



SIMATIC PC-based Automation

Průmyslové počítače Siemens Simatic – IPC

TIA na dosah – 3/2019 Ostrava / Brno / Praha

SIDoor



HCS



IPC

SITOP



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siemens.com/siplus-hcs

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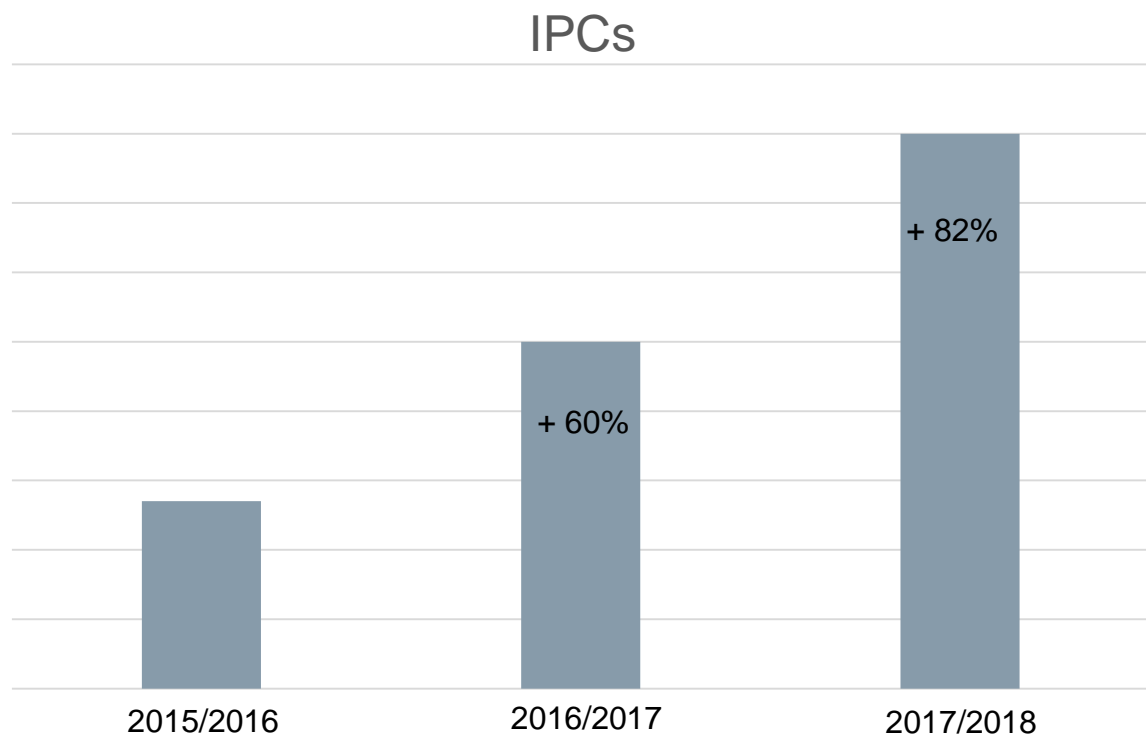
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Industrial PCs

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siemens.com/ipc

Prodeje Siemens IPCs za poslední 3 roky – proč?



- Kompatibilita IPCs s Tia portal
- Kompletní řešení Siemens - projekty
- Spolehlivost
- Diagnostika
- Konektivita
- Dostupnost
- Výhodné balíčky s WinCC a SW PLC
- Záruka 3
- Digitalizace
- Cena
- Atd.



SIEMENS
Ingenuity for life

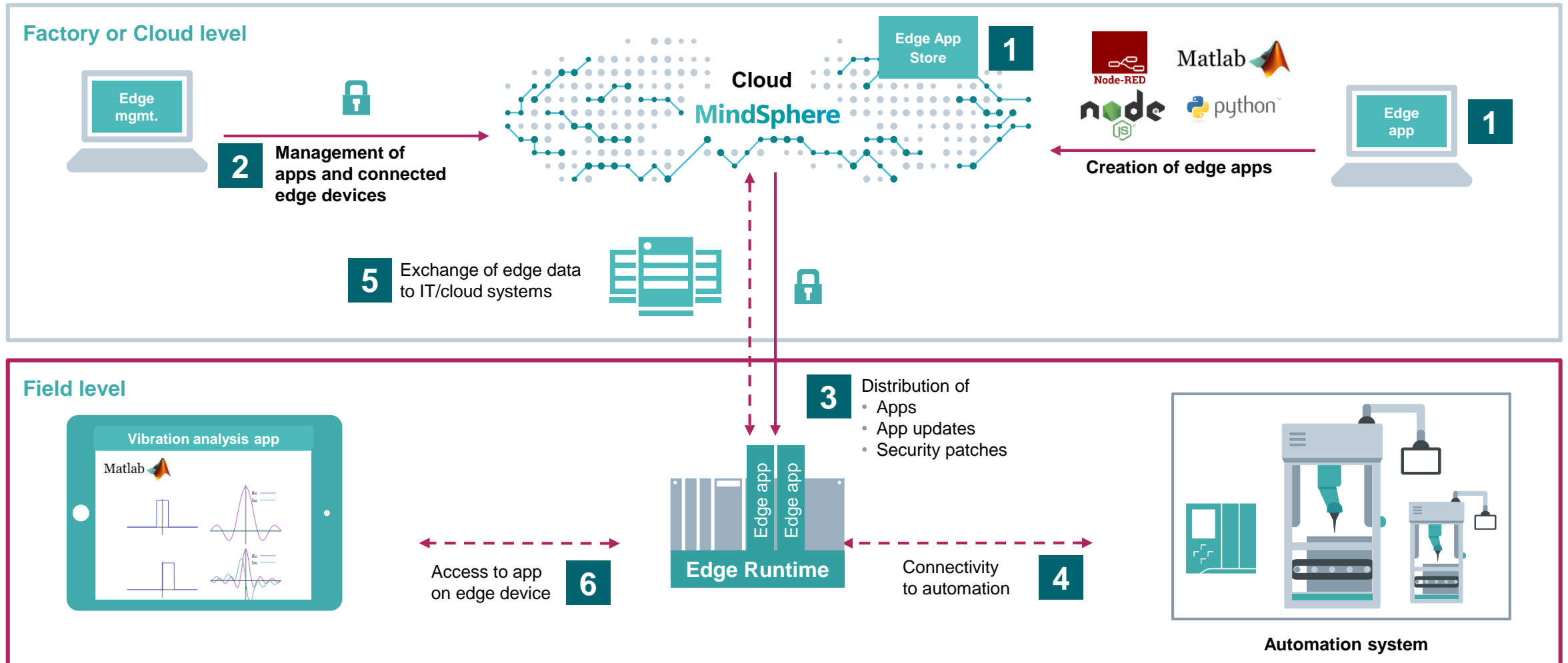


Siemens Industrial Edge for automation

Restricted © Siemens AG 2018














[siemens.com/industrial-edge](https://www.siemens.com/industrial-edge)

Siemens Industrial Edge for automation – Exemplary workflow in detail



Siemens Industrial Edge for automation – Preview for planned apps in 2019

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| | Data visualization Apps | Data processing/ analytics Apps | Connectivity | Other Apps |
|----------------------|--|--|---|--|
| Industrial Edge Apps | | | | |
| SIMATIC Edge |  SIMATIC Inventory  SIMATIC Automation Tool Basic |  SIMATIC Node red |  SIMATIC S7  MindSphere  OPC UA  MQTT |  SIMATIC Notifier |
| SINUMERIK Edge |  SINUMERIK Analyze MyMachine  SINUMERIK Optimize MyMachine |  SINUMERIK Analyze My-Workpiece/Capture |  SINUMERIK High frequency data acquisition | |
| Partner Edge Apps | |  Braincube data gateway | | |

Přenos dat



Siemens Industrial Edge Podcast – Hannover Fair 2018

- DE: <https://www.youtube.com/watch?v=FIHlt8sNk34>
- EN: <https://www.youtube.com/watch?v=IrKtTg0To-A>

Edge Computing Info movie

- DE: <https://www.youtube.com/watch?v=3n-sHJhz8I8>
- EN: <https://www.youtube.com/watch?v=M8meiHMvZRM>

Website

www.siemens.com/industrial-edge



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Ingenuity for life



SIMATIC IOT2040

The intelligent Gateway
for Industrial IoT solutions

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[siemens.com/iot2000](https://www.siemens.com/iot2000)

SIMATIC IOT2040 – Industrial ruggedness. Openness. Connectivity.

SIEMENS



SIMATIC quality

Designed for 24/7 operation
in industrial environment

Expandability and connectivity

With mPCIe, industrialized IO module and various
standard interfaces and available protocol drivers

Performance and Deterministic

Intel Quark® CPU and 1 GB RAM as
well as x86-deterministic and battery
buffered real time clock

Openness

Free programmable in high-level languages
(e.g. Java, C++) via various IDEs
(e.g. Eclipse) and compilers for Yocto Linux

Automation.ConnecTed

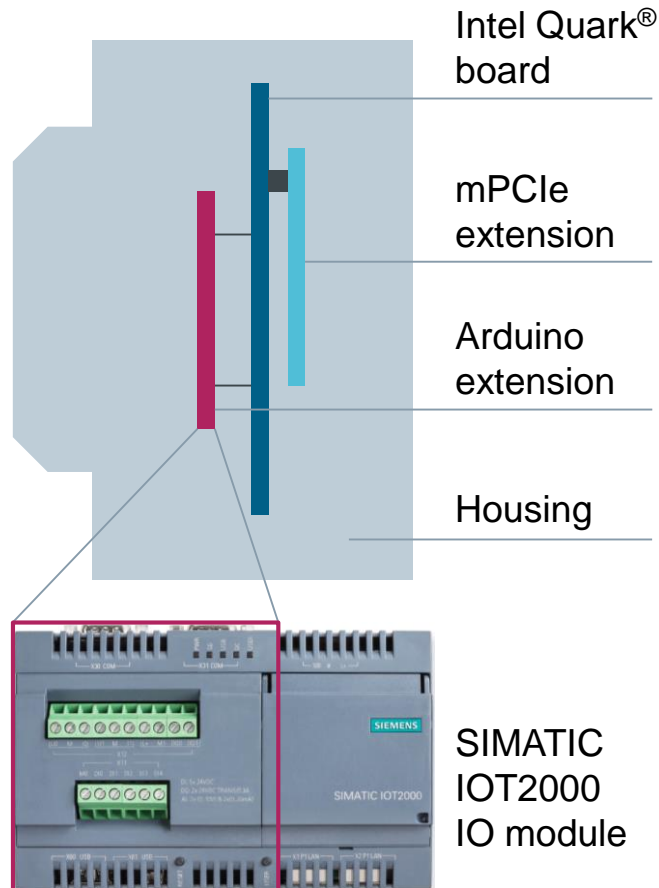
Easy connection to automation level
with PROFINET¹⁾ and openness to
cloud based solutions



1 Planned

Expandability to realize cost-efficient solutions – Flexibility to connect various data sources

Connectivity



Feature/function

- Expandable with certified Siemens IO module or with Arduino shields for IO/sensor connection
- mPCIe slot suited for radio communication like WLAN or LTE
- 2 independent Ethernet ports
- 2 serial interfaces (RS232/422/485)

Benefits

- Benefitting from the variety of expansion possibilities of Arduino
- Realizing mobile communication concepts
- Various possibilities to connect to legacy systems, sensors and different communication networks

