SIMATIC Nano IPCs

New. Nano. Intel Atom.

Version: 11/2011
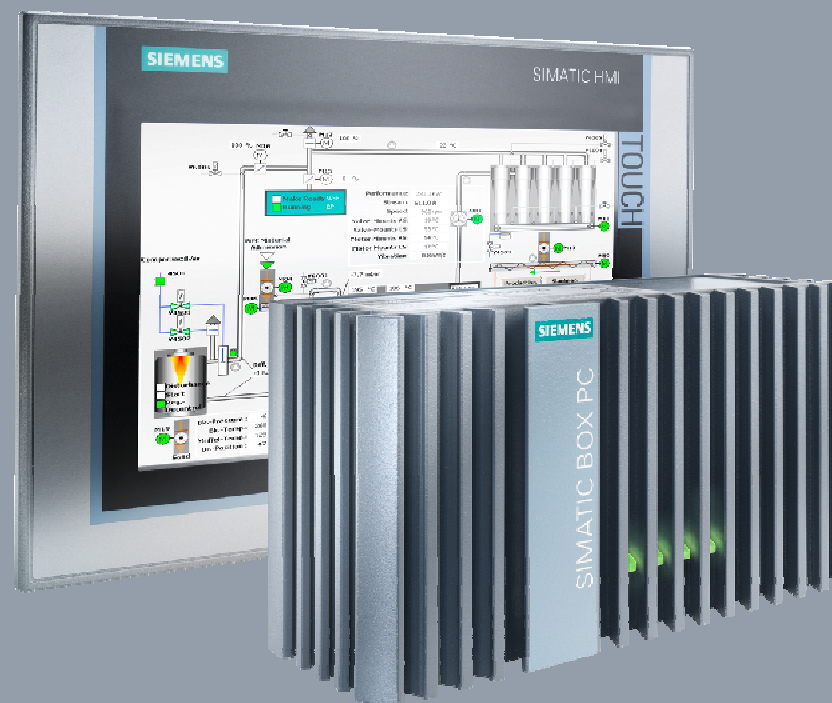
SIEMENS

product design award 2011

Nano IPCs SIMATIC IPC227D and IPC277D – New. Nano. Intel Atom.

SIEMENS

Manifold
Application
Options

High
Compactness

High Flexibility

High Ruggedness

High System
Availability

High Investment
Protection

Power-optimized Atom technology of the latest generation

Compact and flexible as Nanobox PC
SIMATIC IPC227D

Flexible as industrial-standard Nanopanel PC
SIMATIC IPC277D

Joint platform on identical mainboard basis

- Application of identical system software and drivers thanks to identical chipsets and processors
- Reduced evaluation expenditures for the application of various SIMATIC IPCs
- Reduced spares stocking, e.g. memories and CompactFlash cards

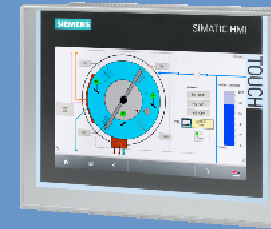# Nano IPCs SIMATIC IPC227D and IPC277D – Compact and Flexible

SIEMENS

Compact design with maximum flexibility

Nanobox PC
SIMATIC IPC227D

Nanopanel PC
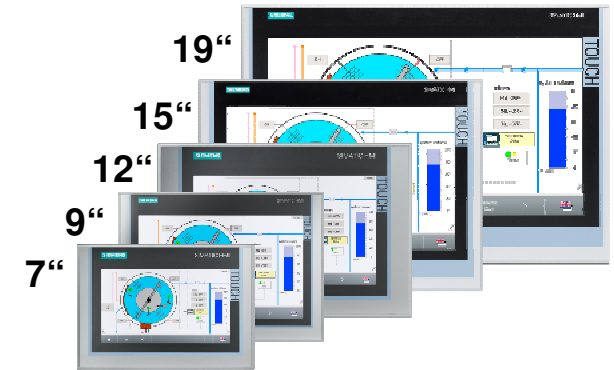SIMATIC IPC277D

19"
15"
12"
9"
7"

Compact 1-liter enclosure
with all interfaces
on one side

Diverse device
versions

Low mounting
depth from 66 mm

Wide-screen displays
from 7" to 19" diagonal

Nano IPCs SIMATIC IPC227D and IPC277D – Rugged and Power-Optimized

SIEMENS

High ruggedness

- Rugged enclosure and industrial-standard displays
- Non-volatile retentive memory for operation completely without batteries*
- Application of zero-maintenance embedded technology
  - Fan-free
  - Rugged flash bulk memory (SSD, CF)
    → no hard disk (optional)

Low power consumption

- Latest Intel Atom generation for low power consumption
- Energy-saving functions (SpeedStep and sleep states) for dynamic power adjustment to individual performance requirements
- Displays with 100% dimmable LED background illumination

* Battery implemented always. Battery not necessary if time is synchronized via network.

