<u>Operating system</u>				
• Without operating system	0			
• Windows Embedded Standard 7 SP1, English, 32-bit	1			
• Windows Embedded Standard 7 SP1, English, 64-bit	2			
• Windows Embedded Standard 7 SP1, English, 64-bit, multi-touch	3			
• Windows 7 Ultimate SP1, 64-bit, MUI (en, de, fr, it, es)	4			
• Windows 10 Enterprise 2016 LTSB (64-bit) for Celeron, Core i3 and Core i5 processors	7			
• Windows 10 Enterprise 2016 LTSB (64-bit) for Xeon processors	8			

¹⁾ For an up-to-date overview, see the SIMATIC PC online configurator:
<http://www.siemens.com/ipc-configurator>

²⁾ TPM = Trusted Platform Module

PC-based Automation

Box PC

SIMATIC IPC427D

Overview



SIMATIC IPC427D (Microbox PC): The powerful embedded IPC – maintenance-free with versatile configuration

Ready-to-run, complete solution:

- Ultra-compact
- Maintenance-free
- Intel Core i-technology of the third Generation.

4

Technical specifications

Article number	6AG4140-.....0 SIMATIC IPC427D (MICROBOX PC)	6AG4140-.....8 SIMATIC IPC427D (Microbox PC) with TPM
Installation type/mounting		
Mounting	DIN rail, wall mounting, portrait mounting	DIN rail, wall mounting, portrait mounting
Design	Box PC, built-in unit	Box PC, built-in unit
Supply voltage		
Type of supply voltage	24 V DC	24 V DC
Processor		
Processor type	Celeron 827E (1C/1T, 1.40 GHz, 1.5 MB Cache); Core i3-3217UE (2C/4T, 1.60 GHz, 3 MB Cache); Core i7-3517UE (2C/4T, 1.70 (2.80) GHz, 4 MB Cache, iAMT)	Celeron 827E (1C/1T, 1.40 GHz, 1.5 MB Cache); Core i3-3217UE (2C/4T, 1.60 GHz, 3 MB Cache); Core i7-3517UE (2C/4T, 1.70 (2.80) GHz, 4 MB Cache, iAMT)
Graphic		
Graphics controller	Intel HD Graphics, Intel HD Graphics 4000	Intel HD Graphics, Intel HD Graphics 4000
Drives		
Hard disk SSD	2.5" SATA ≥ 320 GB Yes; 1x 80 GB, 1x 240 GB SSD, 1x 480 GB SSD	2.5" SATA ≥ 320 GB Yes; 1x 80 GB, 1x 240 GB SSD, 1x 480 GB SSD
Memory		
Type of memory	DDR3 SO-DIMM	DDR3 SO-DIMM
Main memory	1 / 2 / 4 / 8 GB; ECC optional	1 / 2 / 4 / 8 GB; ECC optional
Data areas and their retentivity		
Retentive data area (incl. timers, counters, flags), max.	512 kbyte; 128 KB can be stored in the buffer time; optional	512 kbyte; 128 KB can be stored in the buffer time; optional
Hardware configuration		
Slots		
• free slots	2x PCIe; optional: 1x PCIe (x4); 2x PCIe (x1, x4), with card retainer	2x PCI; optional: 1x PCI & 1x PCIe (x16); 2x PCIe (x4, x16); with card retainer
Interfaces		
PROFIBUS/MPI	onboard, isolated, max. 12 Mbit/s, CP 5611-compatible	onboard, isolated, max. 12 Mbit/s, CP 5611-compatible
Number of PROFINET interfaces	1; 3 ports (incl. switch)	1; 3 ports (incl. switch)
USB port	4x USB 3.0	4x USB 3.0
Connection for keyboard/mouse	USB / USB	USB / USB
serial interface	COM1: 1x RS 232, COM2 (optional): 1x RS 232	COM1: 1x RS 232, COM2 (optional): 1x RS 232
Video interfaces		
• Graphics interface	1x DisplayPort and 1x DVI-I; 1x VGA via adapter cable (optional)	1x DisplayPort and 1x DVI-I; 1x VGA via adapter cable (optional)
Industrial Ethernet		
• Industrial Ethernet interface	Onboard, 2 x 10/100/1000 Mbit/s, RJ45, no plug-in card necessary	Onboard, 2 x 10/100/1000 Mbit/s, RJ45, no plug-in card necessary
- 100 Mbps	Yes	Yes
- 1000 Mbps	Yes	Yes