SIMATIC IOT2040 – Product data overview

SIEMENS

SIMATIC IOT2040

| | |
|---------------------------------|---|
| CPU technology | Intel Quark® x1020 (x86 400 MHz) + Security |
| System memory | 1 GB DDR3 RAM, 8 MB Flash, 256 KB SRAM |
| Communication interfaces | 2x 10/100 Ethernet RJ45 |
| Serial interfaces | 2x RS232/485 switchable |
| Media interfaces | 1x USB Controller + 1x Device |
| Graphic processor | – |
| Extension | mPCIe + Arduino |
| IO-Module | 5x DI, 2x DO, 2x AI 6ES7647-0KA01-0AA2 41,-Euro LP |
| IO-Module Sink Source | 10x DI 6ES7647-0KA02-0AA2 41,-Euro LP |
| Mass storage | Yes, with microSD card ¹ |
| Embedded features | 5 LEDs (one user programmable), battery buffered real time clock, watchdog |
| Power supply | 9 ... 36 V |
| Operating temperature | 0 – 50°C |
| Certificates | Industry standards (CE, UL) |
| Dimensions (w x h x d) | 144 x 90 x 53 mm |
| Order number IoT 2040 | 6ES7647-0AA00-1YA2 199,-Euro LP |
| Power Supply for IOT2040 | |
| LOGO! Power 24V/1.3A | 6EP3331-6SB00-0AY0 49,-Euro LP |

¹ Not in scope of delivery; ² Image adaption necessary

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Software – 3rd party

Specific image creation

Poky
by Yocto Linux Project

Development environment and programming languages

- **Arduino DIE**
C/C++
- **Intel System Studio IoT Edition (Eclipse)**
Java
C/C++
Python and more²

Adapted Image

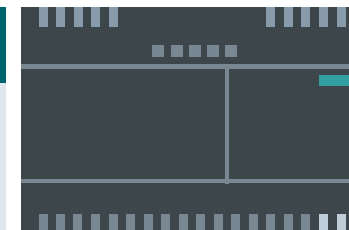
Application

Base Image

Download @
SIOS forum

Operating system

Arduino/
Yocto Linux



SIMATIC Industrial PC - portfolio

řady „D“ „E“ „G“



Rack PC Box Panel

Embedded industrial PCs
Fanless design

IPC127E
Ultra compact

NEW



IPC2x7
Compact



IPC4x7
Powerful



High-end industrial PCs
High functionality

IPC6x7
High performance



IPC8x7
Maximum expandability



IPC1047
EDGE, Virtualizace, Servery

NEW



Advanced industrial PCs
Latest PC technology

IPC5x7
Maximum performance



Basic industrial PCs
Attractive price

IPC3x7
Ex stock



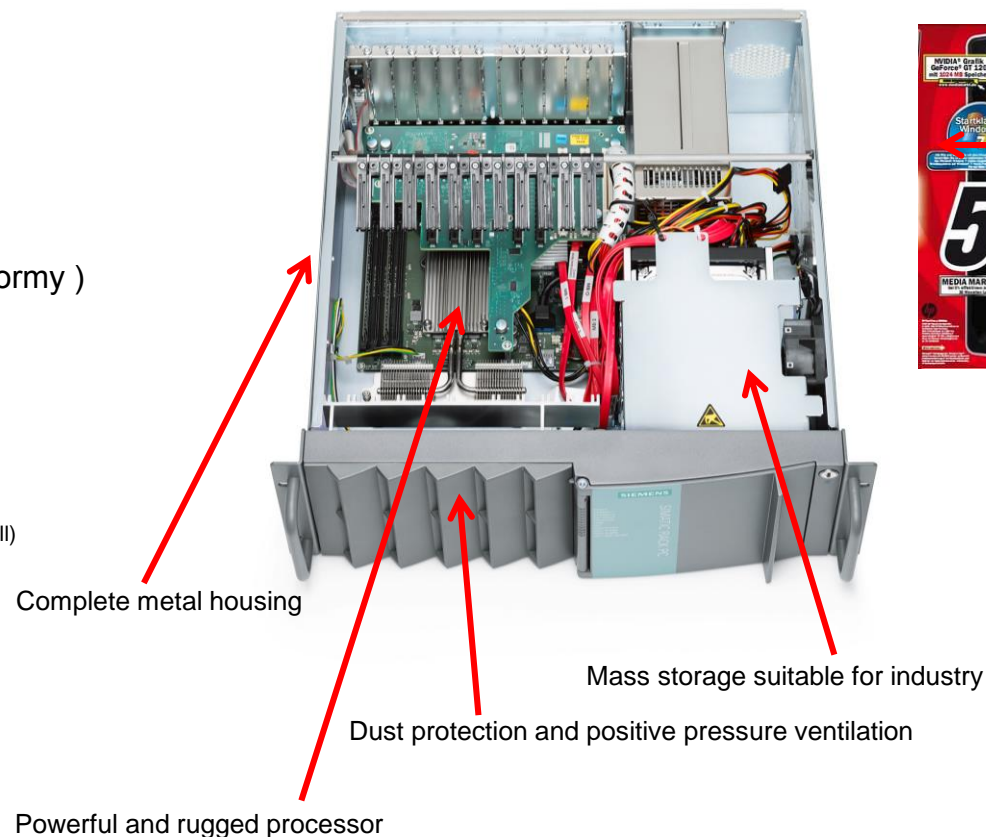
**DOSTUPNOST
11 LET**

**DOSTUPNOST
6 LET**



Průmyslový počítač IPC vs. Komerční počítač PC

- 90mil konfiguračních možností
- Robustní celokovová konstrukce pro provoz 7/24
- Odolnost vůči vibracím
- Odolnost vůči prachu
- Odolnost vůči teplotám (základ od cca 0-60°C, speciálky od -40°C do 65°C)
- Bez údržbové provedení
- Krytí od IP20 – IP65 (Ex zona 1 a 2)
- Nerezové provedení INOX s krytím IP69k (všude kde požadují hygienické normy)
- Dotykové obrazovky s SINGLE / MULTI TOUCH pro práci v rukavicích
- Dodací lhůta 15 pracovních dní (řady IPCs 3xx skladem)
- Záruka 3 roky zdarma
- Možnost rozšíření záruky na 4roky za Box/Rack PC 140,-€ a Panel PC za 210,-€
- Dostupnost IPC modelu a ND až 11 let
- Rozšiřitelnost HW IPC – RAM, HDD/SSD PCI atd. (dle kapitoly 6 manuálu a Industry Mall)
- Speciální a zákaznické provedení od 1kusů IPC
- Příslušenství – kryty, držáky atd.
- Certifikace
- Celosvětová technická pomoc, servis a ND
- Zápůjčka IPC zdarma = HW a SW pro test aplikací
- Diagnostika
- Multi monitoring (5x IPC547E/G nebo 6x IPC647E/847E)
- Komunikace min. 2x ETH/IE - Profibus / Profinet / OPC UA
- Kompatibilita s produkty Siemens , TIA Portal atd.
- Užitečné programy – SW DiagMoitor, Remote Control, Image Creator, Package for VxWorks atd.
- Cenově zvýhodněné balíčky - Bundle a package IPC a WinCC



Excellent for
Facebook &
Eshop

WinCC V7.5 – 1. Příklad Single Station IPC a WinCC za 5.880,-Euro Package s SIMATIC IPC347E

SIEMENS

WinCC V7.5 RT 8192 PT

6AV6381-2BH07-5AX0

5.667 € list price 150.000,-czk



3rd party PC – počítač třetí strany

Je určený pro průmyslové prostředí?

Má zaručenou dlouhodobou dostupnost?

Má certifikaci, diagnostiku, komunikaci?

Srovnatelné PC třetí strany by mělo stát
max. 213,- € - v ceníkové ceně! 5.600,-CZK

Alternativa
SCADA &
IPC
Package

WinCC V7.5 RT 8192 PT package

6AV6382-2HA07-5AX0

4.550 € LP (cca -25%)

Cca 120.000,-CZK



SIMATIC IPC347E – Rack PC

6AG4012-1AA21-0BX0

(Dual Core, 4GB RAM, 500GB HDD, Win 7 Ultim.)

1.330,- € list price 35.000,-CZK



5.880,-€ list price WinCC/IPC-Package 156.000,-CZK

WinCC V7.5 – 2.Příklad Single Station IPC a WinCC za 5.890,-Euro Package s SIMATIC IPC377E

SIEMENS

WinCC V7.5 RT 8192 PT

6AV6381-2BH07-5AX0

5.667 € list price 150.000,-czk



3rd party PC – počítač třetí strany

Je určený pro průmyslové prostředí?

Má zaručenou dlouhodobou dostupnost?

Má certifikaci, diagnostiku, komunikaci?

Srovnatelné PC třetí strany by mělo stát max. 223,- € - v ceníkové ceně! 5.900,-CZK

Alternativa
SCADA &
IPC
Package

WinCC V7.5 RT 8192 PT package

6AV6382-2HA07-5AX0

4.550 € LP (cca -25%)

Cca 120.000,-CZK

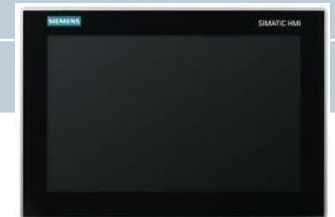


SIMATIC IPC377E – Panel PC

6AV7230-0CA20-2BA0

(12" touch (1280 x 800), Celeron, 4GB RAM, 500GB HDD, Win 10 LTSP)

1.340,- € list price 35.000,-CZK



záruka
3 roky

5.890,-€ list price WinCC/IPC-Package 156.000,-CZK

Package / Bundle = IPC + WinCC RT

IPC a WinCC zvlášť (package)
2x objednáací číslo (1.a 2.příklad)

IPC a WinCC dohromady (Bundle)
1x objednáací číslo

Tia Selection Tool

Panel PC - SIMATIC IPC od 7“ do 46“



- Panely od 7“ do 24“ + 46“
- Dotykové obrazovky s SINGLE / MULTI TOUCH pro práci v rukavicích
- 12“-22“ Monitory a Ethernet Monitory
- 12“-22“ Thin Client
- 15“, 19“, 22“ Panely PRO – IP65 all around (IP69K Inox)
- 15“ a 19“ Panely EX (zona 1 a 2)



