SIEMENS

SIMATIC IPC

The More Industrial PC

SIMATIC IPC

Brochure

Edition November 2013

Answers for industry.

SIMATIC IPC
The More Industrial PC

For more than two decades now, Siemens has offered hardware and software that is both innovative and guaranteed to remain available over the long term to enable you to implement tasks of increasing complexity at less risk and with less effort.

The offering encompasses compact, maintenance-free embedded IPCs and high-end IPCs that can be flexibly adapted to any requirements. They all have particularly high reliability and durability in common. We develop and manufacture the mainboards ourselves especially for increased industrial requirements. System availability can be individually further expanded via a range of hardware and software options. SIMATIC IPCs thus offer the more industrial PC.

Back in 1983, Siemens combined standard PC technology with industrial characteristics. Since then, SIMATIC Industrial PCs have continuously set new milestones:

- 2006 – The first industrial PC family with Intel Core2 Duo
- Since 2009 – First TÜV-certified software controller with safety
- 2010 – First high-end industrial PC family with the latest-generation i7/i5/i3 Intel Core processors
- 2011 – First embedded industrial PC family with the latest-generation Intel Atom processors
- 2012 – Integrated HMI/IPC devices with widescreen fronts
- 2013 – First high-end industrial PC family with Intel Quad Core and Xeon processors

Number of PC-based SIMATIC systems in the field
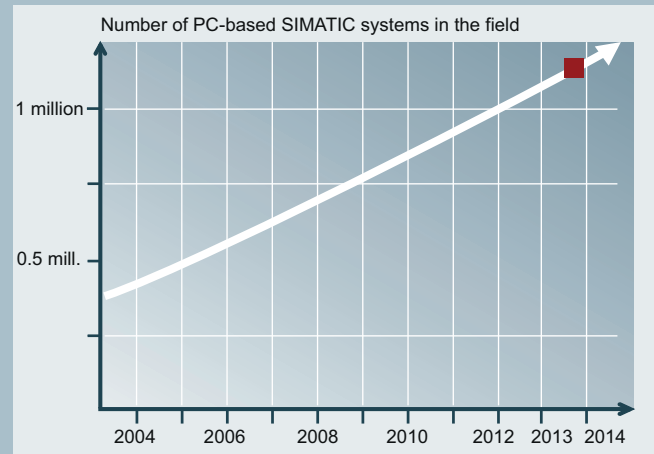
Over the past 9 years, Siemens has more than doubled the number of PC-based systems in the field to over a million devices.

With a market share of 19% in the Industry Sector (IMS Research 2013), Siemens leads the global market in industrial PCs.

Embedded IPCs –
rugged, compact, maintenance-free

High-end IPCs –
Maximum performance and expandability

Device variants for special requirements

Distributed operator control and monitoring – even across long distances

Contents

New productivity standards thanks to Totally Integrated Automation

Optimized processes reduce the total cost of ownership, shorten the time to market, and improve quality.

This perfect balance between quality, time and costs is today more than ever the decisive success factor for industry.

Totally Integrated Automation is optimized for all requirements and is open for international standards and third-party systems.

SIMATIC IPCs are a component part of Totally Integrated Automation, and can be configured and programmed easily and efficiently via the integrated engineering framework TIA Portal. Whether for control, visualization, or drive solutions – you benefit from integrated and reliable engineering with a high level of data transparency.

www.siemens.com/tia-portal

Multimedia advisor for PC-based Automation
www.siemens.com/video-pc-based-getting-started

Components for increasing system availability

SIMATIC IPCs – at home in many industries

SIMATIC IPC – The more industrial PC

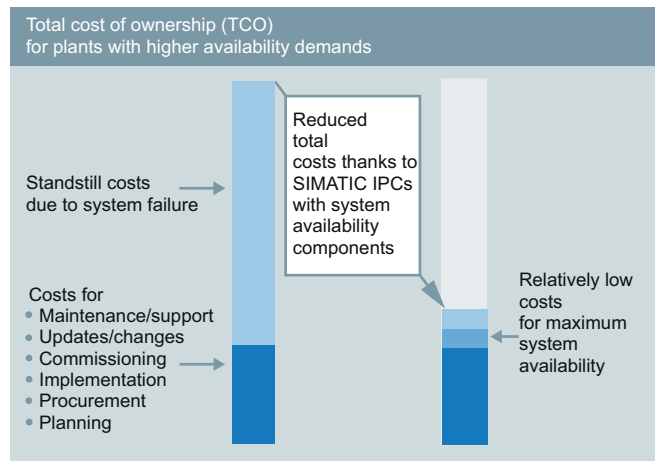## More ruggedness and system availability

More ruggedness and industrial suitability

Meeting the high demands placed on industrial compatibility starts with the product design. SIMATIC IPCs stand out due to the following special characteristics:

- Mainboards developed in-house
- Rugged enclosure designs with high electromagnetic compatibility (EMC) and degrees of protection up to IP65/NEMA 4
- Integrated industrial power supplies (to NAMUR) and redundant power supplies that can be swapped during normal operation
- High MTBF even in the extended temperature range
- High vibration/shock resistance thanks to special hard disk holders
- Lockable plug connectors and card retainers
- Internal USB interface, e.g. for a software dongle
- Installed and activated Microsoft operating systems for time savings during installation
- Service-friendly, modular device design
- Restore CD/DVD for recovery to the as-delivered condition

More system availability

Thanks to their product features and additional system availability components, SIMATIC IPCs ensure high plant availability in the long term with reduced follow-on costs – for maximum productivity and cost effectiveness.

Total cost of ownership (TCO) for plants with higher availability demands

Standstill costs due to system failure

Reduced total costs thanks to SIMATIC IPCs with system availability components

Relatively low costs for maximum system availability

Costs for
- Maintenance/support
- Updates/changes
- Commissioning
- Implementation
- Procurement
- Planning

SIMATIC IPC – The more industrial PC
**www.siemens.com/the-more-industrial-pc**

Measures for greater ruggedness and industrial compatibility, based on a SIMATIC Rack PC

Rugged housing designs with high electromagnetic compatibility (EMC)

Card retainers secure expansion cards under severe vibration / shock conditions

Fan with speed monitoring with enhanced protection against the ingress of dust through overpressure ventilation

Filter mat replaceable without tool
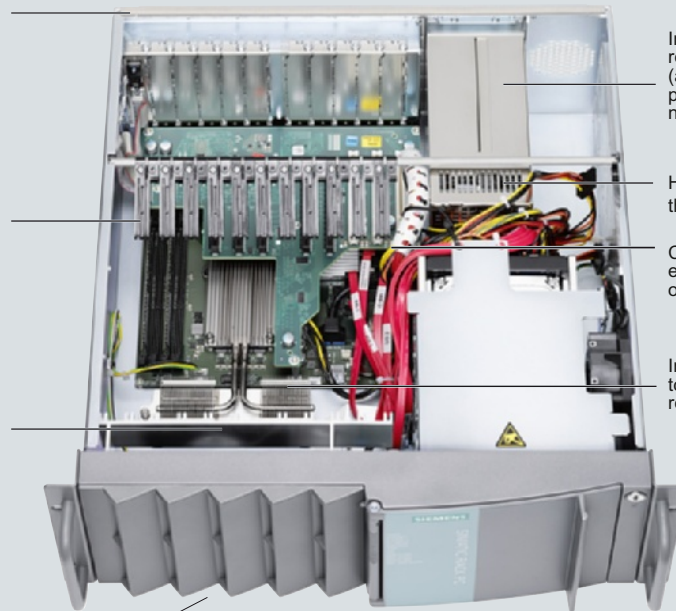
Industrial power supply reliably bridges voltage dips of 20 ms (according to NAMUR) or redundant power supply replaceable during normal operation

High vibration / shock resistance thanks to special hard disk holders

Cable grips ensure permanent contact of the plug-in connections

Internal USB interface to prevent unauthorized removal of a software dongle

More product diversity and selection options

SIMATIC IPCs are available with large product diversity in various designs and with different functionalities.

The TIA Selection Tool supports you with selecting processors, memory configurations, drives, add-on cards, and pre-installed, already activated operating systems.
A wizard also enables selection according to technical requirements or type of application.

To order, you can export your configuration direct to the cart of the Industry Mall or the CA 01.
www.siemens.com/tia-selection-tool

Of course, you also acquire individual products and systems – precisely tailored to your needs:
www.siemens.com/customized-automation

Benefits from identical mainboard base
- Same system software and drivers due to identical processors and chipsets
- Reduced evaluation effort when using different SIMATIC IPCs
- Reduced spare parts inventory (e.g. memory, hard disks)

Long-term availability and defined further development
- In-house development and production in Germany
- Long-term availability of 4 - 6 years
- 5 years repair and spare parts service

This results in a total service and support period of 9 – 11 years.

		Rack PC	Box PC	Panel PC	
Embedded Industrial PCs Extremely rugged Extremely compact Maintenance-free– w/o fan	**2xx series** optimized performance, extremely compact		IPC227D	IPC277D	Identical mainboard base
	4xx series high performance, highly compact		IPC427D	IPC477D	Identical mainboard base
High-end industrial PCs Very rugged High performance High functionality	**6xx series** compact	IPC647D	IPC627D	IPC677D	Identical mainboard base
	8xx series expandable	IPC847D	IPC827D		
Industrial PCs Rugged Maximum performance Low-priced	**5xx series** expandable	IPC547E			

The integrated platforms of the industrial SIMATIC IPCs offer a high degree of flexibility through individual selection options

More networking options with PROFINET onboard

For easy integration in PROFINET networks and consistently real-time-capable communication from the corporate management level down to the field level, the SIMATIC IPCs optionally offer PROFINET onboard.