Technical specifications (continued)

Article number	6AG4140-.....-...0	6AG4140-.....-...8
	SIMATIC IPC427D (MICROBOX PC)	SIMATIC IPC427D (Microbox PC) with TPM
Integrated Functions		
Monitoring functions		
• Temperature monitoring	Yes	Yes
• Watchdog	Yes	Yes
• Status LEDs	Yes	Yes
• Monitoring function via network	Optional	Optional
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	±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	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	±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 61000-4-5, surge, length > 30 m	±2 kV acc. to IEC 61000-4-5, surge, length > 30 m
• Interference immunity on signal cables < 30m	±1 kV acc. to IEC 61000-4-4; burst; length < 3 m; ±2 kV acc. to IEC 61000-4-4; burst; length > 3 m	±1 kV acc. to IEC 61000-4-4; burst; length < 3 m; ±2 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	±2 kV acc. to IEC 61000-4-5, surge asymmetric
• symmetric interference	±1 kV acc. to IEC 61000-4-5, surge symmetric	±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	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, CISPR 22 Class B, FCC Class A	EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A
Degree and class of protection		
IP (at the front)	IP20	IP20
IP (rear)	IP20	IP20

Article number	6AG4140-.....-...0	6AG4140-.....-...8
	SIMATIC IPC427D (MICROBOX PC)	SIMATIC IPC427D (Microbox PC) with TPM
Standards, approvals, certificates		
CE mark	Yes	Yes
UL approval	Yes	Yes
• UL 508	Yes	Yes
cULus	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes
KC approval	Yes	Yes
FCC	Yes	Yes
EMC	CE, EN 55022A, EN 61000-6-4, EN 61000-6-2	
Marine approval		
• Germanischer Lloyd (GL)	Yes	Yes
• American Bureau of Shipping (ABS)	Yes	Yes
• Bureau Veritas (BV)	Yes	Yes
• Det Norske Veritas (DNV)	Yes	Yes
• Lloyds Register of Shipping (LRS)	Yes	Yes
• Nippon Kaiji Kyokai (Class NK)	Yes	Yes
Ambient conditions		
Ambient temperature during operation		
• Ambient temperature during operation	0 °C to +55 °C	0 °C to +55 °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)	
Vibrations		
• Vibration resistance during operation acc. to IEC 60068-2-6	Tested to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8 m/s ² (1 g)	Tested to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8 m/s ² (1 g)
Shock testing		
• Shock load during operation	Tested to DIN IEC 60068-2-29: 50 m/s ² (5 g), 30 ms, 100 shocks	Tested to DIN IEC 60068-2-29: 50 m/s ² (5 g), 30 ms, 100 shocks
Operating systems		
Operating system	Windows 7 Ultimate (Multi-Language) 32-bit / 64-bit, Windows Embedded Standard 7 E/P 32-bit / 64-bit	Windows 7 Ultimate (Multi-Language) 32-bit / 64-bit, Windows Embedded Standard 7 E/P 32-bit / 64-bit
pre-installed operating system	Yes	Yes
without operating system	Yes	Yes
pre-installed operating system		
• Windows 7	Yes; Ultimate 32 bits or 64 bits	Yes; Ultimate 32 bits or 64 bits
Software		
SIMATIC Software	Optionally with pre-installed software bundle SIMATIC WinCC RT Advanced / WinAC RTX	
Dimensions		
Width	262 mm	262 mm
Height	139.7 mm	139.7 mm
Depth	50.5 mm	50.5 mm

PC-based Automation

Box PC

SIMATIC IPC427D

Ordering data

Article No.

Article No.