IPC 277E



IPC 377E

Cena od 1.150,-Euro

(12“ panel PC)

bez Profinetu

skladem

NEW



IPC 477E

Panel IPC 477E 24“



IPC 677D

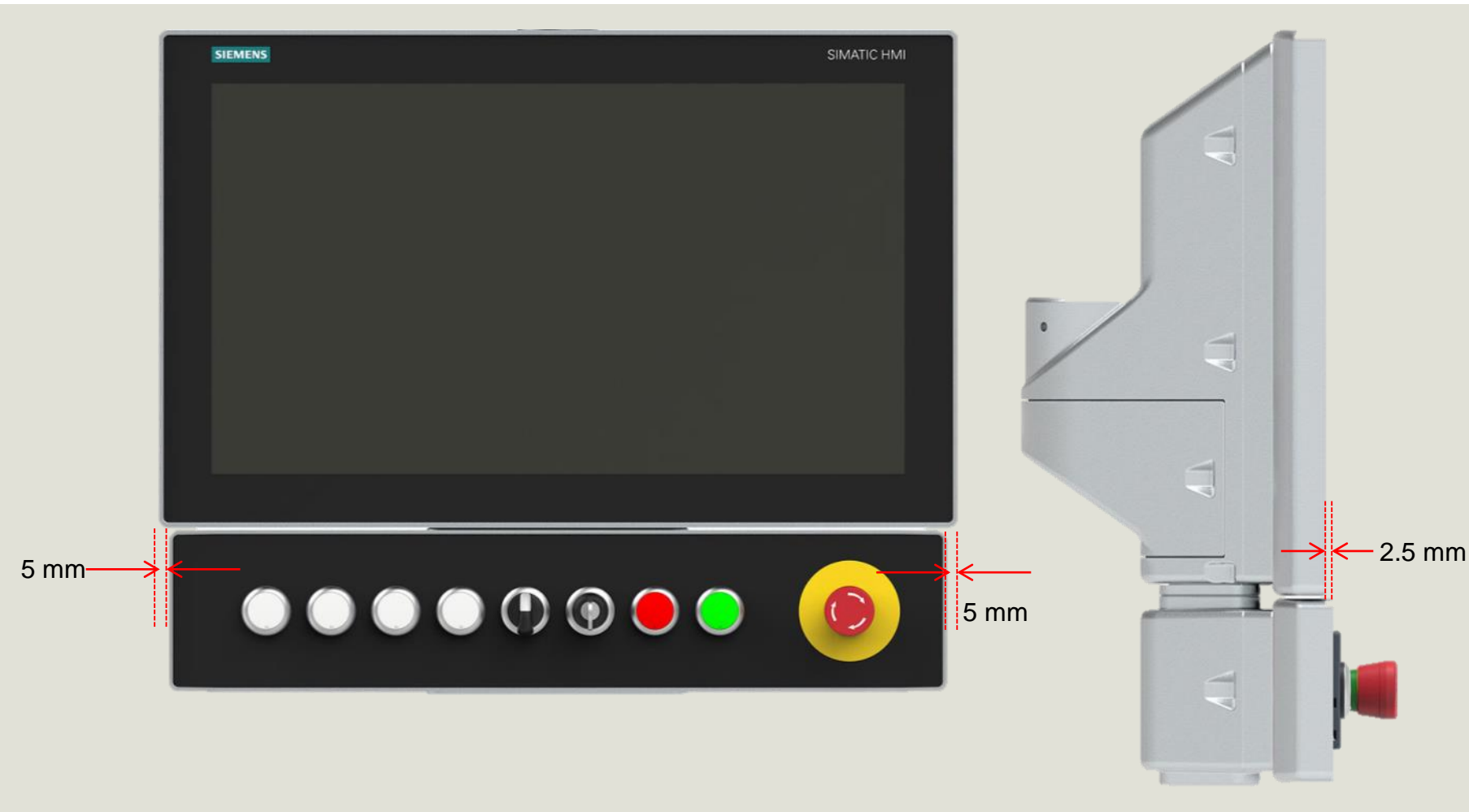


Technical details: General - Fit accuracy(IPC and IFP) Combination PRO device 19" and Extension Unit



The following must be observed for the PRO device **19"** in combination with an Extension Unit:

- Light stage between basic unit and Extension Units
- Different width for basic unit and Extension Unit 19" (5 mm each side)



Range of HMI&IPC solutions with all-round IP65 protection

System components at a glance

SIEMENS



Advanced operation with Extension Units ✓

- Expansion of the basic unit by additional operator control and monitoring
- ... with a multitude of elements

Customization by means of labeling ✓

- Individual labeling of the Extension Unit operator controls is possible
- Labeling as label holder or as inscription plate

Stainless steel keyboard and accessories ✓

- Keyboard or keyboard tray can be expanded
- Optional USB connection to the basic adapter

Mounting accessories ✓

- Mounting accessories allow for flexible connection of the Extension Unit and connection to additional mounting systems

Technical details: System components

User login with RFID card reader

SIEMENS

Local user administration

Free application in the Online Support: 99808171

User Login to Operator Panels with RFID Card Reader

- SIMATIC Comfort Panels
- SIMATIC IPC
- SIMATIC HMI PRO devices
- WinCC Advanced V14 SP1

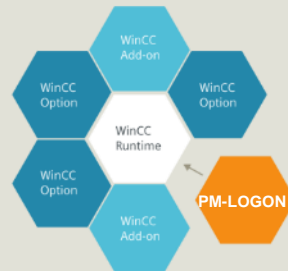


<https://support.industry.siemens.com/cs/ww/en/view/99808171>

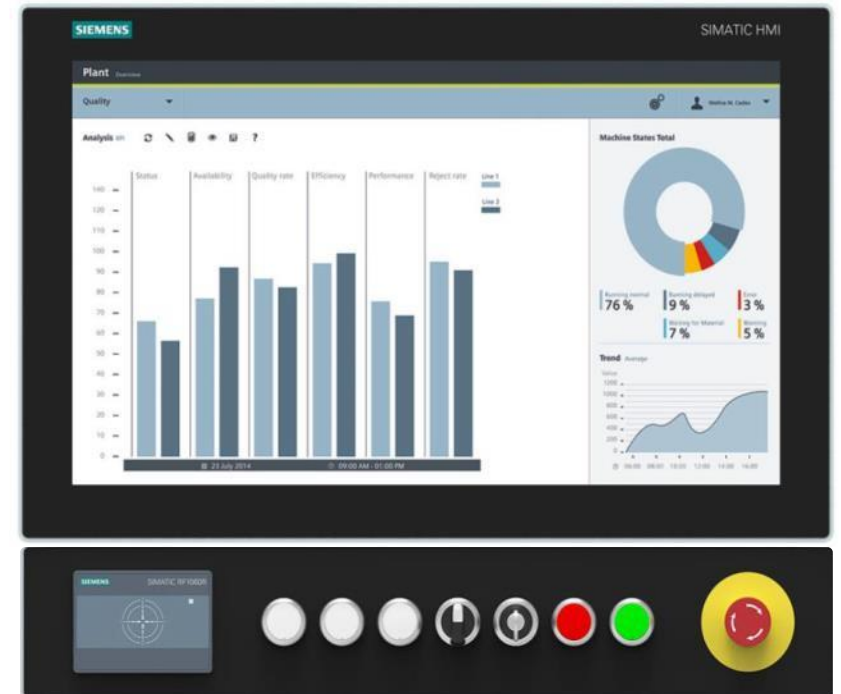
Central user administration

Fee-based PM-LOGON Premium add-on for login, e.g. RFID with central user administration:

- SIMATIC Comfort Panels
- WinCC RT Professional & Advanced
- WinCC 7.X and PCS 7



<https://www.siemens.de/industrysolutions/de/de/wincc/produkte/pm-logon/seiten/default.aspx>



BOX IPCs

- INSTALACE na DIN lištu (NANO a MICRO BOX)
- INSTALACE na ležato (NANO BOX)
- INSTALACE na štorc (NANO BOX)
- Ultra BOX velikost = 0,3 L (nejmenší IPC)
- Nano BOX velikost = 1 litrové provedení
- Micro BOX velikost = 1,7 litrové provedení



SIMATIC IPC827E



SIMATIC IPC627E



SIMATIC IPC427E

Cena od 680,-Euro (LP)



SIMATIC IPC327E

Cena od 580,-Euro (LP)

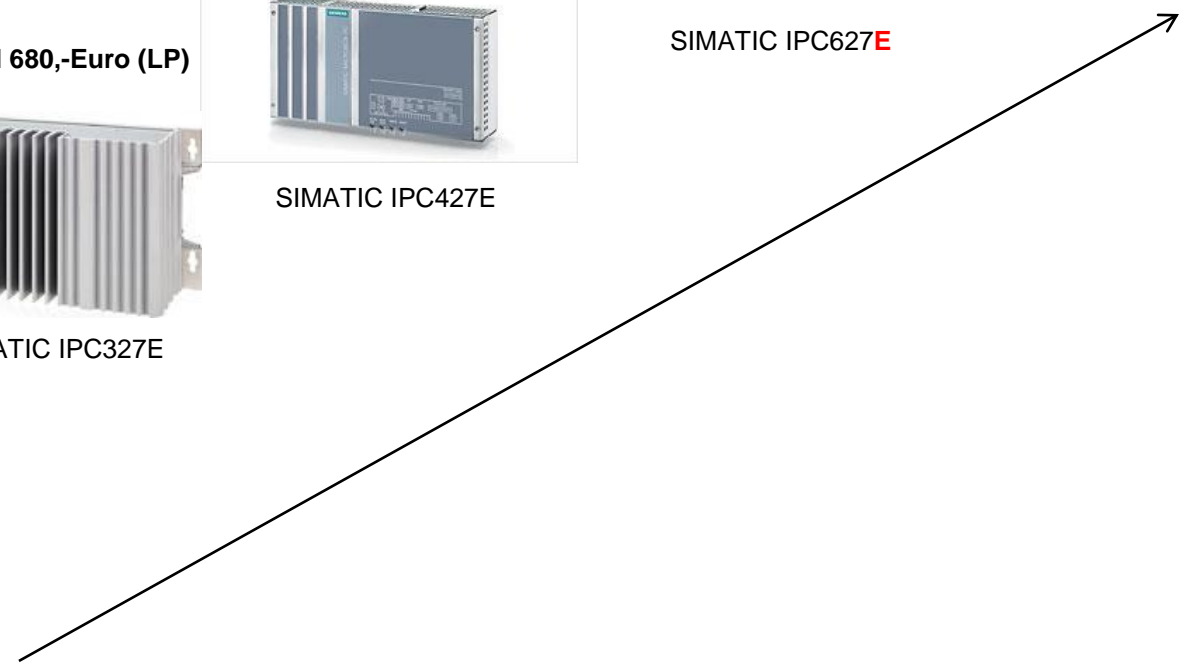
NEW



SIMATIC IPC127E



SIMATIC IPC227E



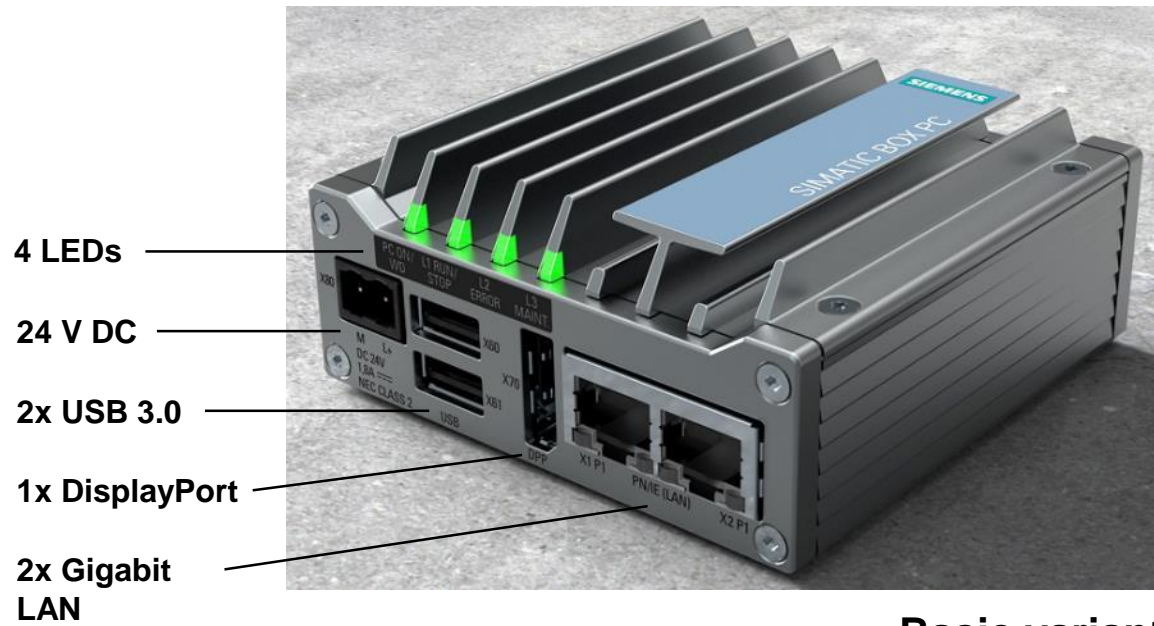


SIMATIC IPC127E

Technology slides

SIMATIC IPC127E interfaces

SIEMENS



Basic variant



Extended variant

SIMATIC IPC127E – Comparison with the "neighbors" in the portfolio

SIEMENS

IPC227E

Plus

- PCIe interface (optional)
- Premium power supply (pot. free, NAU signal, buffering)
- Multiple/Changeable mass storage (CFast)
- Maximum ruggedness (ET optional)
- NVRAM (optional)
- Windows 7 Support
- Full TIA integration (WinCC RT, Soft SPS)
- Special Certificates
- Built to order