Real-time IT communication, as well as TCP/IP are thus possible on a single line.

The intelligent controller architecture with integrated 3-port switch facilitates the flexible and easy assembly of linear or tree topologies. Supports the integration of existing fieldbus systems, such as PROFIBUS.
The integral PROFINET interface of the SIMATIC IPCs can be used for:

- Direct connection of distributed I/Os and drives, for example with WinAC RTX as the controller
- Use as additional standard Windows interface via the integrated switch, e.g. for TCP/IP communication or visualization applications with WinCC
- Use of the new functions, e.g. Shared Device, Media Redundancy Protocol (MRP)

Compared with conventional solutions, PROFINET reduces costs for the installation and integration of system components by 30 to 35%.

Advantages at a glance

- The PROFINET onboard interface saves one slot, which can be used for other PC cards
- The intelligent controller architecture with integrated 3-port switch (ERTEC 400) improves the PC system performance by reducing the processor load
- Full support of the WinAC RTX software PLC and the fail-safe WinAC RTX F version
- Optimized integration of SIMATIC IPCs in PROFINET configuration (STEP 7 and NCM-PC)
- Efficient self-diagnostics using status LEDs supports commissioning and diagnostics

Real-time communication

PROFINET offers scalable real-time RT and IRT for all requirements in automation.
Real-Time (RT) is used for time-critical process data – i.e. for cyclical user data or event-controlled alarms.
For this purpose, PROFINET uses an optimized real-time communication channel. Its performance exceeds that of conventional fieldbuses. For especially challenging applications, there is the hardware-supported real-time communication Isochronous Real-Time (IRT) – for motion control applications and high-performance applications in factory automation, for example.
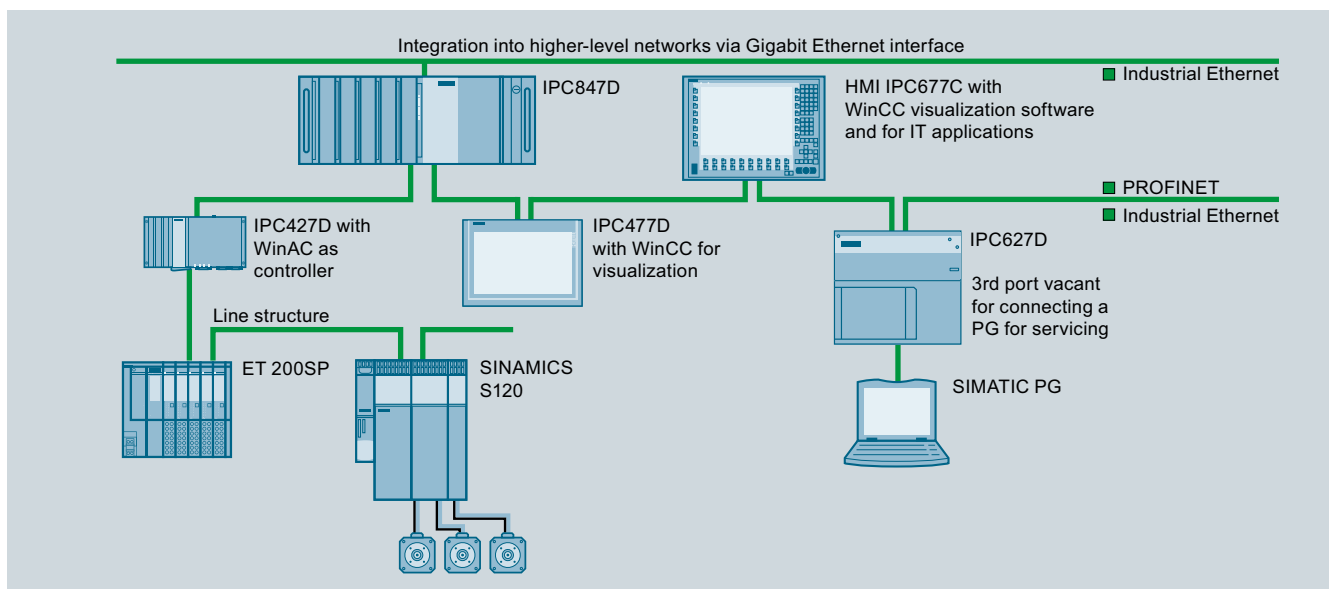
Easy integration of SIMATIC IPCs in PROFINET networks over the PROFINET interface with integrated 3-port switch

More quality, continuity, service and support

Industrial PCs from Siemens verifiably comply with the highest quality standards associated with the "made in Germany" label thanks to self-developed mainboards and innovative technologies for reliable continuous operation in an industrial environment.

Integrated quality assurance concept – maximum quality right from the start

SIMATIC IPCs are accompanied by a mature quality assurance concept, from our in-house development and production, through the test center, right up to keeping order promises and maintaining field quality and environmental protection.

Advantages at a glance
- Maximum quality and fulfillment of all requirements
- Reliable maintenance of all data and specifications
- Consistently positive properties over many years
- 100% functional products and safe use
- High continuity and long-term availability
- Easy on resources and environmentally friendly

SIMATIC IPC – See the quality
www.siemens.com/simatic-ipc-video-quality

More continuity and long-term availability

SIMATIC IPCs offer maximum compatibility and long-term availability with a minimum 6-month overlapping period in the case of innovations and new device generations, as well as a total service and support period of 9 – 11 years following market launch.

More service and support

Whoever uses an industrial PC by Siemens has a system that operates reliably round-the-clock 365 days a year. To make sure this remains so, we have established an appropriate service and support concept for fast and efficient help – not only for fault cases. For example:
- Online support, e.g. FAQs, tools, downloads, news letters
- SIMATIC Hotline, 24-hour competent help
- PC-based Competence Centers for project support
- Worldwide on-site, 35 repair centers in 30 countries and subsidiaries in 190 countries

www.siemens.com/automation/support
About SIMATIC IPC/PG: **www.siemens.com/asis**

Service tool PED – Product Equipment Data

With the PED service tool, you can identify and manage device and component data of SIMATIC IPCs/PGs online and worldwide by means of standard Internet browsers, to support device/plant documentation, for example:

www.siemens.com/ped

More continuity and long-term availability

Compatibility and long-term availability for SIMATIC IPC

- Hardware (Processor, memory, ...)
- Service (Spare parts, repairs)
- Software/Interfaces
- Installation size, installation

1 Win 98
2 Win NT; ISA slot, LPT/S5 interface
3 Unplanned chipset fault correction

IPC677D
HMI IPC677C
Panel PC 677B
Panel PC 677
Panel PC 670 V2
Panel PC 670

1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014

SIMATIC Embedded Industrial PCs

Extremely rugged, compact and maintenance-free

For universal installation in machines, control enclosures and control cabinets, the fan-free embedded devices from SIMATIC are available as:
- Industrial PCs in the Box PC and Panel PC types of construction
- S7 controllers in modular design

The Embedded Industrial PCs SIMATIC IPC2x7D/IPC4x7D enable particularly flexible and compact handling of the most diverse tasks:
- Measuring, open-loop control, closed-loop control, and testing of process and machine data
- Industrial image processing with data acquisition and processing
- Distributed visualization in conjunction with SIMATIC Industrial Flat Panels
- Used as a data concentrator or gateway

The benefits of embedded devices
- Extremely high system availability and data security
- High degree of flexibility for interfaces and expansions
- Universal installation positions and mounting options
- Fast commissioning thanks to pre-installed and activated operating system
- Ready-to-use bundles with visualization and control software

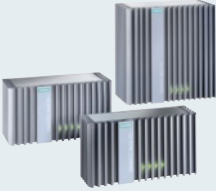| General features	IPC227D – Nanobox PC – compact, flexible mountable and dust-protected	IPC277D – Nanopanel PC – compact with displays from 7"
Operating systems (preinstalled and activated)	Windows Embedded Standard 7 / Windows Embedded Standard 2009 / Windows 7 Ultimate / XP Professional	
Processor	Intel Atom E660 (1.3 GHz); Atom E640 (1.0 GHz); Atom E620 (600 MHz) [1]	
SATA HDD, SATA SSD, CF Drive	HDD 250 GB [1]; SSD 50 GB (High Endurance); SSD 80 GB (standard); 1 x CFC up to 16 GB (can be replaced from the outside)	
Networking options (onboard)	2 x Gigabit Ethernet, 1 x PROFINET (Real-time over standard Ethernet)	
Expandability with cards	1 x PCIe (optional)	–
Integrated retentive memory	MRAM 512 KB (optional), 128 KB of which usable for WinAC	
Long-term availability		
Availability	4 to 6 years	
Repair and spare parts service	Additional 5 years	
Industrial compatibility		
Shock / vibration	15 g / 1g	
Ambient temperature during operation	0 ... 50 °C	
Options for increased system availability		
DiagMonitor diagnostics software	■	
Remote access (Intel AMT for Core i5/i7)	–	
Image & Partition Creator backup SW	■	

[1] IPC227D only

With the SIMATIC S7-mEC, the modular embedded controller, standard Windows applications, applications in real-time environments, and standard PCI-104 cards can be integrated on compact hardware.

It is particularly suitable for combined tasks in special machine manufacture and standard machine manufacture, such as:

- Controlling and data processing
- Controlling and operator control and monitoring

Get the system you want easily and quickly

The TIA Selection Tool supports you with selecting processors, memory configurations, drives, add-on cards, and pre-installed, already activated operating systems. A wizard also enables selection according to technical requirements or type of application.