SIMATIC IPC427D (Box PC) ¹⁾²⁾

6AG4140 - ■ ■ ■ ■ ■ - ■ ■ ■ ■ ■

Processor and fieldbus

- Celeron U827E (1C/1T, 1.4 GHz, 1.5 MB cache); 2 x Gigabit Ethernet (IE/PN) **0**
- Celeron U827E (1C/1T, 1.4 GHz, 1.5 MB cache); 2 x Gigabit Ethernet (IE/PN); PROFIBUS DP12 **1**
- Celeron U827E (1C/1T, 1.4 GHz, 1.5 MB cache); 2 x Gigabit Ethernet (IE/PN); CAN interface **2**
- Core i3-3217UE (2C/4T, 1.6 GHz, 3 MB cache); 2 x Gigabit Ethernet (IE/PN) **3**
- Core i3-3217UE (2C/4T, 1.6 GHz, 3 MB cache); 2 x Gigabit Ethernet (IE/PN); PROFIBUS DP12 **4**
- Core i3-3217UE (2C/4T, 1.6 GHz, 3 MB cache); 1 x Gigabit Ethernet (IE/PN); 1 x PROFINET (IRT, 3 ports) **5**
- Core i7-3517UE (2C/4T, 1.7 (2.8) GHz, 4 MB cache); 2 x Gigabit Ethernet (IE/PN) (optional ECC only here) **6**
- Core i7-3517UE (2C/4T, 1.7 (2.8) GHz, 4 MB cache); 2 x Gigabit Ethernet (IE/PN); PROFIBUS DP12 **7**
- Core i7-3517UE (2C/4T, 1.7 (2.8) GHz, 4 MB cache); 1 x Gigabit Ethernet (IE/PN); 1 x PROFINET (IRT, 3 ports) **8**

Mounting accessories:

- Without mounting accessories **A**
- Standard mounting rail **B**
- Wall mounting **D**
- Portrait mounting **E**
- Standard mounting rail with ATEX/IECEX Cat 3G Zone 2/cULus Class I Div. 2 **M**
- Wall mounting with ATEX/IECEX Cat 3G Zone 2/cULus Class I Div. 2 **N**
- Portrait mounting with ATEX/IECEX Cat 3G Zone 2/cULus Class I Div. 2 **P**

Work memory/NVRAM/ECC:

- 2 GB **B**
- 4 GB **C**
- 8 GB **D**
- 4 GB with ECC (only with Core i7, 2 x Gigabit Ethernet (IE/PN)) **G**
- 8 GB with ECC (only with Core i7, 2 x Gigabit Ethernet (IE/PN)) **H**
- 2 GB and NVRAM **K**
- 4 GB and NVRAM **L**
- 8 GB and NVRAM **M**
- 4 GB with ECC and NVRAM (only with Core i7, 2 x Gigabit Ethernet (IE/PN)) **N**
- 8 GB with ECC and NVRAM (only with Core i7, 2 x Gigabit Ethernet (IE/PN)) **P**

SIMATIC IPC427D (Box PC) ¹⁾²⁾

6AG4140 - ■ ■ ■ ■ ■ - ■ ■ ■ ■ ■

Expansions/interface:

- One RS 232, without PCIe **0**
- One RS 232 and one PCIe **1**
- One RS 232 and two PCIe **2**
- Second RS 232, without PCIe **3**
- Second RS 232 and one PCIe **4**
- Second RS 232 and second PCIe **5**

Operating system:

- Without operating system **0**
- Windows Embedded Standard 7 Professional, 32-bit, MUI **3**
- Windows Embedded Standard 7 SP1, English, 32-bit **4**
- Windows Embedded Standard 7 SP1, English, 64-bit **5**
- Windows 7 Ultimate SP1, 32-bit, MUI (en, de, fr, it, es) **6**
- Windows 7 Ultimate SP1, 64-bit, MUI (en, de, fr, it, es) **7**

Mass storage, externally accessible:

- Without external mass storage **0**
- CFast 2 GB Without operating system **1**
- CFast 4 GB (only optionally with operating system if no internal mass storage) **2**
- CFast 8 GB (only optionally with operating system if no internal mass storage) **3**
- CFast 16 GB (only optionally with operating system if no internal mass storage) **4**

Internal mass storage:

- Without internal mass storage **A**
- CFast 2 GB, without software **B**
- CFast 4 GB, without software **C**
- CFast 8 GB, without software **D**
- CFast 16 GB, without software **E**
- 320 GB HDD **K**
- 240 GB solid-state drive (standard) **P**
- 480 GB solid-state drive (standard) **R**

Ordering data	Article No.
SIMATIC IPC427D (Box PC) ¹⁾²⁾	6AG4140- - - - -
<u>SIMATIC software pre-installed (bundles, only with Windows Embedded Standard 7):</u>	
• Without SIMATIC software	A
• WinAC RTX 2010 ³⁾	B
• WinCC RT Advanced, 128 PT (V15 license package)	C
• WinCC RT Advanced, 512 PT (V15 license package)	D
• WinCC RT Advanced, 2 048 PT (V15 license package)	E
• WinCC RT Advanced, 4 096 PT (V15 license package)	F
• WinCC RT Advanced, 128 PT (V15 license package), WinAC RTX 2010 ³⁾	J
• WinCC RT Advanced, 512 PT (V15 license package), WinAC RTX 2010 ³⁾	K
• WinCC RT Advanced, 2 048 PT (V15 license package), WinAC RTX 2010 ³⁾	L
• WinCC RT Advanced, 4 096 PT (V15 license package), WinAC RTX 2010 ³⁾	M
• WinAC RTX F 2010 ³⁾	N
• WinCC RT Advanced, 128 PT (V15 license package), WinAC RTX F 2010 ³⁾	P
• WinCC RT Advanced, 512 PT (V15 license package), WinAC RTX F 2010 ³⁾	Q
• WinCC RT Advanced, 2 048 PT (V15 license package), WinAC RTX F 2010 ³⁾	R
• WinCC RT Advanced, 4 096 PT (V15 license package), WinAC RTX F 2010 ³⁾	S
<u>Power supply:</u>	
• 24 V DC industrial power supply	0
• 24 V DC and TPM ⁴⁾ (not for China or Russia)	8

¹⁾ Built to order versions with a delivery time of max. 15 working days and with identified repair, if not preferred type.

²⁾ For an up-to-date overview, see the SIMATIC PC online configurator at: <http://www.siemens.com/ipc-configurator>

³⁾ Only with "work memory and NVRAM".

⁴⁾ TPM = Trusted Platform Module

Note:

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

Bundles with SIMATIC software only with Windows Embedded Standard 7, work memory and NVRAM (with RTX and RTX F), and CFast mass storage of 4 GB or more/SSD.

PC-based Automation

Box PC

SIMATIC IPC627D

Overview



IPC627D with DVD drive

SIMATIC IPC627D (Box PC): The high-end IPC – with maximum performance, functional scope and expansion capability

It offers:

- Maximum performance in the smallest space
- Intel Xeon technology
- Removable hard disks (RAID1)

Technical specifications

Article number	6AG4131-2....-.... SIMATIC IPC627D (BOX PC)
Installation type/mounting	
Mounting	Wall mounting, portrait mounting
Design	Box PC, built-in unit
Supply voltage	
Type of supply voltage	100/240 V AC (autorange); 24 V DC
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	Celeron G1820TE (2C/2T, 2.2 GHz, 2 MB Cache); Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache); Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache, AMT)
Chipset	Intel DH82C226 PCH
Graphic	
Graphics controller	Intel HD graphics controller P4600 GT2 (Xeon, Core i3); Intel HD graphics controller (Celeron)
Drives	
Optical drives	DVD±R±RW combi-drive, optional
Hard disk	3.5" SATA ≥ 500 GB, optional: 3.5" SATA ≥ 1 TB; RAID1 2x 2.5" SATA ≥ 320 GB; solid-state drive (SSD) ≥ 240 GB; all hard disk drives within the enclosure are vibration-damped; RAID1 2x 2.5" SATA ≥ 320 GB byte in removable drive bay
SSD	Yes; ≥ 240 GB optional
Memory	
Type of memory	DDR3 1600 DIMM
Main memory	2 / 4 / 8 / 16 GB; ECC optional
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	2 Mbyte; 128 KB can be stored in the buffer time; optional
Hardware configuration	
Slots	
• free slots	2x PCI; optional: 1x PCI & 1x PCIe (x16); 2x PCIe (x4, x16); with card retainer