Minus

Housing size

IPC327E

Plus

- COM ports, 2nd graphics interface, mPCIe interface)
- Windows 7

Minus

Housing size

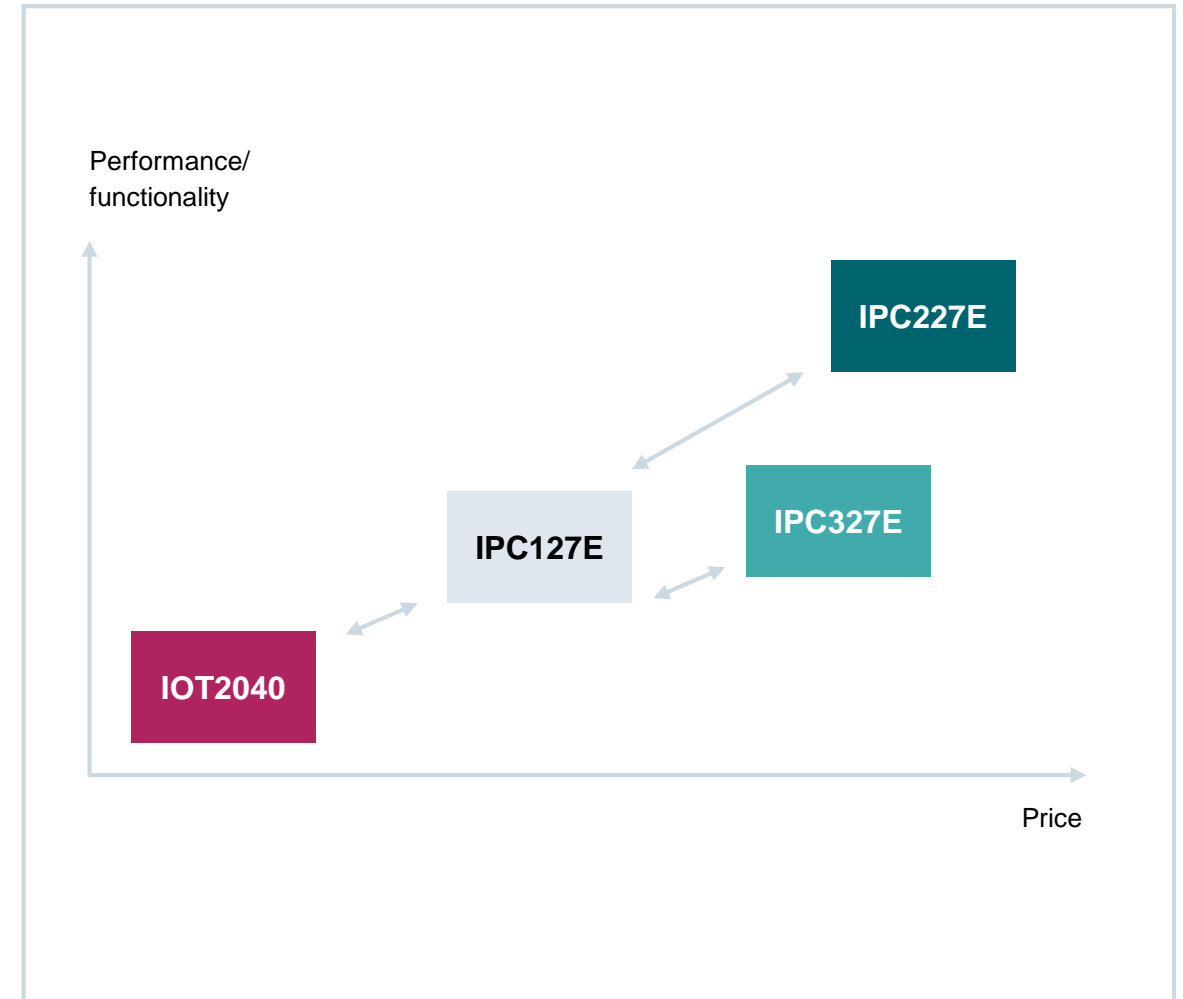
IOT2040

Plus

- Community Support
- IO/Arduino + mPCIe interface + COM interface

Minus

- No x86 architecture
- No standard Siemens support (no hotline)
- Windows Support
- TIA Integration (WinCC RT)



SIMATIC IPC127E

Operating system – Windows 10 Enterprise

SIEMENS

Windows 10 Enterprise LTSC 2016

- LTSC – Long Time Service Branch
→ 10 years support from Microsoft
- Windows 10 as 64-bit version
- Multilingual / MUI (En, De, Fr, It, Sp)
- Reduced footprint without consumer apps
- No entry of Windows Key necessary



Updates

Import and use of current Windows 10 updates possible by user



Security

All known security settings are possible



SIMATIC IPC127E

Technical specifications

SIEMENS

| Design | |
|-------------------|---|
| Processor | <ul style="list-style-type: none">▪ Intel Atom E3930 (2 core; 1.30 GHz; 2 MB L2; 6.5W; HD 500 Graphics)▪ Intel Atom E3940 (4 core; 1.60 GHz; 2 MB L2; 9.5W; HD 500 Graphics) |
| Main memory | <ul style="list-style-type: none">▪ 2 GB RAM (for E3930)▪ 4 GB RAM (for E3940)▪ DDR4, not exchangeable |
| Chip set | <ul style="list-style-type: none">▪ Integrated in processor |
| Graphics | <ul style="list-style-type: none">▪ Integrated in processor▪ DisplayPort resolution: 640 × 480 pixels to 4096 × 2160 pixels▪ Up to 512 MB graphics memory is taken from main memory, UMA, dynamic |
| Power saving mode | <ul style="list-style-type: none">▪ Wake-on-LAN▪ Wake-on-USB |
| Operating system | <ul style="list-style-type: none">▪ None▪ Windows 10 Enterprise LTSC 2016, 64-bit, MUI (En, De, Fr, It, Sp)▪ Preinstalled Linux software available soon |
| Power supply | <ul style="list-style-type: none">▪ 24 V DC (±20%; buffering up to 5 ms)▪ Without electrical isolation▪ Power button |
| Power consumption | <ul style="list-style-type: none">▪ E3930: typ. 13 W▪ E3940: typ. 15 W |

SIMATIC IPC127E

Technical specifications

SIEMENS

| Drives | |
|-------------------------|--|
| Solid-state drive | <ul style="list-style-type: none">▪ 32 / 64 / 128 GB (M.2; without power loss protection) |
| Interfaces | |
| USB | <ul style="list-style-type: none">▪ Basic device variant: 2 x USB3.0▪ Extended device variant: 4 x USB3.0▪ Limited total current output |
| Ethernet | <ul style="list-style-type: none">▪ Device variant Basic: 2 x Gigabit Intel I210 (RJ-45), teaming capable▪ Extended device variant: 3 x Gigabit Intel I210 (RJ-45), teaming capable▪ Independent Intel Springville i210 LAN controllers in each case |
| PROFINET IO with RT | <ul style="list-style-type: none">▪ Via Standard Ethernet interfaces |
| Graphics | <ul style="list-style-type: none">▪ 1 x DisplayPort V1.2 |
| Miscellaneous | |
| Diagnostics | <ul style="list-style-type: none">▪ Simatic DiagBase▪ Simatic DiagMonitor▪ 1x Power LED / 3x User LED freely-programmable |
| Monitoring functions | <ul style="list-style-type: none">▪ Temperature, watchdog, mass storage, CMOS battery (message local via software SIMATIC IPC DiagBase; battery also with BIOS boot) |
| Battery-free operation | <ul style="list-style-type: none">▪ Battery-free operation possible if no time synchronization is required or if time synchronization via LAN is used |
| Service USB Flash Drive | <ul style="list-style-type: none">▪ BIOS and SW update; partition changes, diagnostics SW: via SIMATIC IPC Service USB Flash Drive (as accessory) |

SIMATIC IPC127E

Technical specifications

SIEMENS

Dimensions

Basic variant

- W x H x D = approx. 85 x 85 x 41 mm (without mounting accessories)

PCIe variant

- W x H x D = approx. 85 x 104 x 41 mm (without mounting accessories)

Installation options

Mounting types

- DIN rail
- Wall mounting
- Book mounting Basic
- Book mounting Extended
- Book mounting DIN rail



Accessories

Dust-protection set for interfaces

- Protection of the interfaces against ingress of dust
- Set for 40 USB, 20 LAN and 10 DisplayPort interfaces (COM interface sockets self-contained, i.e. no cover is required here)
- MLFB no.: 6ES7648-1AA50-0XG0



SIMATIC IPC127E

Technical specifications

SIEMENS

| Ambient conditions | |
|--|--|
| Vibration | <ul style="list-style-type: none">▪ Up to 1 g |
| Shock | <ul style="list-style-type: none">▪ Up to 15 g |
| Ambient temperature operation | <p>Standard mounting position (interfaces at top / bottom)</p> <ul style="list-style-type: none">▪ E3930: 0 °C to 50 °C / 55 °C *▪ E3940: 0 °C to 45 °C / 50 °C * <p>Book mounting (interfaces at front; basic device) / Wall mounting or mounting onto standard rail (interfaces at side) / Book mounting on standard rail (interfaces at top / bottom)</p> <ul style="list-style-type: none">▪ E3930: 0 °C to 45 °C / 50 °C *▪ E3940: 0 °C to 40 °C / 45 °C * <p>Basic device: Book mounting on standard rail (interfaces at front)</p> <ul style="list-style-type: none">▪ E3930: 0 °C to 40 °C / 45 °C *▪ E3940: 0 °C to 35 °C / 40 °C * <p>*) BIOS power switch set to "Temperature optimized" and USB load max. 1 W</p> |
| Protection against ingress of solid foreign bodies | <ul style="list-style-type: none">▪ ≥ 1 mm |
| Approvals | <ul style="list-style-type: none">▪ CE▪ UL |

SIMATIC IPC127E

Device variants and article numbers

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| MLFB | CPU | | Device variant | | Operating system | | SSD | | |
|--------------------|---------------------------------|---------------------------------|----------------|----------|------------------|---------------------------------------|-------|-------|--------|
| | Atom E3930 2C/2T 2 GB RAM | Atom E3940 4C/4T 4 GB RAM | Basic | Extended | None | Windows 10 Enterprise 2016 LTSC | 32 GB | 64 GB | 128 GB |
| 6AG4021-0AA11-0AA0 | x | | x | | x | | x | | |
| 6AG4021-0AA12-0BA0 | x | | | x | x | | | x | |
| 6AG4021-0AB11-0BA0 | | x | x | | x | | | x | |
| 6AG4021-0AB12-0CA0 | | x | | x | x | | | | x |
| 6AG4021-0AA11-1BA0 | x | | x | | | x | | x | |
| 6AG4021-0AB11-1BA0 | | x | x | | | x | | x | |
| 6AG4021-0AB11-1CA0 | | x | x | | | x | | | x |
| 6AG4021-0AB12-1BA0 | | x | | x | | x | | x | |
| 6AG4021-0AB12-1CA0 | | x | | x | | x | | | x |