To order, you can export your configuration direct to the cart of the Industry Mall or the CA 01.
www.siemens.com/tia-selection-tool

IPC427D – Microbox PC – flexibly configurable		IPC477D – Panel PC – flexibly configurable, displays from 12"	S7-mEC – modular controller expandable and fail-safe	**General features**
Windows Embedded Standard 7 / Windows 7 Ultimate MUI			Windows Embedded Standard 2009	**Operating systems** (preinstalled and activated)
Intel Core i7-3517UE (1.7 GHz), Core i3-3217UE (1.6 GHz), Celeron U827E (1.4 GHz)			Intel Core Duo (1.2 GHz)	Processor
HDD 250 GB; SSD 50 GB (High Endurance); SSD 80/160 GB (standard); 1 x CFast up to 16 GB (can be replaced from the outside), second CFast up to 16 GB internally			1 x CFC up to 4 GB	SATA HDD, SATA SSD, CF Drive
2 x Gigabit Ethernet, 1 x MPI/PROFIBUS (optional), 1 x PROFINET (3 ports, opt.)			1 x Ethernet, 1 x PROFINET (2 ports)	Networking options (onboard)
up to 2 x PCIe (optional)		1 x PCIe (optional)	via expansion modules	Expandability with cards
512 KB NVRAM, 128 KB of which usable for WinAC			512 KB	Integrated retentive memory
				Long-term availability
4 to 6 years				Availability
additional 5 years			additional 5 years	Repair and spare parts service
				Industrial compatibility
15 *g* / 1*g*		5 *g* / 1*g*	5 *g* / 1*g*	Shock / vibration
0 ... 55 °C		0 ... 50 °C	0 ... 50 °C	Ambient temperature during operation
				Options for increased system availability
■			–	DiagMonitor diagnostics software
■ / and via SIMATIC IPC Remote Manager			–	Remote access (Intel AMT for Core i5/i7)
■			■	Image & Partition Creator backup SW

Highlights of the SIMATIC Embedded Industrial PCs

Extremely high system availability and data security

SIMATIC Embedded Industrial PCs are extremely rugged and reliable devices, partly thanks to:
- Rugged mass storage:
  - Solid-state Drive (SSD) with 50 GB (High Endurance)
  - Solid-state drive (SSD) with 80/160 GB (Standard)
  - CompactFlash Drive up to 16 GB (IPC2x7D)
  - CFast Drive up to 16 GB (IPC4x7D)

- 512 KB non-volatile retentive memory (opt.), e.g. for backing up process data during power failure
- Front LED display for efficient self-diagnostics
- Pre-installed local diagnostics software for monitoring mass storage, battery, temperature and program execution

High degree of flexibility for interfaces and expansions

SIMATIC IPC227D / IPC277D: Connections and expansions

IPC227D basic unit

Enclosed all-metal housing

CompactFlash slot

DVI-D graphics connection

4 x LED

24 V DC power supply, isolated

Power switch

COM1: RS 232 or RS 485 or CAN

4 x USB 2.0

2 x Gigabit Ethernet

60 mm

Variant COM also with:
COM2 - 4: RS 232

90.6 mm

Variant IO also with:
4 x dig. inputs
4 x dig. outputs,
24 V

Variant PCIe also with:
1 x PCIe (x1)

191 mm

IPC277D basic unit 7"
from 7" - 19"
from 15" with
1 x front USB 2.0

Mounting depth from 73.4 mm (12" unit)

SIMATIC IPC427D / IPC477D: Connections and expansions

IPC427D basic unit

DisplayPort

4 x LED

4 x USB 3.0

DVI-D
DVI-D

2 x Gigabit Ethernet

All-metal housing

Power switch

50.5 mm

24 V DC power supply, isolated

CFast slot

COM1

COM2 (opt.)

1 x PROFINET or PROFIBUS

Variant PCIe also with: 1 x PCIe (x4)

80.5 mm

Variant PCIe also with: 1 x PCIe (x4), 1 x PCIe (x1)

100.8 mm

262 mm
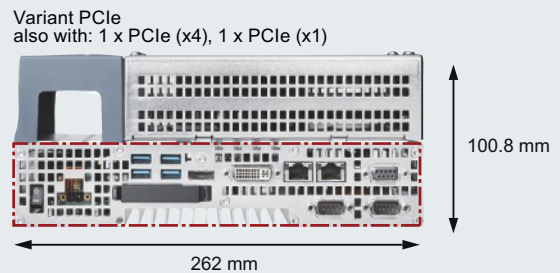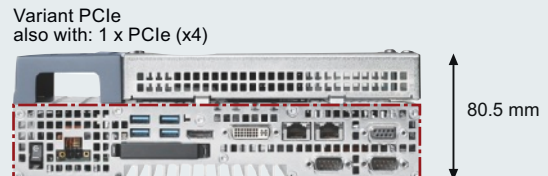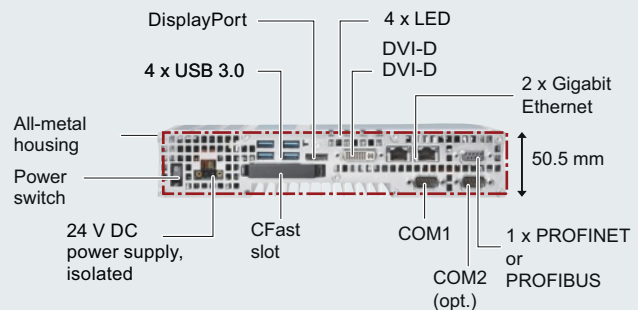
IPC477D basic unit 12"
from 12" - 22", from 15" with 1 x front USB 2.0

Mounting depth from 83 mm (12" unit)
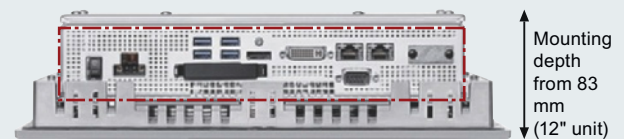
Universal installation positions and mounting options

The compact SIMATIC IPC227D and IPC427D Box PCs are optimized for flexible use in confined spaces in the control cabinet and direct at the machine.

They offer versatile mounting possibilities and installation positions with retention of assured characteristics, such as ambient temperatures up to 55 °C (IPC427D).

- Space savings of more than 20%. For easy installation and fast cabling, all the interfaces are comfortably accessible from one side.

- Simple, tool-free mounting onto standard rail, e.g. in combination with a SITOP power supply.
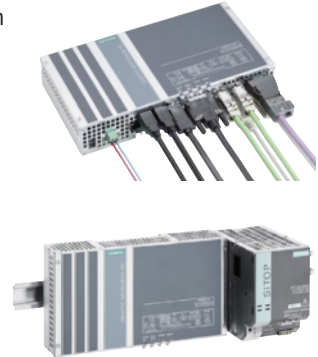
Mounting options on the SIMATIC IPC227D
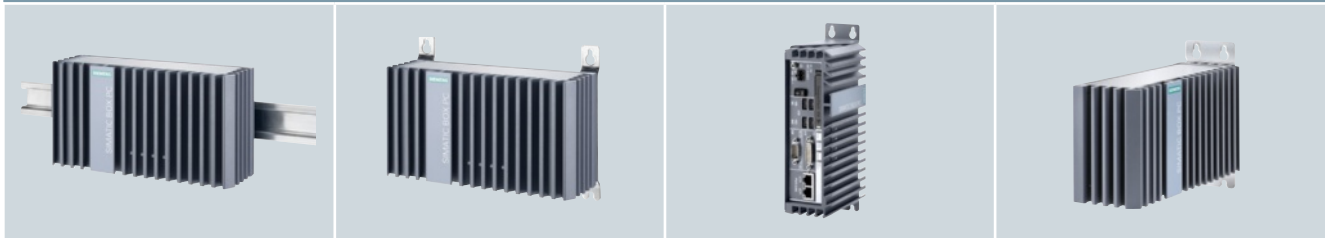
Tool-free mounting on standard rail

Flexible wall mounting with interfaces above or below

Space-saving portrait mounting with a small footprint

Side mounting with minimum space requirements

SIMATIC S7-mEC: Connections and expansions

EC31 basic unit

W x H: 160 mm x 125 mm

The SIMATIC S7-mEC can be functionally expanded using expansion modules (EMs):

- The EM PC offers several interfaces, including a Gigabit Ethernet interface with separate IP address and two slots for memory cards

- The EM PCI-104 has three slots for any desired PC modules (PCI-104 / PCI-104+), e.g. bus interface modules, instrumentation or video modules, as well as memory cards and sound cards.

Fast commissioning thanks to ready-to-use bundles

Embedded Bundles – ready to use and cost-effective

You can purchase embedded industrial PCs and controllers as ready-to-use SIMATIC Embedded Bundles complete with a Windows Embedded operating system and pre-installed and preconfigured SIMATIC software.