Technical specifications (continued)

Article number	6AG4131-2....-.... SIMATIC IPC627D (BOX PC)
Interfaces	
PROFIBUS/MPI	Optionally onboard, isolated, max. 12 Mbit/s, compatible with CP 5622
Number of industrial Ethernet interfaces	2; 2x RJ45 (independent)
Number of PROFINET interfaces	3; Optional
USB port	4x USB 3.0
Connection for keyboard/mouse serial interface	USB / USB
parallel interface	1x COM1 (RS 232), optional: 1x COM2 (RS 232)
	optional LPT1
Video interfaces	
• Graphics interface	1x DisplayPort and 1x DVI-I; 1x VGA via adapter cable (optional)
Industrial Ethernet	
• Industrial Ethernet interface	Onboard, 2x 10 / 100 / 1000 Mbit, RJ45
- 100 Mbps	Yes
- 1000 Mbps	Yes
Integrated Functions	
Monitoring functions	
• Temperature monitoring	Yes
• Watchdog	Yes
• Status LEDs	Yes
• Fan	Yes
• Monitoring function via network	Optional
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 61000-4-5, surge, length > 30 m
• Interference immunity on signal cables < 30m	±1 kV acc. to IEC 61000-4-4; burst; length < 3 m; ±2 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

Article number	6AG4131-2....-.... SIMATIC IPC627D (BOX PC)
Emission of conducted and non-conducted interference	
• Interference emission via line/AC current cables	EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A
Degree and class of protection	
IP (at the front)	IP20
IP (rear)	IP20
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes
• UL 508	Yes
cULus	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
FCC	Yes
EMC	CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005
Marine approval	
• Germanischer Lloyd (GL)	Yes
• American Bureau of Shipping (ABS)	Yes
• Bureau Veritas (BV)	Yes
• Det Norske Veritas (DNV)	Yes
• Lloyds Register of Shipping (LRS)	Yes
• Nippon Kaiji Kyokai (Class NK)	Yes
Ambient conditions	
Ambient temperature during operation	
• Ambient temperature during operation	+5 °C up to 55 °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)
Vibrations	
• Vibration resistance during operation acc. to IEC 60068-2-6	Tested according to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm; 58 Hz to 500 Hz 9.8 m/s ² (1g)
Shock testing	
• Shock load during operation	Tested to DIN IEC 60068-2-29: 50 m/s ² (5 g), 30 ms, 100 shocks
Operating systems	
Operating system	Windows 7 Ultimate, 32-bit/64-bit, MUI; Windows Embedded Standard 7 P, 32-bit, MUI; Windows 10 Enterprise 2015 or 2016 LTSB, 64-bit, MUI
pre-installed operating system	Yes
without operating system	Yes
pre-installed operating system	
• Windows 7	Yes; Ultimate 32 bits or 64 bits
• Windows 10 IoT Enterprise	Yes; Windows 10 Enterprise 2015 or 2016 LTSB, 64-bit, MUI
Software	
SIMATIC Software	Optional package with SIMATIC WinCC or WinAC RTX
Dimensions	
Width	312 mm
Height	81 mm; with DVD drive: 105 mm
Depth	301 mm; incl. mounting rail

Ordering data	Article No.
Accessories	
Memory expansion	
• 2 GB DDR3 1600 SDRAM, DIMM	6ES7648-2AJ50-0MA0
• 4 GB DDR3 1600 SDRAM, DIMM	6ES7648-2AJ60-0MA0
• 8 GB DDR3 1600 SDRAM, DIMM	6ES7648-2AJ70-0MA0
• 8 GB DDR3 1600 SDRAM, DIMM, ECC	6ES7648-2AJ70-1MA0
Assembly kit for portrait mounting	
• Upward or downward interface outlet	6ES7648-1AA10-1YA0
• Interface outlet to the front	6ES7648-1AA10-1YB0
SIMATIC PC graphics adapter cable	
DVI-I acc. to VGA, 250 mm long	6ES7648-3AB00-0XA0
SIMATIC PC power cable	
For Box PC and Panel PC, 230 V AC, angled, 3 m	
• For Germany, France, Spain, the Netherlands, Belgium, Sweden, Austria, Finland	6ES7900-1AA00-0XA0
• For United Kingdom	6ES7900-1BA00-0XA0
• For Switzerland	6ES7900-1CA00-0XA0
• For the USA	6ES7900-1DA00-0XA0
• For Italy	6ES7900-1EA00-0XA0
• For China	6ES7900-1FA00-0XA0