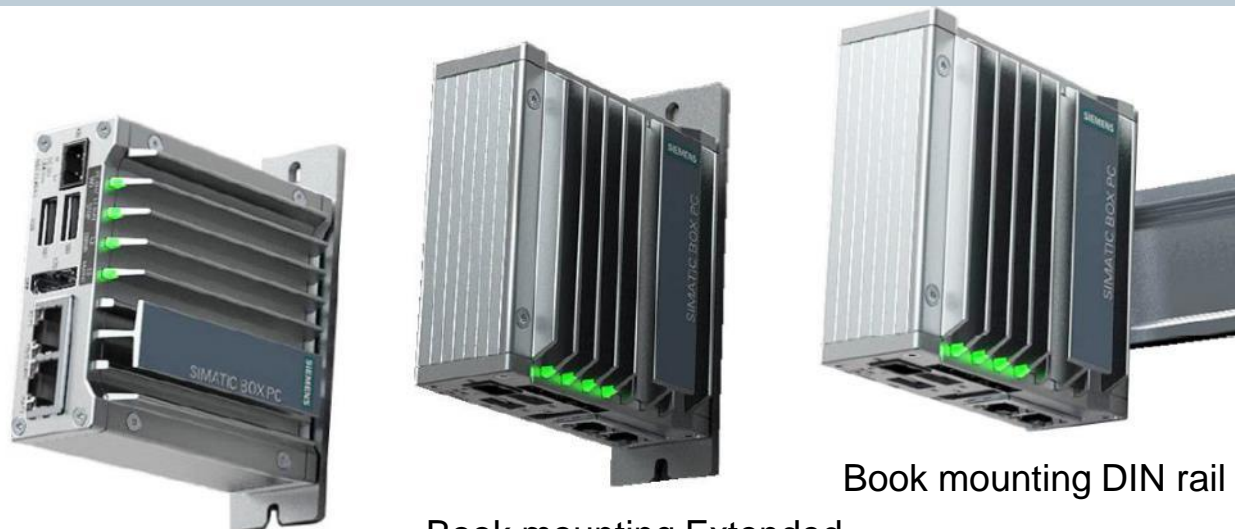


SIMATIC IPC127E

Mounting variants and article numbers

None of the device variants include mounting accessories.
These must be selected and ordered separately:

| MLFB | Mounting accessories |
|--------------------|------------------------|
| 6AG4021-0AA20-0AA1 | DIN rail |
| 6AG4021-0AA20-0AA2 | Wall mounting |
| 6AG4021-0AA20-0AA3 | Book mounting Basic |
| 6AG4021-0AA20-0AA4 | Book mounting Extended |
| 6AG4021-0AA20-0AA5 | Book mounting DIN rail |



Book mounting Basic

Book mounting Extended

Book mounting DIN rail



Wall mounting

DIN rail



RACK IPCs

- INSTALACE do 19" rack-u
- U IPC547 short verze
- Možnost KIT TOWER 547 a 847

CPU 2x 14 cores
RAM 2 TB ECC
2x NVIDIA Quadro P5000 GPUs



SIMATIC IPC1047

NEW

Kit Tower
Multi-monitoring 6x



SIMATIC IPC847E

Rozměry 2U



SIMATIC IPC647E

Kit Tower
Short ver.
Multi-monitoring 5x



SIMATIC IPC547G

LP cena od 850,-Euro
Bez Profinet-u
Skladem



SIMATIC IPC327E

SIEMENS



SIMATIC IPC1047

The IPC for high CPU and GPU performance

SIMATIC IPC1047

For application with high performance requirements

SIEMENS

Data processing and analytics

- High CPU performance
- Edge computing
- Fast package sorting



Image recognition and quality assurance

- Optical inspection: Welding seam, Pharma
- Irregular objects: F&B, Woodworking
Tools: surface roughness, 3D-Printing



Virtualization and server application

- Big data analytics, e.g. Edge comput.
- AI, e.g. Machine learning
- Industrial server, e.g. Wind park
- Virtualization, e.g. WinCC Scada



SIMATIC IPC1047

Highlights

SIEMENS



Intel
XEON

NVIDIA
P5000

PSU
860W

Raid
12Gb/s

High end system performance

- Dual socket Intel Xeon processor E5 - up to 2x 14 cores
- Up to 2 TB ECC RAM

High end GPU performance for industry

- Up to 2x NVIDIA Quadro P5000 GPUs

Flexible – Cards, Data, Power

- 6 PCIe Slots (3 x PCIe x8 and 3 x PCIe x16)
- Up to 8x 2,5" or 4x 3,5" – disk drives
- Powerful 860W supply

Robust and reliable - designed for industry

- 700W redundant power supply
- Up to 50°C environment temperature
- Hardware Raid controller
- 24/7 operation

SIMATIC IPC1047

Basic configurations / Ordering numbers



+ ITC – Industrial Thin Client

- Numerous supported protocols: RDP, SmartServer, VNC, HTML5 (SINUMERIK)
- Multisession for parallel connections with multiple servers with rapid switchover
- Integrated web browser, 1 x Gigabit-LAN and 2 x USB interface (rear)

| | IPC1047– CPU 6BK1800-1HA01-0AA0 |
|---|---|
| 1 | 19" 4HE Rack IPC 572mm |
| 1 | Dual Socket Xeon Mainboard |
| 4 | DDR4 8GB ECC 2400Mhz |
| 2 | Intel XEON E5-2620v4 @2,1GHz/ 8 cores |
| 1 | System/ Data SSD 480GB |
| 1 | Power Supply 860W |
| 1 | Windows 7 Professional |
| | |
| | |

8.800,00 EUR (LP)

| | IPC1047– GPU 6BK1800-1HA02-0AA0 |
|---|---|
| 1 | 19" 4HE Rack IPC 572mm |
| 1 | Dual Socket Xeon Mainboard |
| 4 | DDR4 8GB ECC 2400Mhz |
| 2 | Intel XEON E5-2620v4 @2,1GHz/ 8 cores |
| 1 | NVidia GPU Quadro P5000 |
| 1 | System/ Data SSD 480GB |
| 1 | Power Supply 860W |
| 1 | Windows 7 Professional |
| | |
| | |

14.200,00 EUR (LP)

| | IPC1047 – Virtualize 6BK1800-1HA03-0AA0 |
|----|---|
| 1 | 19" 4HE Rack IPC 572mm |
| 1 | Dual Socket Xeon Mainboard |
| 16 | DDR4 8GB ECC 2400Mhz |
| 2 | Intel XEON E5-2658v4 @2,3GHz/ 14 cores |
| 1 | Adaptec RAID ASR8405 (4port) |
| 1 | System/ Data SSD 480GB |
| 4 | Data SSD 1.9TB |
| 1 | Power Supply 700W redundant |
| 1 | Windows Server 2012 R2 |
| | |
| | |

29.990,00 EUR (LP)

SW k IPCs – DiagMonitor – obj.č. 6ES7648-6CA05-0YX0 Cena 180,-Euro LP

Mangementstation
SINEMA Server



Monitoring of IPC components

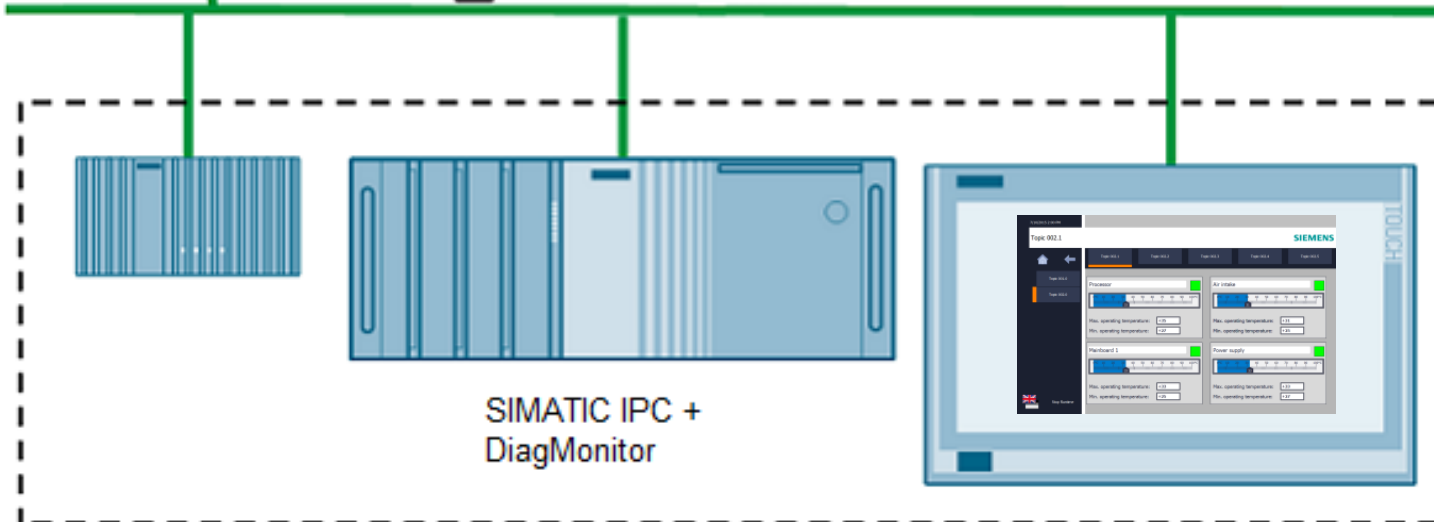
- Hard disk
- RAID
- CF card
- CF- fast card
- SSD
- Fan
- Temperature
- CMOS battery voltage
- System status

Reporting of critical statuses

Call of individual applications in the case of alarm

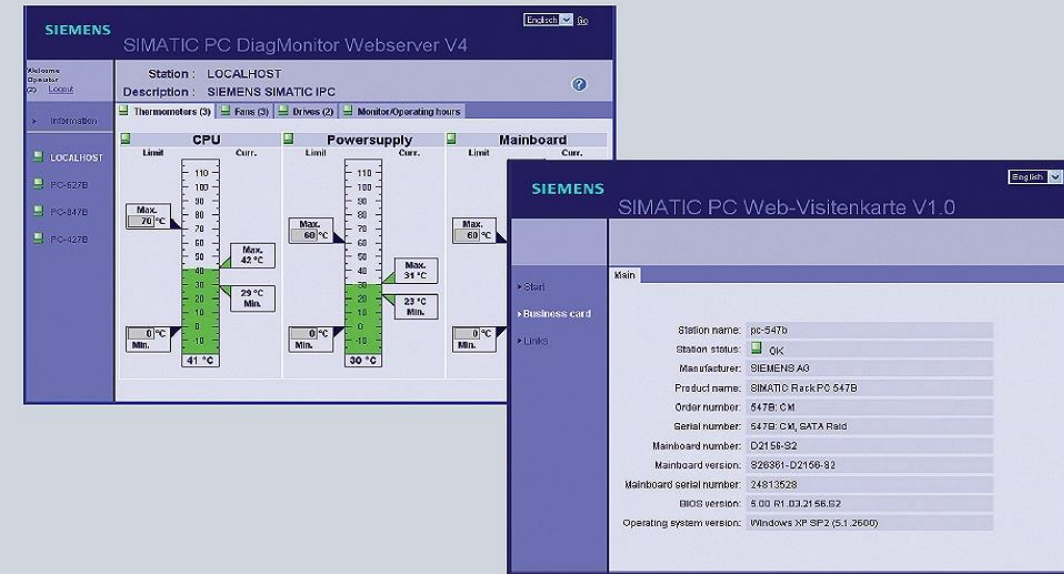
Logging of all events

Industrial Ethernet



SIMATIC IPC +
DiagMonitor

Visualisierung aller verfügbaren Temperaturmesswerte über Internet Browser /
Visualization of all temperature data via Internet browser