Additional information at:

www.siemens.com/simatic-embedded-bundles

Advantages at a glance

- Extremely high system availability and data security
- High degree of security thanks to perfectly matched and tested hardware and software combinations
- Extremely time-saving thanks to ready-to-use system with fast, problem-free commissioning
- Delivery state can be restored if required with the Restore CD/DVD
- High level of data security since retentive data can be saved and secured against loss resulting from power failure
- The IPC onboard interfaces can be used by the SIMATIC WinAC software controller for connecting distributed I/O over PROFIBUS/PROFINET
- Problem-free modular expansion of the S7-mEC Embedded Controller with SIMATIC I/O modules, such as a PROFIBUS card
- Efficient, cost-effective overall package as alternative to ordering individual components

SIMATIC Embedded Bundles / Operating system	IPC2x7D WES 2009 / WES 7		IPC4x7D WES 7		IPC4x7C (PRO) WES 2009		IPC4x7C (PRO) WES 7		S7-mEC WES 2009	
Operator control and monitoring										
WinCC RT V7.0					●					
WinCC RT Professional (TIA Portal)							●			
WinCC RT Advanced (TIA Portal)	●	●	●	●			●	●		
WinCC flexible RT					●	●	●	●	●	●
Open-loop and closed-loop control										
WinAC RTX	●		●		●		●		●	
WinAC RTX F		●		●		●		●		●

● available preinstalled and preconfigured
⅃ recommended combination

WES 2009 = Windows Embedded Standard 2009
WES 7 = Windows Embedded Standard 7

Software packages – ordering with a price advantage

Our software packages give you a price advantage and are offered for all available SIMATIC IPCs.
You just have to select your SIMATIC IPC, configure it, and order it together with the SIMATIC software.

Additional information at:
www.siemens.com/simatic-ipc-packages
or from your local SIMATIC partner:
www.siemens.com/automation/partner

Device variants for special requirements

All-round protection in degree of protection IP65

You can also obtain the SIMATIC HMI IPC477C Embedded Panel PC with all-round protection in degree of protection IP65 with displays in the sizes 15" and 19". Its technology is based on the existing built-in unit, and it is designed for mounting on a support bracket or stand.

The SIMATIC HMI IPC477C PRO 15" and 19" can be supplemented with expansion units such as the KP8 Key Panel.

SIMATIC HMI PRO devices (PRO = protected) can be mounted on support bracket and stand systems from different manufacturers using an adapter. This means they can be used directly at the machine outside the control cabinet, for ergonomic operation at different points in the plant or production line.

Advantages at a glance

- Operator panels with all-round IP65 protection for mounting on support brackets or stands
- Removable backplane hood for optimum service friendliness
- Maximum compactness and low weight for easy mounting
- Easily adjustable to changing requirements thanks to modular expansions

SIMATIC HMI PRO devices are available to you with different functionalities as Multi Panels, Flat Panel Monitors, Thin Clients and Panel PCs:
www.siemens.com/ip65-hmi-devices

Intrinsically safe for the hazardous area

The intrinsically-safe SIMATIC HMI Panel PC Ex and SIMATIC HMI Thin Client Ex devices can be used direct in the hazardous areas of Zones 1/21 and 2/22, without special measures such as inconvenient and costly enclosures or additional certification procedures.
The devices are also highly resistant to vibration and shock and are certified for use in shipbuilding:
www.siemens.com/simatic-hmi-ex

Individual SIMATIC Embedded Industrial PCs

Wherever SIMATIC standard products (IPC, HMI, S7) do not meet your special requirements, we offer you Customized Automation for the perfect solution in our familiar high quality.
An offer that covers all the bases:

- Changes in design (e.g. company logo, color)
- OEM products (e.g. with special expansion cards)
- Software products (e.g. with special drivers and customer images)
- Turnkey products (e.g. with ready-to-use HMI operator stations)
- Industry solutions (e.g. for oil & gas, chemicals, food & beverages)
- Individual service, support and logistics solutions (e.g. tests, certification, approvals, just-in-time delivery)

Individual design in less than 20 days:

With Digital Express Design, the operator panel fronts can be designed in less than 20 working days even for small unit quantities.
Even photographic-quality representations with a resolution of up to 600 dpi are possible.

Further information:
www.siemens.com/customized-automation
E-mail:
customized.automation@siemens.com

SIMATIC High-end Industrial PCs

Rugged and powerful with high functionality

The rugged high-end industrial PCs from SIMATIC offer a high degree of functionality, and are particularly powerful for high-speed processing of large volumes of data.

They are available as:

- 19" rack PCs for the control cabinet, or as desktop IPCs
- and as an integrated box and panel PC platform for direct installation in machines

The benefits of high-end devices

- High performance and extremely fast system response
- Platform with identical performance features
- High system availability and data security
- Energy-efficient industrial PCs
- High service friendliness

General features	IPC547E – Rack PC maximum performance at an attractive price	IPC647D – Rack PC high performance, functionality and compactness	IPC847D – Rack PC high performance, functionality and expandability
Operating systems (preinstalled and activated)	Windows 7 Ultimate (32/64 bit); Windows Server 2008 R2 (64 bit)		
Processor	Intel Core i7-4770S 3.1 (3.9) GHz; Core i5-4570S 2.9 (3.6) GHz; Pentium Dual Core G3420 3.2 GHz Celeron (in prep.)	Xeon E3-1268L v3 4C/8T 2.3 (3.3) GHz; Core i5-4570TE 2C/4T 2.7 (3.3) GHz; Core i3-4330TE 2C/4T 2.4 GHz	
Drives	internal/swap frame: 500 GB; 1 TB; 2 x 1 TB; SSD 240 GB; RAID1: 2 x 1 TB (opt.plus 1 TB as hot spare or SSD 240 GB); RAID5: 3 x 1 TB (opt. plus 1 TB as hot spare)	internal/swap frame: 500 GB; 1 TB; 2 x 1 TB; SSD 240 GB; RAID1: 2 x 1 TB, 2 x 1 TB (opt. plus SSD 240 GB)	internal/swap frame: 500 GB; 1 TB, 2 x 1 TB; SSD 240 GB; RAID1: 2 x 1 TB (opt. plus 1 TB as hot spare or SSD 240 GB); RAID5: 3 x 1 TB (opt. plus 1 TB as hot spare)
Networking options (onboard)	2 x Gigabit Ethernet	2 x Gigabit-Ethernet, 1 x PROFINET 3 Ports optional, 1 x PROFIBUS /MPI optional	
Expandability with cards	4 x PCI, 1 x PCIe x16 Gen 3, 1 x PCIe x 16 (4 Lanes), 1 x PCIe x8 (1 Lane)	3 x PCIe x16 (4 Lanes), 1 x PCIe x16 (8 Lanes) or 2 x PCI; 2 x PCIe x16 (8 Lanes)	7 x PCI, 1x PCIe x16, 3 x PCIe x4 or 3 x PCI, 5 x PCIe x16, 3 x PCIe x4
Integrated retentive memory	–		
Long-term availability			
Availability	at least 1.5 years	4 to 6 years	
Repair and spare parts service	additional 3 years	additional 5 years	
Industrial compatibility			
Shock / vibration	*1 g / 0.2 g*	*5 g / 0.5 g*	
Ambient temperature	during operation: 5 ... 40 °C	during operation: 5 ... 50 °C	
Options for increased system availability			
Diagnostic software	SIMATIC IPC DiagMonitor		
Remote access	Intel AMT 9.0 (with Core i-5,Core i-7 and Xeon CPU) and via SIMATIC IPC Remote Manager		
Backup software	SIMATIC IPC Image & Partition Creator		

With the SIMATIC High-end Industrial PCs, tasks with the highest demands on performance and system availability can be handled:

- Measuring, and open/closed-loop control of industrial processes
- Visualization of production sequences, e.g. distributed with with Industrial Flat Panel Monitor
- Image processing, e.g. within the scope of quality inspections
- Data acquisition and management, e.g. for recipe management
- Intelligent energy management
- Industrial server applications with maximum system performance, availability and data security

Get the system you want easily and quickly

The TIA Selection Tool supports you with selecting processors, memory configurations, drives, add-on cards, and pre-installed, already activated operating systems. A wizard also enables selection according to technical requirements or type of application.
To order, you can export your configuration direct to the cart of the Industry Mall or the CA 01.
www.siemens.com/tia-selection-tool

IPC627D – Box PC high performance functionality and compactness	IPC677D – Panel PC high performance and functionality w. 22" full HD displays	IPC827D – Box PC high performance, functionality and expandability	General features
Windows 7 Ultimate (32 / 64 bit)			**Operating systems** (preinstalled and activated)
Intel Xeon E3-1268L v3 2.3 GHz; Core i3-4330TE 2.4 GHz; Celeron G1820TE 2.2 GHz			Processor
without; 250 GB; 500 GB; SSD 240 GB; RAID1: 2 x 250 GB			Drives
2 x Gigabit Ethernet; 1 x PROFINET (3 ports) optional; 1 x PROFIBUS/MPI optional			Networking options (onboard)
2 x PCI or 1 x PCI and 1 x PCIe x16		3 x PCI, 1 x PCIe x16 and 1 x PCIe x4	Expandability with cards
Battery-backed SRAM 2 MB, 128 KB of which usable for WinAC			Integrated retentive memory
			Long-term availability
4 to 6 years			Availability
additional 5 years			Repair and spare parts service
			Industrial compatibility
5 g / 1 g			Shock / vibration
during operation: 5 ... 55 °C	during operation: 5 ... 50 °C	during operation: 5 ... 55 °C	Ambient temperature
			Options for increased system availability
SIMATIC IPC DiagMonitor			Diagnostic software
Intel AMT 9.0 (with Core i-5,Core i-7 and Xeon CPU) and via SIMATIC IPC Remote Manager			Remote access
SIMATIC IPC Image & Partition Creator			Backup software

Highlights of the SIMATIC High-end Industrial PCs

Maximum performance and particularly fast system response

- 4th generation Intel Core processors
- Powerful onboard HD graphics integrated into the CPU
- Now also with Intel Xeon processor
- PCI Express x16 and USB 3.0
- High data transfer rates thanks to two Gigabit Ethernet connections

Platform with identical performance features

- Very robust against vibration and shock
- Full performance even at higher temperatures
- Great expandability via PCI Express slots
- High degree of compatibility regarding installation, interfaces and software
- Optional PROFIBUS or PROFINET interface with three ports for cost-effective connection of distributed field devices or to couplings with SIMATIC S7

Special features of SIMATIC Rack PCs

High-quality industrial design
- Vibration and shock-absorbing hard disk holder
- Reliable dust protection and low noise due to fan-controlled pressurized cooling
- Housing with anti-corrosion coating

High service friendliness
- Front fan can be replaced without tools
- Only one screw needs to be removed to quickly open the enclosure
- Hard disks and power supply unit can be replaced during operation

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

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

Multi-monitoring
Multi-monitoring with up to 5 monitors via optional PCI-Express x16 graphics card and onboard graphics.