More information

Additional information is available on the Internet at:

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

PC-based Automation

Box PC

SIMATIC IPC827D

Overview



IPC827D with opened DVD drive

SIMATIC IPC827D (Box PC): The high-end IPC – with maximum performance, functional scope and expansion capability

It offers:

- Maximum performance and high expandability
- With Intel Xeon technology
- Removable hard disks (RAID1)

4

Technical specifications

Article number	6AG4132-2....-.... SIMATIC IPC827D (BOX PC)
Installation type/mounting	
Mounting	Wall mounting, portrait mounting
Design	Box PC, built-in unit
Supply voltage	
Type of supply voltage	100/240 V AC (autorange); 24 V DC
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	Celeron G1820TE (2C/2T, 2.2 GHz, 2 MB Cache); Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB Cache); Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz, 8 MB Cache, AMT)
Chipset	Intel DH82C226 PCH
Graphic	
Graphics controller	Intel HD graphics controller P4600 GT2 (Xeon, Core i3); Intel HD graphics controller (Celeron)
Drives	
Optical drives	DVD±R±RW combi-drive, optional
Hard disk	3.5" SATA ≥ 500 GB, optional: 3.5" SATA ≥ 1 TB; RAID1 2x 2.5" SATA ≥ 320 GB; solid-state drive (SSD) ≥ 240 GB; all hard disk drives within the enclosure are vibration-damped; RAID1 2x 2.5" SATA ≥ 320 GB byte in removable drive bay
SSD	Yes; ≥ 240 GB optional
Memory	
Type of memory	DDR3 1600 DIMM
Main memory	2 / 4 / 8 / 16 GB; ECC optional
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	2 Mbyte; 128 KB can be stored in the buffer time; optional
Hardware configuration	
Slots	
• free slots	3x PCI, 1x PCIe (x4), 1x PCIe (x16); with card retainer

Technical specifications (continued)

Article number	6AG4132-2....-.... SIMATIC IPC827D (BOX PC)
Interfaces	
PROFIBUS/MPI	Optionally onboard, isolated, max. 12 Mbit/s, compatible with CP 5622
Number of industrial Ethernet interfaces	2; 2x RJ45 (independent)
Number of PROFINET interfaces	3; Optional
USB port	4x USB 3.0
Connection for keyboard/mouse serial interface	USB / USB 1x COM1 (RS 232), optional: 1x COM2 (RS 232)
parallel interface	optional LPT1
Video interfaces	
• Graphics interface	1x DisplayPort and 1x DVI-I; 1x VGA via adapter cable (optional)
Industrial Ethernet	
• Industrial Ethernet interface	Onboard, 2x 10 / 100 / 1000 Mbit, RJ45
- 100 Mbps	Yes
- 1000 Mbps	Yes
Integrated Functions	
Monitoring functions	
• Temperature monitoring	Yes
• Watchdog	Yes
• Status LEDs	Yes
• Fan	Yes
• Monitoring function via network	Optional
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 61000-4-5, surge, length > 30 m
• Interference immunity on signal cables < 30m	±1 kV acc. to IEC 61000-4-4; burst; length < 3 m; ±2 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, CISPR 22 Class B, FCC Class A