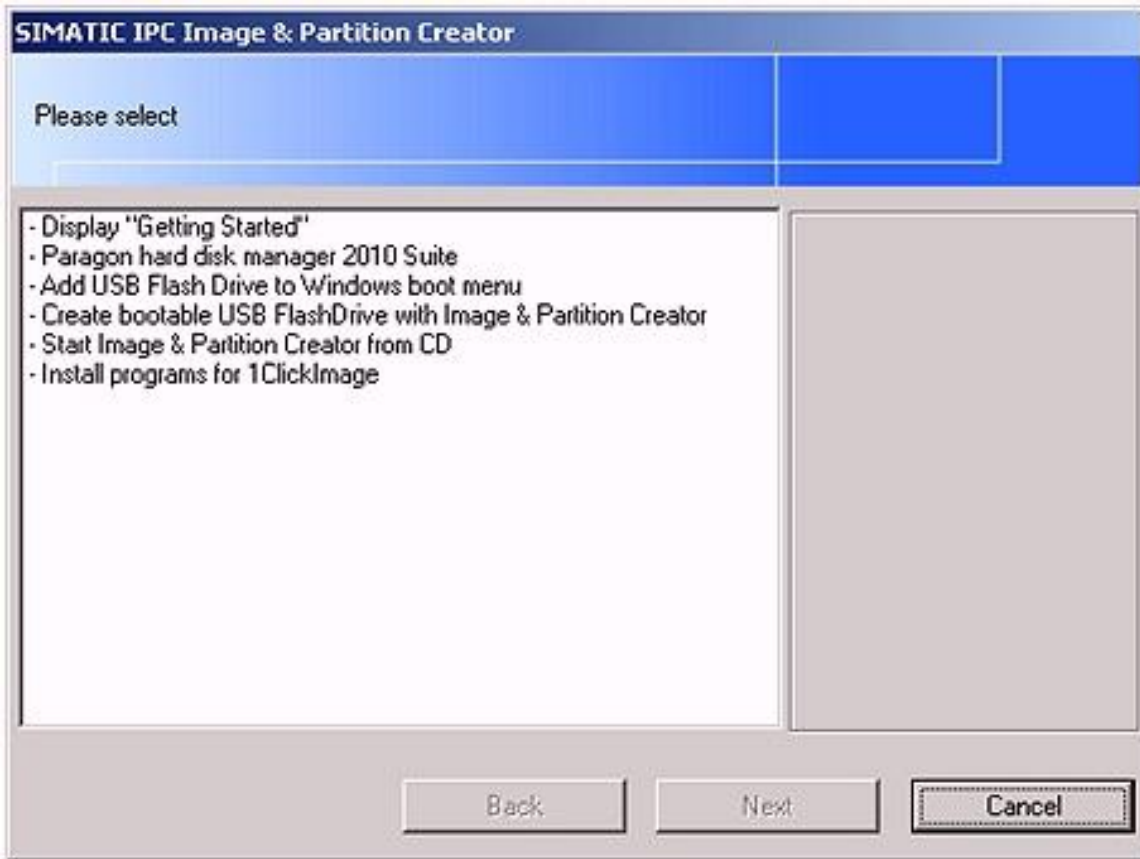
Online-Auskunft über Web-Visitenkarte / Online information via Web business card

Diagnostics functions s WinCC

PCDiagBridge enables the following diagnostics functions:

- SITOP UPS
 - operating state
 - error message
 - shutdown
- operator control and monitoring of
 - WinAC RTX (Run/Stop, error indication, operating state)
 - WinAC RTX F (Run/Stop, error display, operating state)

SW k IPCs - Image & Partition Creator – obj.č. 6ES7648-6AA03-4YA0 105,-Euro LP



SW k IPCs - Remote Manager – obj.č. 6ES7648-6EA01-2YA0 160,- Euro LP

Funkce:

Keyboard Video Mouse přesměrování (KVM) - Signál klávesnice-video-myš lze přesměrovat do nebo z počítače na IT oddělení, která umožňuje dálkové ovládání PC správcem bez dalšího hardwaru.

Remote Power Control – zapnout/vypnout PC

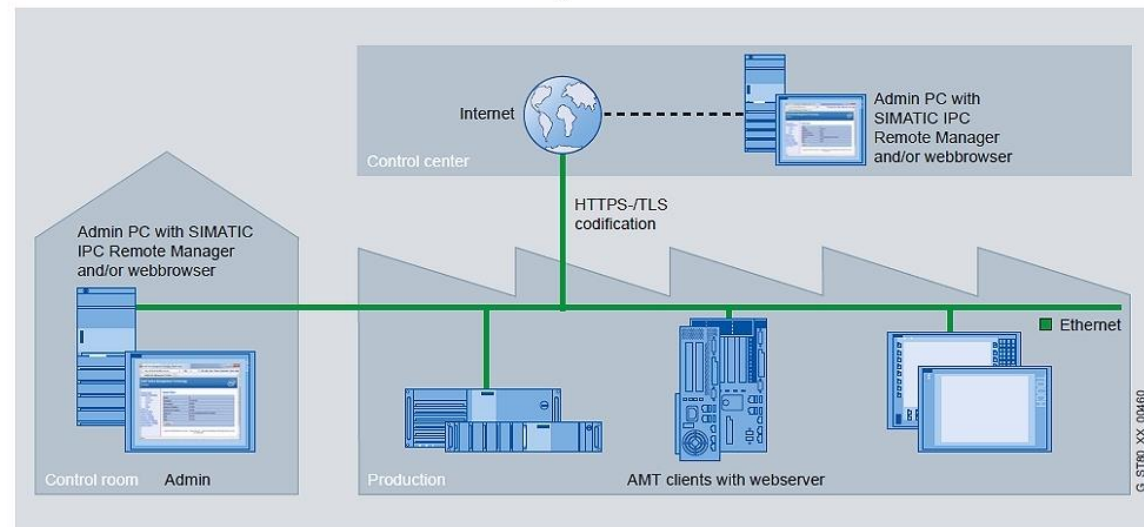
Remote Reboot - reset PC

start OS/boot z HDD/USB/CD atd.

IDE Redirection - Aby se zabránilo časově náročné manipulaci, například ISO soubor lze uložit na pevný disk

Management Console a ten může být k dispozici jako CD-ROM

SIMATIC IPC Remote Manager:
Efficient Remote Maintenance and Management of SIMATIC IPCs



SIMATIC IPC Support Package for Wind River® VxWorks® - obj.č. 6ES7648-6VA02-0YA0 350,-Euro LP

Supported SIMATIC IPCs

IPC4x7D



Embedded IPC

IPC6x7D
IPC827D



High-End IPC

IPC647D
IPC847D



Simatic IPC Support Package for VxWorks

Advantages

Real-time applications in the industrial environment

- Realization of industrial applications with high real-time requirements
- Achievement of short response times of **10 µs** on rugged SIMATIC IPC hardware
- Use of VxWorks as rugged, tried-and-tested real-time operating system for industrial use

Integration in SIMATIC automation

- PROFINET onboard for high-performance, cyclic and isochronous transfer of user data via industrial Ethernet
- PROFIBUS onboard as tried-and-tested, widely used fieldbus enables integration into a large number of fieldbus networks
- Use of detailed monitoring functions of SIMATIC IPCs (battery monitoring, temperature monitoring, fan monitoring, operating hours counter, support of retentive memory, watchdog, S.M.A.R.T.) to avoid system downtimes

Free programming and know-how protection

- Efficient programming in C/C++ for automation solution
- Open programming interface
- Protection of technology know-how (application is only available as executable code in the target system)

SIMATIC IPC Support Package for VXWORKS V2.0, Supports IPC 227E, IPC 277E, IPC 427D, IPC427E, IPC477E, IPC627D, IPC827D, IPC647D and IPC847D incl. DP and PN as well as diagnostic functions

SIMATIC HMI



F2

F4

F6



SIMATIC Průmyslový Tablet PC

SIMATIC Průmyslový Tablet PC – ITP1000

Nástup nové úrovně v průmyslovém mobilním programování

SIEMENS



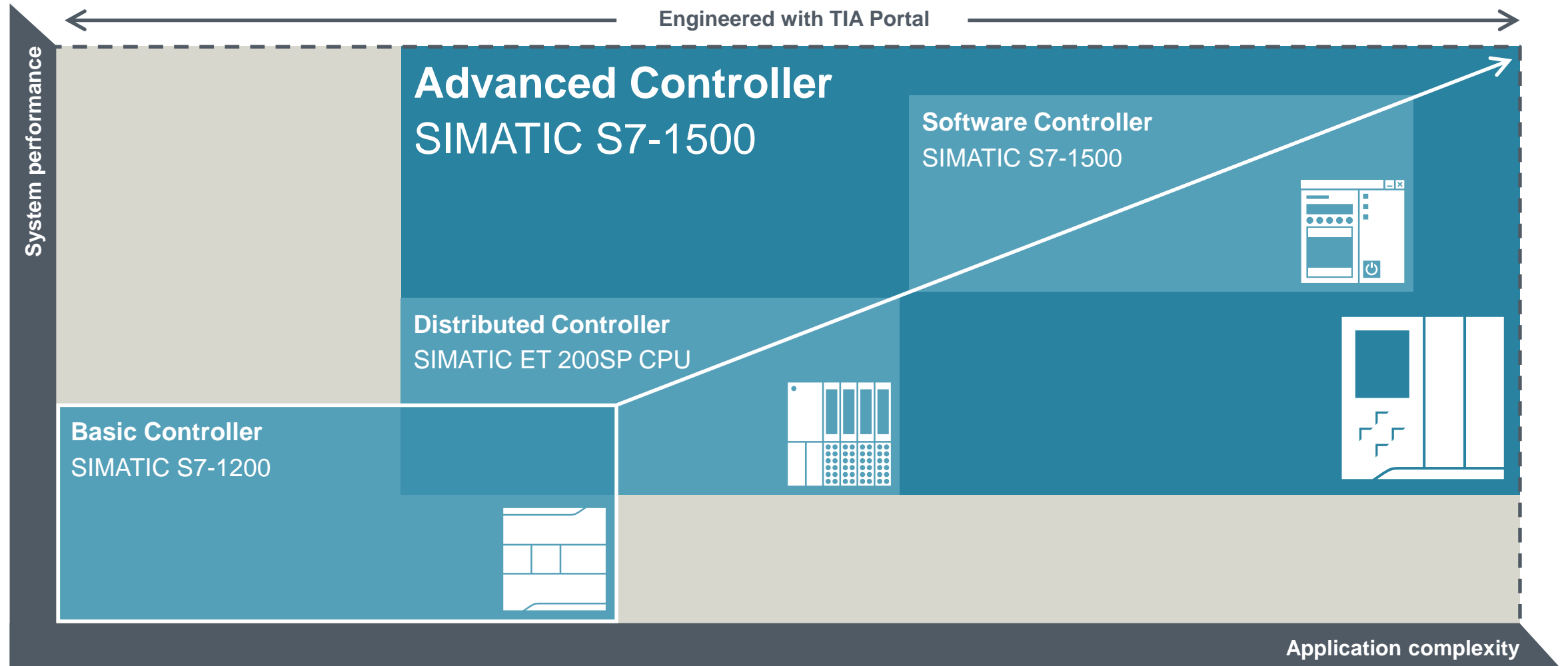
SIMATIC Průmyslový Tablet PC:

- + Poslední Intel **Core i5 “Skylake”** CPU s TPM 2.0
- + Podpora Windows 7 a 10
- + 10,1” display (1280x800) s **capacitive multitouch (1.generace)**
10.1” WUXGA format (resolution: 1920 x 1200, displayable colors: 16.7 million, vertical frequency: 60 Hz, contrast > 600 : 1, brightness: > 350 cd/m2)
Barcode reader can be configured using Zebra software
- + RFID, Barcode imager, camera
- + Připojení: WLAN, Bluetooth, LAN, USB 3.0,..
- + 6 programovatelných klíčových funkcí

New SIMATIC Controller generation

Always the right controller performance with integrated functions

SIEMENS



SIMATIC S7-1500 Software Controller

Technical Information

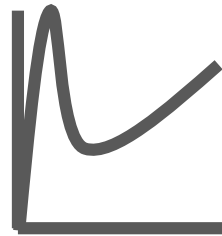
Unrestricted © Siemens AG 2018

www.siemens.com/software-controller

The S7-1500 Software Controller is supporting the functionality of a S7-1500 CPU



Motion Control



PID



Trace



OPC UA



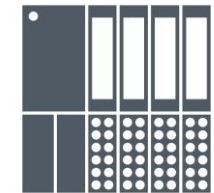
Diagnosis



Webserver



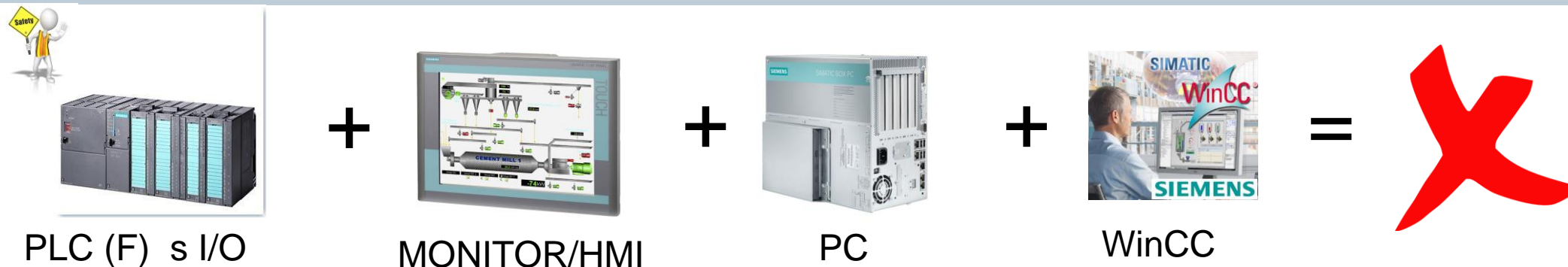
Security



Configuration Control

Further Information are available in the corresponding documents for the S7-1500

Řešení Siemens Simatic ALL IN ONE



- SW PLC / PLC (F) (SW PLC F od verze TIA portal V14)
- Panel IPC (spojení monitoru a počítače dva v jednom)
- ET200SP (I/O vzdálena periferie k SW PLC po PROFINET-u)
- WinCC (bundle – zvýhodněná cena o cca 30% HW + SW)
- SITOP (napájecí zdroj)
- UPS (záložní zdroj)



SIMATIC S7-1500 Software Controller Supported SIMATIC IPC Platforms

SIEMENS

Embedded Industry PCs

Highly rugged – Highly compact – Maintenance-free

Nanobox (Box und Panel PC)



CPU 1507S (F)

- IPC227E
- IPC277E



Microbox (Box und Panel PC)



CPU 1507S (F)
CPU 1508S (F) **new**

- IPC427E
- IPC477E



- IPC427D
- IPC477D

High-end Industry PCs

Very rugged – High performance – High functionality

Box und Panel PC



CPU 1507S (F)
CPU 1508S (F) **new**

- IPC627D
- IPC827D
- IPC677D



Rack PC



CPU 1507S
CPU 1508S **new**

- IPC647D
- IPC847D



1) Devices with NVRAM (e.g. buffered SRAM) required for operation of CPU 1507S F

HW PLC vs SW PLC (výkon)

Advanced Controller – SIMATIC S7-1500 CPU Portfolio has been enlarged by T-CPU

SIEMENS *Ingenuity for life*

| | Standard CPU | | | | Technology CPU | | | | | ET200SP Open Controller | | |
|--|--------------------|----------------------|--------------------|------------------|------------------|------------------|--------------------|--------------------|--------------------|-------------------------|-----------------------|------------------------|
| CPU-types | 1511F-1 PN | 1513F-1 PN | 1515F-2 PN | 1516F-3 PN/DP | 1517F-3 PN/DP | 1518F-4 PN/DP | 1511TF-1 PN | 1515TF-2 PN | 1516TF-3 PN/DP | 1517TF-3 PN/DP | 1515SP PC2 F PN | 1515SP PC2 TF PN |
| Interfaces | | | | | | | | | | | | |
| Program / Data memory | 150/225 KB 1 MB | 300/450 KB 1,5 MB | 500/750 KB 3 MB | 1/1,5 MB 5 MB | 2/3 MB 8 MB | 4/6 MB 20 MB | 225/225 KB 1 MB | 750/750 KB 3 MB | 1,5/1,5 MB 5 MB | 3/3 MB 8 MB | 1/1,5 MB 5 MB | 1/1,5 MB 5 MB |
| Bit-Performance | 60 ns | 40 ns | 30 ns | 10 ns | 2 ns | 1 ns | 60 ns | 30 ns | 10 ns | 2 ns | 10 ns | 10 ns |
| Width | 35 mm | 35 mm | 70 mm | 70 mm | 175 mm | 175 mm | 35 mm | 70 mm | 175 mm | 175 mm | 160 mm | 160 mm |
| Positioning axes - Typical ² - Maximum ³ | 5 10 | 5 10 | 7 30 | 7 30 | 70 128 | 128 128 | 5 10 | 7 30 | 55 80 | 70 128 | 30 30 | 30 30 |
| Motion Control Resources ⁴ | 800 | 800 | 2400 | 2400 | 10240 | 10240 | 800 | 2400 | 6400 | 10240 | 2400 | 2400 |
| Extended Motion Control Resources ⁵ | | | | | | | 40 | 120 | 192 | 256 | | 120 |

1 PROFINET IO with IRT 2 PROFINET IO with RT 3 PROFINET Basic communication 4 PROFIBUS

1 50 MB additional memory for ODK application | 2 At 4 ms Servo/IPO cycle time and 5% CPU load due to Motion Control | 3 No further TO's applicable | 4 Resources for Motion Control technology objects: Speed setpoint = 40 | Positioning = 80 | Gearing = 160 | Output cam = 20 | Output camtrack = 160 | Measuring input = 40 | 5 Resources for Extended Motion Control technology objects: Cams = 2 | Kinematics objects = 30

S7-1500 Software Controller Portfolio

| CPU Type | CPU 1507S (F) V2.6 | CPU 1508S (F) V2.6 |
|------------------------|--|--------------------------------------|
| Program-/ data memory | 5 MB (7,5 MB) 20 MB | 10 MB (15 MB) 100 MB |
| Bit Performance | 1 ns (Microbox, Core i7) | 1 ns (Microbox, Core i7) |
| PROFINET IO Interfaces | 1 | 1 |
| IO Devices | 128 (STD Ethernet) 256 (CP 1625) | 128 (STD Ethernet) 256 (CP 1625) |
| I/O space | 8 KByte | 16 Kbyte (CP 1625) |
| Number off connections | 128 | 192 |
| Standard Motion | 60 axis | 60 Axis |
| Platforms | IPC2x7E, IPC4x7E, IPC6x7D, IPC8x7D | ---, IPC4x7E, IPC6x7D, IPC8x7D |

HW PLC vs SW PLC (cena)



CPU 1518-4 PN/DP

Mounting rail S7-1500 rail, 245 mm

Memory card, 4 MB

TP1500 Comfort

LP 9.565,00 EUR

SIMATIC HMI IPC477E (Panel PC)

6AV7241-7BF02-0DH0

XEON E3-1505L; 3x Gigabit Ethernet (IE/PN)

15" Singletouch (1280 x 800) with front USB

4GB and NVRAM

no RS232/485, without PCIe

Windows Embedded Standard 7 SP1, English, 64Bit

without external mass storage

128 GB Solid-State Drive SATA

CPU 1507S / WinCC RT Advanced V15, 128PT

24V DC Industry power supply

HD Graphics onboard;

3x Gigabit Ethernet (IE/PN) RJ45;

4 x USB V3.0; 1x serial (COM1);

Watchdog, Temp-/Fan-Monitoring;

LP 4 640,00 EUR



SW PLC - základní řešení/cena

SIMATIC IPC277E (Panel PC)

6AV7882-0AA50-2EJ0

7" Touch (800 x 480)

Celeron N2807 (2C/2T)

4 GB RAM / NVRAM

Windows Embedded Standard 7E SP1, English, 64Bit

128 GB SSD

**CPU 1507S / WinCC RT Advanced V14, 128PT (V15 License package),
Recipes + Logging**

1 x DisplayPort graphics port,

2 x Gigabit Ethernet (IE / PN) RJ45, 1 x serial (COM1),

CompactFlash slot,

24 V DC industrial power supply

LP 2.700,00 EUR



SIMATIC S7-1500 Software Controller PROFINET Interfaces

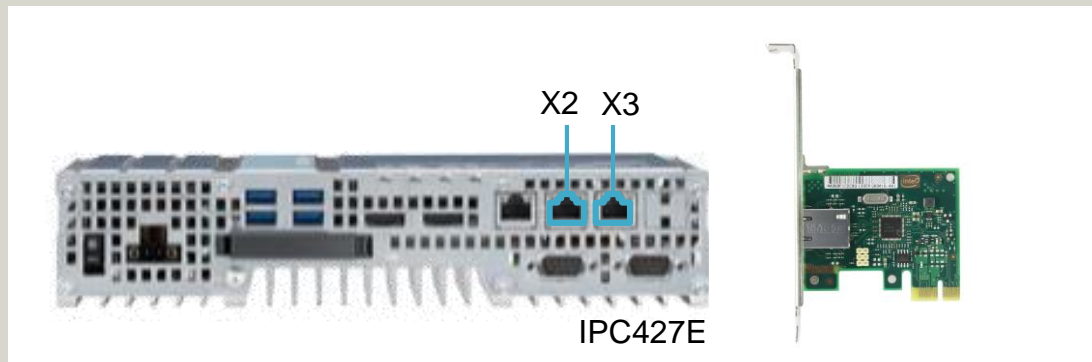
SIEMENS

PROFINET IO RT with standard Ethernet interface

| | |
|-------------------------|---------|
| • No devices | 128 |
| • Size IO Data | 8 Kbyte |
| • Bus cycle, min. | 1 ms |
| • Isochronous operation | - |
| • MRP/MRPD | - |
| • PROFIenergy | yes |