SIMATIC IPC647D / IPC847D: Connections and expansions

IPC647D
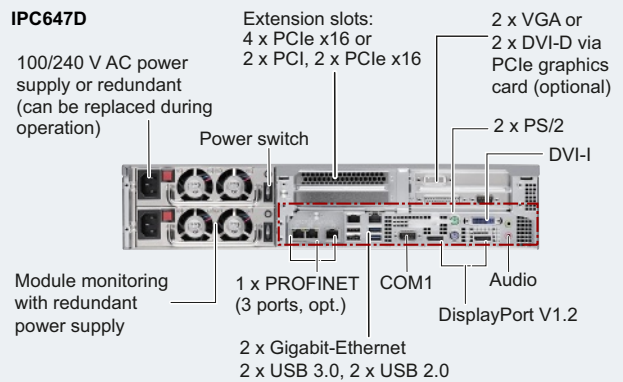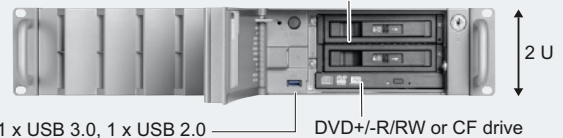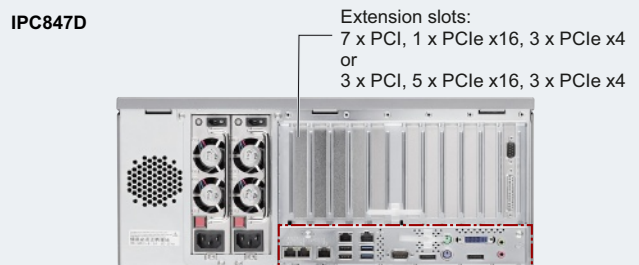
100/240 V AC power supply or redundant (can be replaced during operation)

Power switch

Extension slots:
4 x PCIe x16 or
2 x PCI, 2 x PCIe x16

2 x VGA or
2 x DVI-D via
PCIe graphics
card (optional)

2 x PS/2

DVI-I

Module monitoring with redundant power supply

1 x PROFINET (3 ports, opt.)

COM1

Audio

DisplayPort V1.2

2 x Gigabit-Ethernet
2 x USB 3.0, 2 x USB 2.0

SATA/SAS hard disks swap frame (hot swap with RAID1)

2 U

1 x USB 3.0, 1 x USB 2.0

DVD+/-R/RW or CF drive

IPC847D

Extension slots:
7 x PCI, 1 x PCIe x16, 3 x PCIe x4
or
3 x PCI, 5 x PCIe x16, 3 x PCIe x4

SATA/SAS hard disks swap frame (hot swap with RAID1 / 5)

4 U

1 x USB 3.0, 1 x USB 2.0

DVD-ROM or DVD+/-R/RW
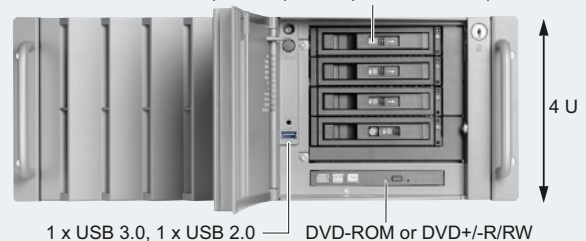
Maximum system availability and data security

- High-quality industrial design with vibration/shock-absorbing hard-disk holders
- RAID controller onboard or hardware RAID [1] as well as an additional hot spare drive
- SAS controller [1] (PCIe x8) with 1 TB SAS HDD
- Rugged mass storage, solid-state drive with 240 GB
- ECC RAM work memory with error correction
- Retentive data memory for storing the process data after a power failure
- Redundant power supply (hot-swap) [1]

- Redundancy thanks to two teaming-capable Gigabit Ethernet connections
- Secure remote access via Intel AMT [2] and SIMATIC IPC Remote Manager

Energy-efficient industrial PCs

- Low power consumption thanks to mobile processors
- Wake-on-LAN functionality for timed start-up of the IPCs from a central point, over the network, e.g. after a shutdown weekend

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IPC627D/IPC827D/IPC677D: Connections and expansions

IPC627D

Fan power unit
Power switch
120/230 V AC power supply
Extension slots: 2 x PCI, optional 1 x PCI and 1 x PCIe x16
ON/OFF button

PROFIBUS/MPI
2 x Gigabit Ethernet, 4 x USB 3.0
DisplayPort V1.2
1 x DVI-D
COM1

IPC827D

Extension slots: 3 x PCI, 1 x PCIe x4, 1 x PCIe x16

1 x PROFINET (3 ports, opt.)
4 x oper. state/ diagnostics LEDs

IPC677D

Moun-ting depth appr. 112 mm

1 x USB 3.0

Special features of IPC627D/IPC827D/IPC677D

Fast replacement of the CMOS battery even when installed thanks to externally accessible battery compartment.

Four status and signal LEDs provide fast diagnosis of the operating status and display the BIOS start process:
1 x LED: BIOS
2 x LEDs: user/WinAC RTX
1 x LED: WinAC RTX

The SIMATIC IPC677D has a 22" widescreen display in brilliant full HD quality.
(Further display sizes in 4:3 format are still available via the SIMATIC HMI IPC677C).

[1] on Rack PCs
[2] with Intel Core i7 / i5

High service friendliness

Universal use and easy installation

The SIMATIC Rack PCs are optimized for installation in 19" control cabinets, and for use as desktop IPCs:

- Minimal housing depth for space-saving installation in 19" control cabinets of 500 mm depth – IPC547E is available with an overall depth of 356 mm
- Preparation for telescopic rail mounting for service-friendly use in the control cabinet
- Removable 19" supports for use as desktop IPC
- Optional tower kit for use as industrial workstation or server in control rooms and engineering offices (IPC547E/847D)

Depth:
356 mm

SIMATIC Box PCs are optimized for flexible use in confined spaces in the switching cabinet and directly at the machine

- For easy installation and fast cabling, all the interfaces are comfortably accessible from one side
- Versatile mounting options and installation positions with retention of assured characteristics, such as ambient temperatures up to 55 °C:
  - Mounting bracket for flexible wall mounting with interfaces above or below
  - Space-saving portrait mounting with a small footprint
  - Side mounting with minimum space requirements

Options for industrial server applications

Maximum system performance/availability and data security:

- SAS hard disks with 1 TB in RAID1/5 configuration in hot-swap frame
- Hardware RAID controller (PCIe x8) with Serial Attached SCSI (SAS) and Zero-Maintenance Cache Protection Module (ZMM)
- Monitoring of the redundant power supply (each module) and the SAS hard disks / hardware RAID controller using the SIMATIC IPC DiagMonitor diagnostics software
- 64-bit operating system Windows Server 2008 R2

Further information can be found in the video at:
http://youtu.be/CJpTCvegbGs

Software packages – ordering with a price advantage

Our software packages give you a price advantage, and are offered for all available SIMATIC IPCs.

You just have to select your SIMATIC IPC, configure it, and order it together with the SIMATIC software.

Additional information at:
www.siemens.com/simatic-ipc-packages

or from your local SIMATIC partner:
www.siemens.com/automation/partner

Device variants for special requirements

Stainless steel fronts

The SIMATIC HMI IPC677C Panel PC with 15" touch display is also available with a stainless front, designed for use in the food and beverages industry.

It is characterized by:
- Simple cleaning and disinfecting
- High resistance
- Splitter protection of the display
- High degree of protection

SIMATIC IPC677C 15" Touch INOX	
Material and surface	Stainless-steel 1.4301, polyester foil/ polished, grain size 240
Seal	EPDM
Special features	Optimized rack profile, angled surfaces, tested hygiene with LGA symbol 5664018
Degree of protection	Front: IP66K, At the rear: IP20

www.siemens.com/inox-hmi-devices

Explosion protection

The SIMATIC IPC627C Box PC and the SIMATIC HMI IPC677C 19" Panel PC have UL certification Class I / Division 2 for operation in potentially explosive atmospheres, for example, in the oil and gas or petrochemical industries.

Individual SIMATIC High-end Industrial PCs

Wherever SIMATIC standard products (IPC, HMI, S7) do not meet your special requirements, we offer you Customized Automation for the perfect solution in our familiar high quality.

An offer that covers all the bases:
- Changes in design (e.g. company logo, color)
- OEM products (e.g. with special expansion cards)
- Software products (e.g. with special drivers and customer images)
- Turnkey products (e.g. with ready-to-use operator stations)
- Industry solutions (e.g. for oil & gas, chemicals, food & beverages), individual service, support and logistics solutions (e.g. tests, certification, approvals, just-in-time delivery)

Example of an individual high-end IPC:

The SIMATIC HMI IPC677C Panel PC can also be customized as an ergonomic operator station to a high degree of protection (up to IP66K all-round) built into a stainless-steel control box.