Article number	6AG4132-2....-.... SIMATIC IPC827D (BOX PC)
Degree and class of protection	
IP (at the front)	IP20
IP (rear)	IP20
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes
• UL 508	Yes
cULus	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
FCC	Yes
EMC	CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005
Marine approval	
• Germanischer Lloyd (GL)	Yes
• American Bureau of Shipping (ABS)	Yes
• Bureau Veritas (BV)	Yes
• Det Norske Veritas (DNV)	Yes
• Lloyds Register of Shipping (LRS)	Yes
• Nippon Kaiji Kyokai (Class NK)	Yes
Ambient conditions	
Ambient temperature during operation	
• Ambient temperature during operation	+5 °C up to 55 °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)
Vibrations	
• Vibration resistance during operation acc. to IEC 60068-2-6	Tested according to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm; 58 Hz to 500 Hz 9.8 m/s ² (1g)
Shock testing	
• Shock load during operation	Tested to DIN IEC 60068-2-29: 50 m/s ² (5 g), 30 ms, 100 shocks
Operating systems	
Operating system	Windows 7 Ultimate, 32-bit/64-bit, MUI; Windows Embedded Standard 7 P, 32-bit, MUI; Windows 10 Enterprise 2015 or 2016 LTSB, 64-bit, MUI
pre-installed operating system	Yes
without operating system	Yes
pre-installed operating system	
• Windows 7	Yes; Ultimate 32 bits or 64 bits
• Windows 10 IoT Enterprise	Yes; Windows 10 Enterprise 2015 or 2016 LTSB, 64-bit, MUI
Software	
SIMATIC Software	Optional package with SIMATIC WinCC or WinAC RTX
Dimensions	
Width	312 mm
Height	155 mm; With DVD drive: 179 mm
Depth	301 mm; incl. mounting rail

PC-based Automation

Box PC

SIMATIC IPC827D

4

Ordering data	Article No.	Article No.
SIMATIC IPC827D¹⁾	6AG4132 - 2	SIMATIC IPC827D¹⁾
<p>HD graphics onboard (Xeon, i3: HD4600); 2 x Gigabit Ethernet (IE/PN) RJ45; 4 x USB V3.0; 1 x serial (COM1); RAID controller onboard; watchdog, temp./fan monitoring;</p> <p>Processor:</p> <ul style="list-style-type: none"> Celeron G1820TE (2C/2T, 2.2 GHz, 2 MB cache) Celeron G1820TE (2C/2T, 2.2 GHz, 2 MB cache); PROFIBUS/MPI (CP 5622-compatible); 2 MB buffered SRAM Celeron G1820TE (2C/2T, 2.2 GHz, 2 MB cache); PROFINET (IRT, 3 ports, CP 1616-compatible); 2 MB buffered SRAM Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB cache, VT-x) Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB cache, VT-x); PROFIBUS/MPI (CP 5622-compatible); 2 MB buffered SRAM Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB cache, VT-x); PROFINET (IRT, 3 ports, CP 1616-compatible); 2 MB buffered SRAM Xeon E3-1268Lv3 (4C/8T, 2.3 (3.3) GHz, 8 MB cache, VT-d, AMT) Xeon E3-1268Lv3 (4C/8T, 2.3 (3.3) GHz, 8 MB cache, VT-d, AMT); PROFIBUS/MPI (CP 5622-compatible); 2 MB buffered SRAM Xeon E3-1268Lv3 (4C/8T, 2.3 (3.3) GHz, 8 MB cache, VT-d, AMT); PROFINET (IRT, 3 ports, CP 1616-compatible); 2 MB buffered SRAM 	<p>2</p> <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>6AG4132 - 2</p> <p>Memory configuration</p> <ul style="list-style-type: none"> 2 GB DDR3 1600 DIMM 4 GB DDR3 1600 DIMM 8 GB DDR3 1600 DIMM 16 GB DDR3 1600 DIMM 8 GB DDR3 1600 DIMM; ECC 16 GB DDR3 1600 DIMM; ECC <p>Expansions (HW)</p> <ul style="list-style-type: none"> 1 x PCIe (x16); 1 x PCIe (x4); 3 x PCI <p>Expansion 2 (HW)</p> <ul style="list-style-type: none"> Without expansion (HW) 2 x USB in addition (1 slot occupied) COM2; LPT (1 slot occupied) 2 x USB in addition; COM2; LPT (2 slots occupied) <p>Operating system</p> <ul style="list-style-type: none"> Windows 7 Ultimate, 32-bit SP1, MUI (en, de, fr, it, es) Windows 7 Ultimate, 64-bit SP1, MUI (en, de, fr, it, es) Windows 10 Enterprise 2015 LTSB, 64-bit, MUI (en, de, fr, it, es) Windows Embedded Standard 7 P, 32-bit, SP1, MUI (en, de, fr, it, es) with SSD 80 GB option Windows 10 Enterprise 2016 LTSB, 64-bit, MUI (en, de, fr, it, es) for Celeron and i3 processors Windows 10 Enterprise 2016 LTSB, 64-bit, MUI (en, de, fr, it, es) for Xeon processors Without <p>Expansion (SW)</p> <ul style="list-style-type: none"> SIMATIC IPC DiagMonitor enclosed SIMATIC IPC Image & Partition Creator enclosed SIMATIC IPC DiagMonitor, Image & Partition Creator enclosed Without TPM²⁾ (not for China or Russia) <p>Country-specific version / power supply</p> <ul style="list-style-type: none"> 110/230 V AC industrial power supply with NAMUR; power cable for Europe 110/230 V AC industrial power supply with NAMUR; power cable for UK 110/230 V AC industrial power supply with NAMUR; power cable for CH 110/230 V AC industrial power supply with NAMUR; power cable for the USA 110/230 V AC industrial power supply NAMUR; power cable for Italy 110/230 V AC industrial power supply with NAMUR; power cable for China 24 V DC industrial power supply 110/230 V AC industrial power supply with NAMUR; without power cable
<p>Drives</p> <ul style="list-style-type: none"> 500 GB HDD SATA 500 GB HDD SATA; DVD+/-RW 1 TB HDD SATA 1 TB HDD SATA; DVD+/-RW RAID1 2 x 320 GB SATA (2.5") RAID1 2 x 320 GB SATA (2.5"); DVD+/-RW Exchangeable SSD RAID1 2x 240 GB solid-state drive Exchangeable SSD RAID1 2 x 320 GB SATA (2.5") Exchangeable SSD RAID1 2 x 320 GB SATA (2.5"); solid-state drive 240 GB Solid-state drive, 240 GB Solid-state drive 240 GB; 320 GB HDD SATA (2.5") Solid-state drive 240 GB; 320 GB HDD SATA (2.5"); DVD+/-RW 	<p>A</p> <p>B</p> <p>D</p> <p>E</p> <p>G</p> <p>H</p> <p>J</p> <p>K</p> <p>L</p> <p>M</p> <p>N</p> <p>P</p>	<p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>A</p> <p>B</p> <p>C</p> <p>X</p> <p>Y</p> <p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>8</p>