Supported interfaces

- Onboard PROFINET interfaces SIMATIC IPC (X2, X3)
- Intel i210T card

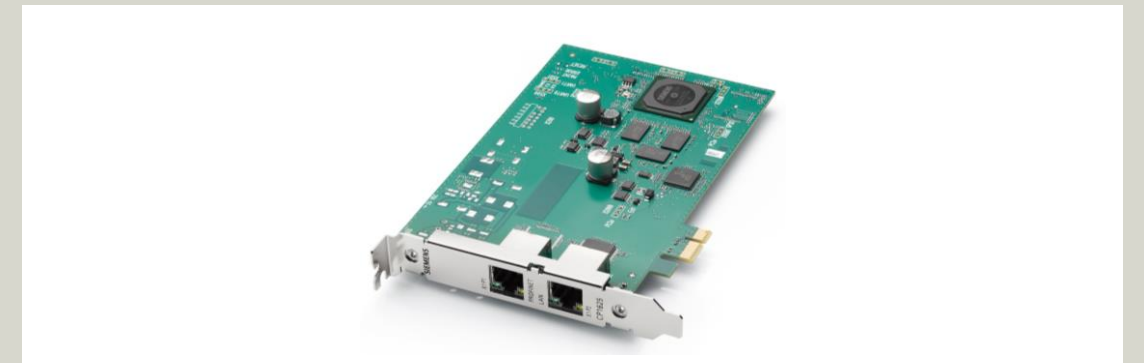


PROFINET IO IRT with CP 1625

| | |
|-------------------------|---|
| • No devices | 256 |
| • Size IO data | 8 Kbyte (CPU 1507S) 16 Kbyte (CPU 1508S) |
| • Bus cycle, min. | $\geq 500 \mu\text{s}$ |
| • Isochronous operation | yes |
| • MRP/MRPD | yes |
| • PROFIenergy | yes |

Supported interfaces

- CP 1625



SIMATIC ODK 1500S

Highlights

SIEMENS

Execution of function libraries out of the PLC program

- Execution of real-time algorithms
- Call to Windows DLLs

Robustness and Real-time

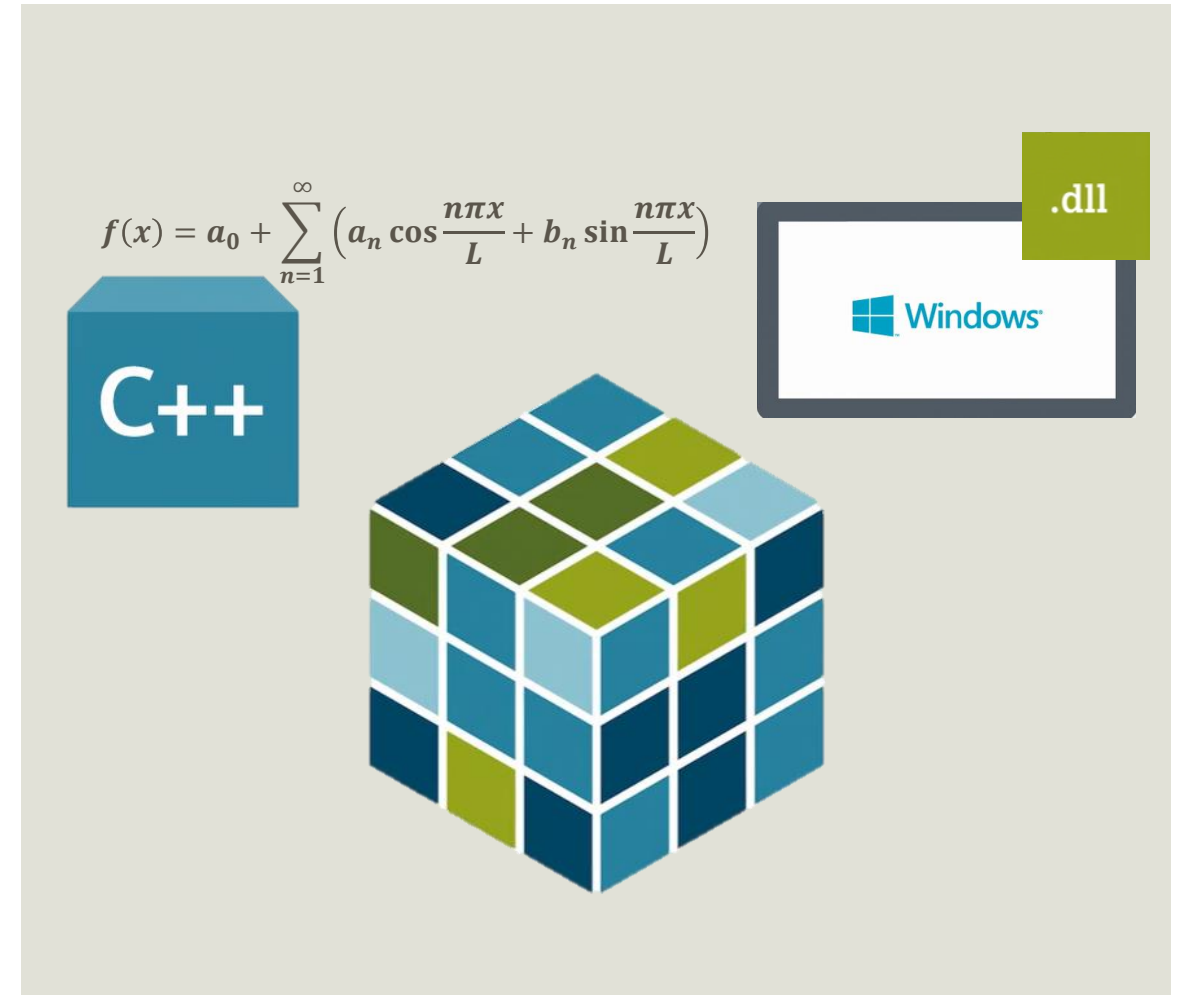
- Complete decoupling of Windows functions through asynchronous operation
- Preemptive execution of ODK RT applications

Usability

- Intuitive use of S7 FB for call to ODK applications

Security

- “Sandbox” execution for ODK RT applications
- No debugging of know how protected S7 blocks





- TIA Selection Tool

- <http://w3.siemens.com/mcms/topics/en/simatic/tia-selection-tool/pages/tab.aspx>

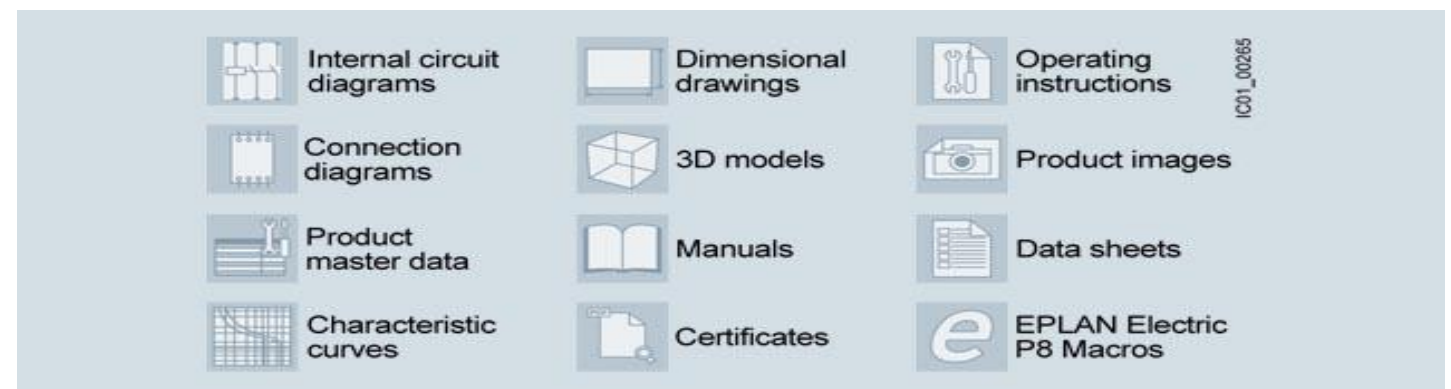
- Industry Mall

- <https://mall.industry.siemens.com/goos/WelcomePage.aspx?language=en®ionUr>

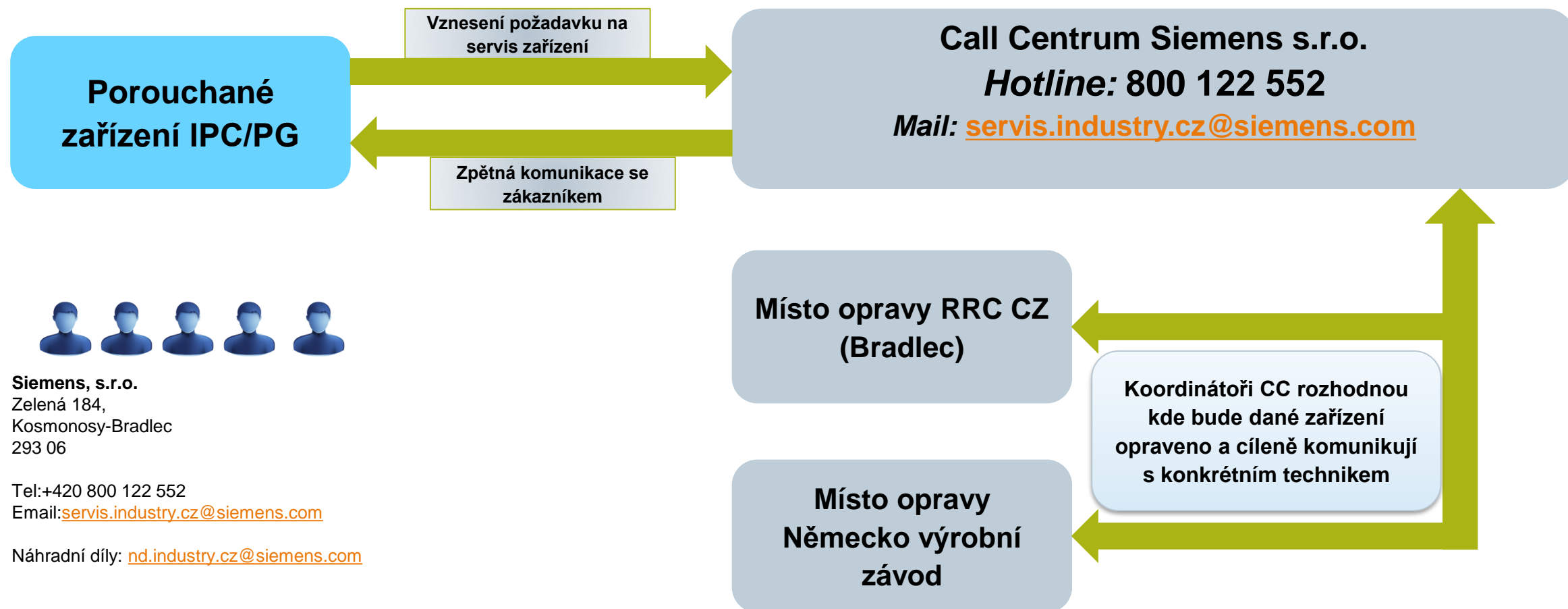


- CAx manager

- <https://support.industry.siemens.com/my/ww/en/CAxOnline#CAxOnline>



Struktura tvorby požadavku zákazníka na servis vadného zařízení IPC a PG



Děkuji - Thanks



Marián Pavlanský

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155 00 Praha

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siemens.com/IPC