Further information:
www.siemens.com/customized-automation
E-mail:
customized.automation@siemens.com

Distributed operator control and monitoring

with Industrial Flat Panel Monitors and Thin Clients

For solutions with detached operator unit, SIMATIC offers two different concepts:
Industrial Flat Panel Monitors for small-scale separated solutions over a distance of up to 30 meters and Industrial Thin Clients, for one or more operator stations, any distance apart over Industrial Ethernet.

SIMATIC IFP Industrial Flat Panel Monitors – for fast response times

SIMATIC IFPs are available with 15", 19" and 22" widescreen fronts for display only or with touch operation, and as a 15" touch/key variant with front USB. The devices can be separated from the industrial PC up to a distance of 30 m via a DisplayPort or DVI interface, and they offer quick response times for jog mode or curve display. Approvals for the hazardous area, shipbuilding, and a 19" touch version (PCT) for gesture and multi-touch operation will be available soon.
Devices with 4:3 displays are still available – also with all-round IP65 degree of protection.

www.siemens.com/simatic-ifp

Advantages at a glance

- Cast aluminum fronts for 24-hour continuous operation, also for high temperature, vibration, shock and EMC requirements
- Energy-saving LED backlighting (100% dimmable), especially long service life
- High-resolution widescreen display for clear display and operator input, with good readability from all directions
- Integrated front design in widescreen format like Panel PCs and Comfort Panels, for uniform appearance of machines and plants
- Long-term availability

SIMATIC ITC Industrial Thin Clients – for cost-optimized and versatile client-server architectures

SIMATIC ITCs are powerful operator terminals with high-resolution widescreen touch displays in the sizes 12", 15", 19" and 22". They are especially user-friendly in implementing distributed HMI solutions with client-server architecture, and they can be used flexibly from machine-level operator control and monitoring, right up to connection to control systems (SCADA) and numerical controls (SINUMERIK).

The devices can be almost any distance from the server system over Industrial Ethernet. A Gigabit LAN interface, integrated Web browser, and diverse supported protocols offer high flexibility and high-speed communication with other systems. Intrinsically-safe devices for the hazardous area are available, as well as devices with all-round IP65 degree of protection.

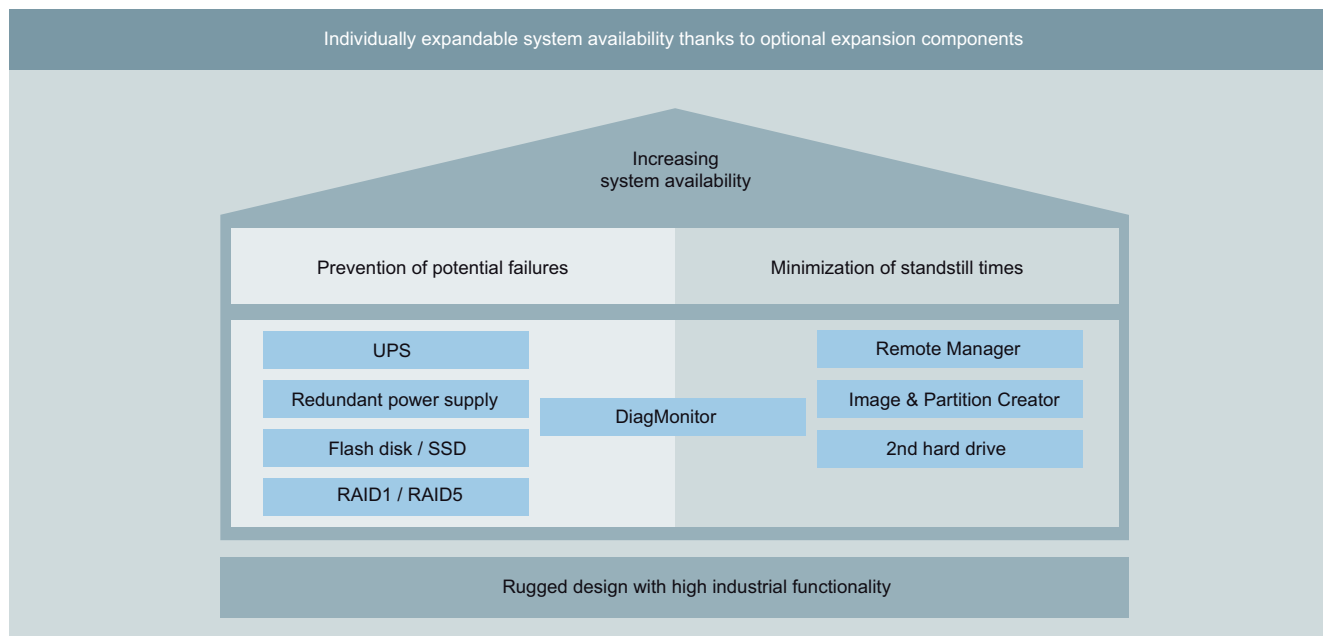**www.siemens.com/simatic-itc**
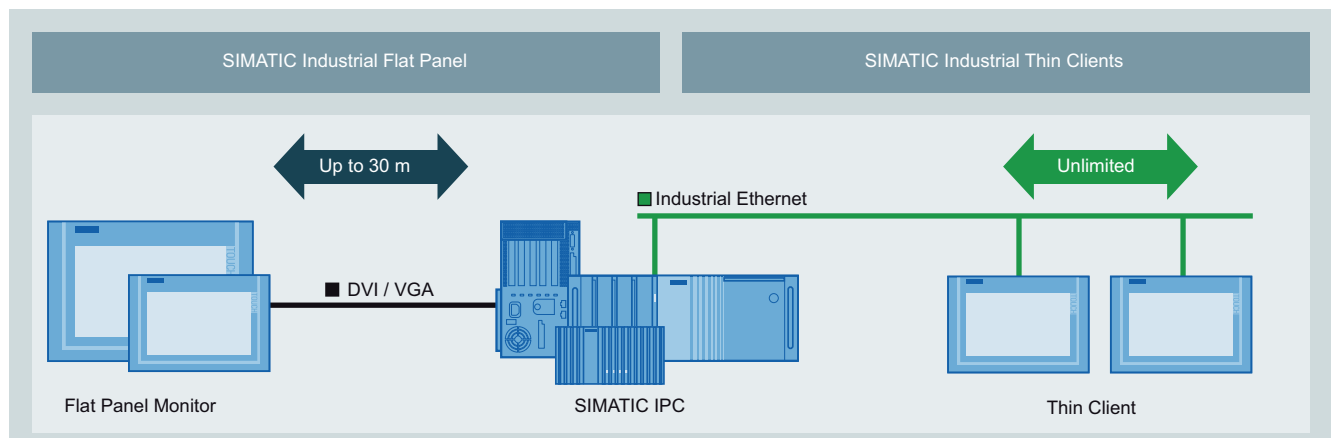
SIMATIC IFP Industrial Flat Panel Monitors and SIMATIC ITC Industrial Thin Clients offer maximum flexibility with distributed operator control and monitoring

Individually expandable system availability

The rugged design and high industrial suitability make SIMATIC industrial PCs highly available. For applications with individual system availability requirements, we offer a matched range of optional expansion components.

This enables you to detect potential failures early and to effectively minimize actual downtimes.

Individually expandable system availability thanks to optional expansion components
Increasing system availability
Prevention of potential failures / **Minimization of standstill times**
UPS — Remote Manager
Redundant power supply — DiagMonitor — Image & Partition Creator
Flash disk / SSD — 2nd hard drive
RAID1 / RAID5
Rugged design with high industrial functionality

Avoiding potential failures – to prevent the damage from happening

Hardware and software are subject to industrial loads that can result in failures with high follow-on costs, such as loss of the power supply or data. To avoid potential failures, SIMATIC IPCs offer expansion options with which the damage can be prevented before it happens. This includes the following:

- Uninterruptible power supplies (UPS)
- Redundant power supply unit that can be replaced during operation
- Flash disk and SSD as safe mass storage
- RAID 1/RAID 5 configuration with automatic multiple data backup and restore

SIMATIC IPC DiagMonitor – intelligent and comprehensive diagnostics, local or remote

To allow early detection of potential failures in the field, the SIMATIC IPC DiagMonitor software tool provides intelligent and comprehensive diagnostics and signaling functions which allow you to carry out preventive maintenance in good time.

Minimization of standstill times – so that your plant gets up and running again quickly

Once a system has come to a standstill due to a fault, it is of the essence to minimize such downtimes and the associated costs.

SIMATIC IPCs therefore offer expansion options to rapidly restore your system's operability.
These include:

- SIMATIC IPC Remote Manager software for implementing low-cost maintenance, troubleshooting and administration of SIMATIC IPCs by means of encrypted remote access
- SIMATIC IPC Image & Partition Creator software for preventive data backup and efficient partition management
- Second hard disk for data/image backup

Overview and additional information at:
www.siemens.com/ipc-expansion-components

Optional system availability expansions

Prevention of potential failures

- Uninterruptible power supplies
  (UPSs)
  The rugged SITOP DC-USV 24 V
  devices ensure secure storage of
  data, orderly power down, and
  correct restart after power failures
  longer than 20 ms.
  www.siemens.com/sitop/ups

- Redundant power supply
  The redundant power supplies that can be replaced
  during operation, and monitored using diagnostics
  software, ensure high system availability in the
  SIMATIC Rack PCs.

- Flash disk and SSD as safe mass storage
  Compared to a hard disk, CFC, CFast and SSD are
  approved for higher values with regard to vibration,
  shock or temperature, and they offer increased security
  for the operating system and application.