¹⁾ For an up-to-date overview, see the SIMATIC PC Online Configurator at: <http://www.siemens.com/ipc-configurator>

²⁾ 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.

Ordering data	Article No.
Accessories	
Memory expansion	
• 2 GB DDR3 1600 SDRAM, DIMM	6ES7648-2AJ50-0MA0
• 4 GB DDR3 1600 SDRAM, DIMM	6ES7648-2AJ60-0MA0
• 8 GB DDR3 1600 SDRAM, DIMM	6ES7648-2AJ70-0MA0
• 8 GB DDR3 1600 SDRAM, DIMM, ECC	6ES7648-2AJ70-1MA0
Assembly kit for portrait mounting	
• Upward or downward interface outlet	6ES7648-1AA30-1YA0
• Interface outlet to the front	6ES7648-1AA30-1YB0
SIMATIC PC graphics adapter cable	
DVI-I acc. to VGA, 250 mm long	6ES7648-3AB00-0XA0
SIMATIC PC power cable	
For Box PC and Panel PC, 230 V AC, angled, 3 m	
• For Germany, France, Spain, the Netherlands, Belgium, Sweden, Austria, Finland	6ES7900-1AA00-0XA0
• For United Kingdom	6ES7900-1BA00-0XA0
• For Switzerland	6ES7900-1CA00-0XA0
• For the USA	6ES7900-1DA00-0XA0
• For Italy	6ES7900-1EA00-0XA0
• For China	6ES7900-1FA00-0XA0

More information

Additional information is available on the Internet at:

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