- RAID1/RAID5 configuration
  The RAID1/RAID5 configurations, in which the data is
  automatically backed up and restored, offer maximum
  protection against data loss. The system continues to be
  operational, and the hard disk can be replaced without
  interruption during operation. The onboard RAID con-
  troller saves one slot, which can be used for other cards.

Notes on security

To ensure the secure operation of a plant or machine it
is necessary to take additional, suitable preventive
action (e.g. cell protection concept) and to integrate
the automation and drive components into a state-of-
the-art holistic industrial security concept for the entire
plant or machine. Please find further information at:
www.siemens.com/industrialsecurity

Minimization of downtimes

SIMATIC IPC Remote Manager

The Remote Management software enables remote access
to SIMATIC IPCs with Intel Active Management
Technology (Intel AMT, for Core i7/i5) and it offers:

- Central service without on-site deployment
  – Encrypted remote access
  – Simple correction of faults
  – Fast execution of updates with
    subsequent restart
- Efficient energy management and service management
  – Reduced power consumption and costs
  – Service outside production periods

www.siemens.com/simatic-ipc-remote-manager

SIMATIC IPC Image & Partition Creator

The software package supports you with organizing data
and partitioning SIMATIC IPCs. You can then back up data
easily and restore it as well as manage
partitions efficiently. Together with the SIMATIC IPC
Remote Manager, convenient and time-saving remote
data backup and restore is possible.
www.siemens.com/image-partition-creator

### Second hard disk for data/image backup

In a non-RAID network, a second hard disk can be used as
an additional memory or backup medium. In the event of a
fault, the data can be quickly restored, or the system can
be made immediately ready for use again by booting from
the backup disk.

SIMATIC IPC DiagMonitor

SIMATIC IPCs have integrated functions for local diagnos-
tics. The SIMATIC IPC DiagMonitor diagnostic and signaling
software expands these functions and detects possible
hardware faults and software errors.
It monitors, signals and visualizes operating states of
SIMATIC IPCs both locally and remotely.

The integrated Web server enables global monitoring
and management by authorized users.

www.siemens.com/diag-monitor
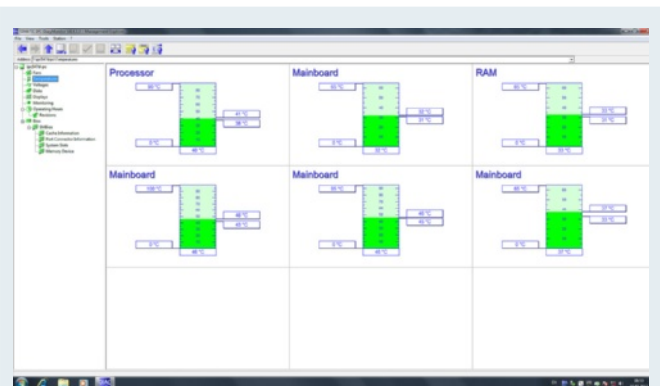
You can find all the benefits and information in the video at:
http://youtu.be/wXSfjtYmKPk

Original accessories for SIMATIC IPCs

The original SIMATIC accessories secure the reliability of your automation solution. They are system-tested with SIMATIC IPCs as well as SIMATIC PGs and meet the high quality requirements with regard to EMC and functional use in industrial environments.

Further information about the SIMATIC accessories:
www.siemens.com/ipc-expansion-components

SIMATIC IPC USB FlashDrive

With the 8 GB SIMATIC IPC USB FlashDrive (USB 2.0) in SLC technology, we offer you a fast and reliable memory medium for mobile data transport in a rugged metal housing.

Problem-free in handling thanks to plug & play, they are flexible and ready for immediate use – also as a boot medium, or in low-maintenance applications that do not include floppy or optical drives.

SIMATIC IPC Service USB FlashDrive

The 8 GB Service USB FlashDrive is an indispensable tool for setting up, maintaining and servicing SIMATIC IPCs – ready for immediate use thanks to pre-installed software products:

- SIMATIC IPC BIOS Manager
- SIMATIC IPC Image & Partition Creator

SIMATIC IPC CompactFlash and CFast

At higher temperature, vibration and shock loads, CompactFlash and CFast cards (up to 16 GB) offer more secure data storage than hard disks.

Further advantages:
- Long-term availability
- Diagnostics capability for monitoring with the SIMATIC IPC DiagMonitor

SIMATIC IPC keyboards / mouse / touch pen

SIMATIC IPC offers ergonomic input devices especially suited for industrial use:

- 19" slide-in, full-stroke or IP65 membrane keyboard
- Touch pen, mounted in a special holder next to the Panel PC (cannot be detached)

- Optical mouse with non-slip surface coating, three buttons, including a large scroll wheel, and symmetrical housing design for right-handed and left-handed operators.
  Thanks to innovative BlueTrack technology, it can also be used without a mouse pad on a host of surfaces, such as granite.

PC-based Control and HMI software

Software options for operating and monitoring

A range of hardware and software options is available for PC-based automation. Optimum interaction of these options and SIMATIC IPCs is guaranteed as a result of joint development and comprehensive system tests.

SIMATIC WinCC (TIA Portal) – Innovative HMI software
SIMATIC WinCC in the Totally Integrated Automation Portal (TIA Portal) is part of a new, integrated engineering concept that offers a uniform engineering environment for programming and configuration of control, visualization and drive solutions.

WinCC in the TIA Portal is the software for all HMI applications ranging from the simplest operating solutions with Basic Panels, to SCADA applications on PC-based multi-user systems. **www.siemens.com/simatic-wincc**

Maximum configuration efficiency
Compared to its predecessor, WinCC flexible, configuration efficiency has been further increased, particularly if further TIA components such as the SIMATIC S7 Controller are part of the automation solution.

The perfect interaction with STEP 7 in the TIA Portal prevents multiple entries and guarantees consistent data management at all times. All the common functions are uniform – also in terms of their presentation on the screen. User benefits range from intuitive operation, through the editors' integrated intelligence, to the advantages of a shared database, ensuring maximum transparency and absolute consistency.
www.siemens.com/tia-portal

**SIMATIC WinCC V7 – Scalable process visualization with plant intelligence**
SIMATIC WinCC is a price- and performance-graded process visualization system for all sectors even up to the pharmaceutical industry where appropriate options comply with the requirements of 21 CFR Part 11.
WinCC offers SCADA functionality – from single-user down to distributed multi-user systems with redundant servers and cross-location solutions with Web clients. In particular, WinCC is characterized by absolute openness. Via open interfaces, system houses can develop individual applications and install system expansions on WinCC. With the integrated process database, WinCC forms the information hub for company-wide, vertical integration.

WinCC offers the following advantages:

- Universally applicable
- Solutions for all sectors
- Meets requirements according to 21 CFR Part 11
- Multilingual for worldwide use
- Can be integrated in all automation and IT solutions
- Can be configured easily and efficiently
- Continuously scalable – also via the Web
- Open standards for easy integration
- Integrated MS SQL server for data archiving as information hub
- Increased production transparency through Plant Intelligence
- Expandable using options and add-ons

SIMATIC WinCC can be operated with server functionality on Windows Server 2008. This possibility exists for the SIMATIC Rack PCs.
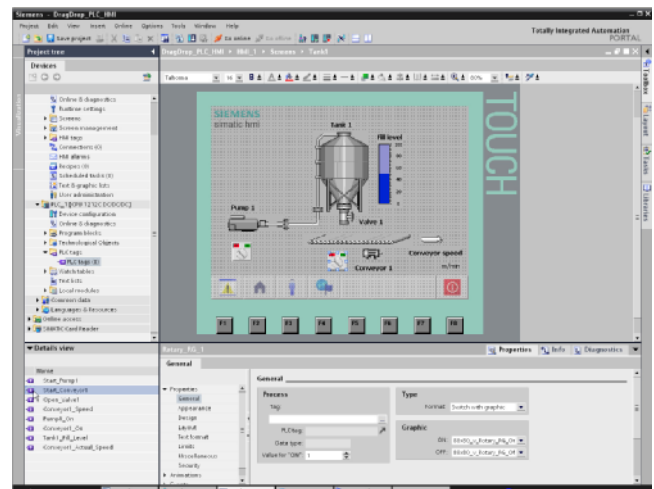
Software options for open-loop control

PC-based Control with SIMATIC WinAC RTX
WinAC RTX enables control on the PC. The WinAC RTX software controller is used when requirements for high performance, high data volumes and strict real time all coincide. The optimized runtime system supports the processing of extensive and demanding PC applications in parallel with the control task. It executes on the operating systems Windows XP Professional, Windows Embedded Standard 2009/Standard 7 or Windows 7, and uses a real-time core for real-time and deterministic behavior.

WinAC RTX uses the latest innovations for SIMATIC Controllers when communicating over PROFINET. Particular features are the isochronous mode over PROFINET and IRT, and the Web server functionality. Isochronous mode is used for extremely fast and accurate automation solutions. Input signals are acquired, processed and output at fixed intervals. The Web server automatically generates Web pages that can also be used for remote diagnostics, and permits access to a plant from any PC with the relevant authorization.

Use of SIMATIC know-how
WinAC RTX is programmed with the usual SIMATIC programming tools – with STEP 7 or, if required, also with the field-proven engineering tools, such as the IEC 61131-3-compliant languages S7-SCL or S7-GRAPH. WinAC RTX is code-compatible with SIMATIC S7, in other words, program modules created for SIMATIC S7-300 and S7-400 can be reused in WinAC RTX and vice-versa.

**Fail-safe variant SIMATIC WinAC RTX F**
WinAC RTX F provides a TÜV-certified (German Technical Inspectorate), fail-safe software controller for safety-oriented applications. The S7 Distributed Safety software (a STEP 7 option) is used for programming the fail-safe program. The PROFIsafe profile permits fail-safe communication via PROFIBUS DP and PROFINET IO.

Openness and know-how protection
WinAC RTX is open to the integration of technological applications, such as barcode readers, image processing, measured value acquisition and numerical controls. C/C++/C# programs can be integrated into the WinAC RTX control program for this purpose. Extremely flexible solutions can therefore be generated with access to all the hardware and software components of the PC. C/C++/C# is frequently used to program complex technology functions. These often contain valuable know-how.
C / C ++ / C# encapsulates these programs. The openness of WinAC RTX can therefore also be used to protect know-how in customized functions.

Integration of complex closed-loop controllers with MATLAB/Simulink
With the MATLAB/Simulink software from The Mathworks, processes and PID controllers can be modeled graphically and simulated. With Embedded Coder, the Simulink subsystems can be translated into C/C++ code. This code can be integrated into a WinAC ODK project and can be called and executed from the S7 program using DLL/RTDLL. Example templates for integration are available on the Internet. These are provided as free downloads.
www.siemens.com/simatic-winac-odk
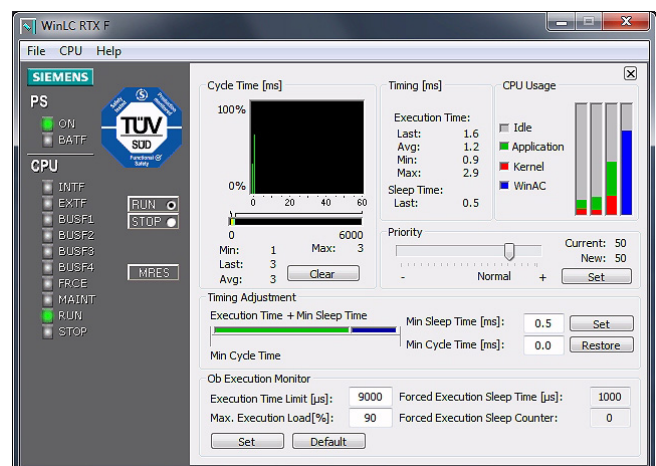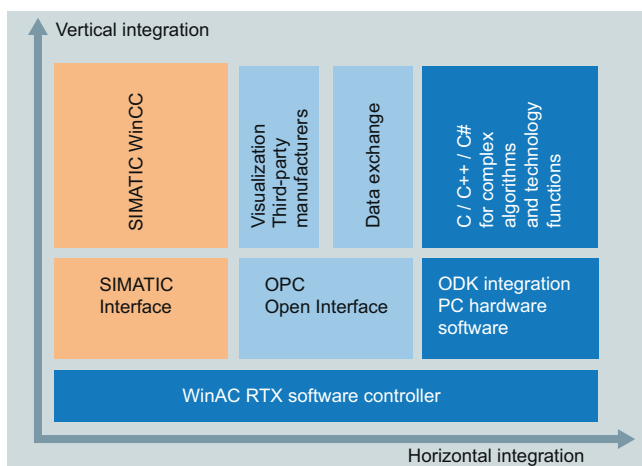
More application options

SIMATIC IPCs are perfectly equipped and suitable for open- and closed-loop control, visualization, measuring and testing, data processing and communication tasks, as well as as a gateway or network transition.

SIMATIC IPCs are used increasingly also for intelligent energy management or in shipbuilding.

You will find application examples animated in 3D at:

www.siemens.com/pc-based-applications

SIMATIC IPCs – at home in many industries

- Automotive industry (e.g. test bays, paint lines)
- Semiconductor and electronics industry (e.g. diffusion plants)
- Regenerative energy (solar, wind)
- Chemicals and pharmaceuticals industry (e.g. tablet presses, fermenters)
- Oil, gas and water (e.g. water treatment, water supply)
- Food and beverages industry (e.g. filling systems, fruit presses)
- Stock-keeping and logistics (e.g. high-bay warehouses, conveyor technology)
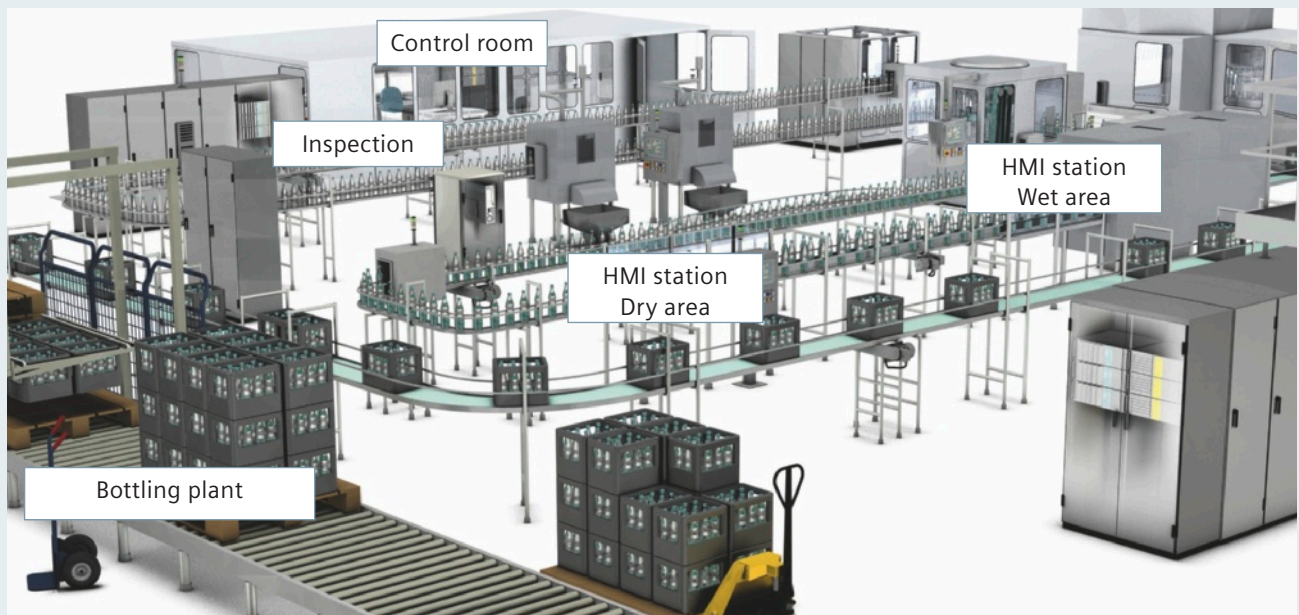- Mechanical engineering (e.g. printing machines, textile machines, CD/DVD production)

www.siemens.com/automation/references

Application examples

Automotive industry

Quality assurance

HMI station

Chassis installation

HMI station

Chassis adjustment test bench

Food and beverages industry

Control room

Inspection

HMI station
Wet area

HMI station
Dry area

Bottling plant

References for PC-based Automation

Machine data acquisition optimizes production

AGCO GmbH, one of the largest manufacturers and suppliers of tractors and farming machinery worldwide, offers high-tech solutions for agriculture. For more economic production processes with reduced consumption of resources, centralized and integrated machine data acquisition has been introduced by means of panel PCs with all-round protection. By means of easy, cost-saving retrofitting of the panel PCs direct in the production plant on a stand, there was no need for additional installation of a control desk, permitting a reduction in costs.

Retrofit for high performance and precision

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

Innovative safety solutions

SIPA Berchi, an Italian company involved in PET bottle manufacture, bottling systems and packaging, requires an innovative PC-based solution with Safety Integrated for the processes "blow-molding, labeling, bottling, and sealing."
A modular embedded controller with fail-safe software controller increased the performance of the plant. Cabling costs, as well as the time and outlay for engineering were reduced.
www.siemens.com/reference-video-sipa-berchi

Control and monitoring of wind turbine generator systems

Siemens turbines for offshore wind turbine generator systems feature technical characteristics that ensure long-term, low-maintenance operation. A rugged Box PC in a shock-proof and vibration-proof all-metal enclosure with high electromagnetic compatibility ensures safe 24-hour continuous operation at ambient temperatures up to 55 °C. A RAID1 mirror disk system has been selected for a high level of data security. International standards, CE and UL certification, as well as worldwide service ensure global use.
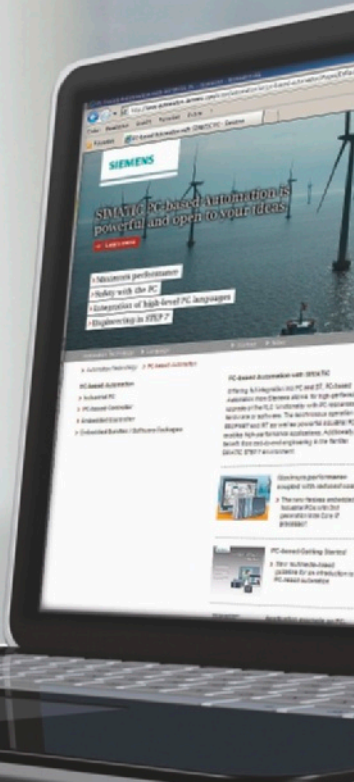
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http://support.automation.siemens.com

To ensure the secure operation of a plant or machine it is also necessary to take suitable preventive action (e.g. cell protection concept) and to integrate the automation and drive components into a state-of-the-art holistic industrial security concept for the entire plant or machine. Any third-party products that may be in use must also be taken into account. Please find further information at:
http://www.siemens.com/industrialsecurity

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