Nano IPCs –
Manifold Application Options

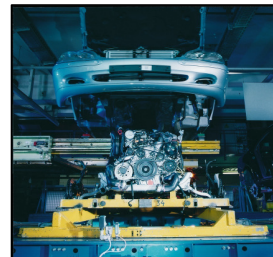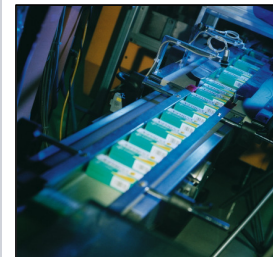**SIEMENS**

General mechanical engineering
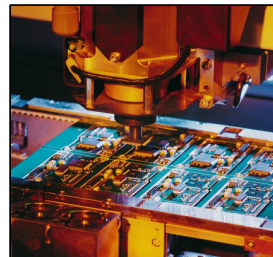
Semiconductors

Vehicle construction

Biotechnology / pharmaceutics

Power generation, distribution

Warehouses & logistics

Building automation
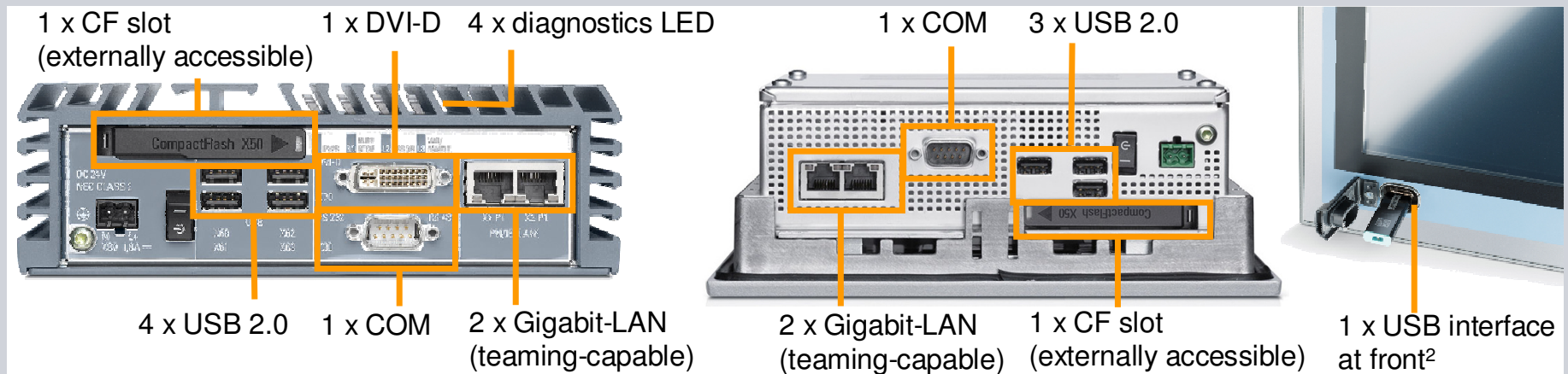

Traffic engineering

- Simple measuring and control tasks, e.g. with SIMATIC WinAC RTX software PLC (also for fail-safe applications)

- Simple operation & visualization tasks, e.g. with SIMATIC WinCC RT Advanced

- Communication and data collection tasks as well as industrial gateway

Compact realization of simple control, visualization and communication tasks directly on the machine

Nano IPCs –
High Compactness Through Numerous Integrated Interfaces

Manifold
Application
Options

**High
Compactness**

High Flexibility

High Ruggedness

High System
Availability

High Investment
Protection

1 x CF slot (externally accessible)   1 x DVI-D   4 x diagnostics LED   1 x COM   3 x USB 2.0

4 x USB 2.0   1 x COM   2 x Gigabit-LAN (teaming-capable)   2 x Gigabit-LAN (teaming-capable)   1 x CF slot (externally accessible)   1 x USB interface at front[2]

- Economization of slots and cost-favorable I/O connection

- All interfaces and operating elements are accessible from one side for easy wiring

- Configurable serial interface[1] (RS232, RS485, CAN) depending on application requirements

- PROFINET with RT functionality via one of the two standard Ethernet interfaces for easy integration in the control environment

- Integrated power supply and ON/OFF switch

- Assembly of redundant networks (2 x teaming-capable Gbit-LAN)

Despite their compact design, the nano IPCs support manifold connection options and offer a large number of integrated interfaces for the connection of additional I/O devices
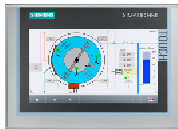
1 IPC227D
2 IPC277D 15" and 19"

Nanopanel PCs –
Flexible Selection of the Suitable Display Version

SIEMENS

SIMATIC IPC277D: Flexible selection of industrial-standard wide-screen displays

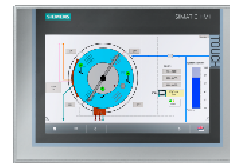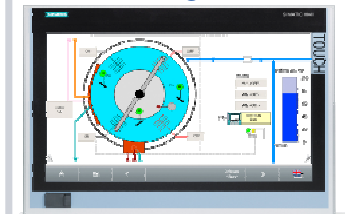| 7"	9"	12"	15"	19"

Optimum readability thanks to:

- High viewing angle of approx. 170° (horizontal and vertical)
- High brightness up to 400 cd/m^2
- High resolution of at least 800 x 480 (with 7" display diagonal)

Optimum energy-saving properties thanks to durable, 100% dimmable LED background illumination

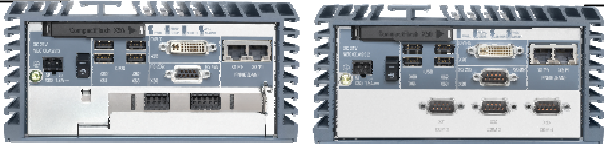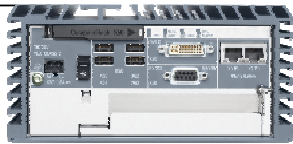## High flexibility and adjustability to the respective application
- **On a joint platform**
- **For minimum expenditures and costs in terms of engineering, training and spares stocking**

Nanobox PCs –
Flexible Selection of the Suitable Enclosure Version

Manifold
Application
Options

High
Compactness

High Flexibility

High Ruggedness

High System
Availability

High Investment
Protection

SIMATIC IPC227D: Flexible enclosure concept for various enclosure equipments			
Basic	**IO**	**COM**	**PCIe**
Compact basic device with an enclosure volume of approx. 1 liter	Enclosure versions with: 4 digital I/Os	3 additional COM interfaces	Enclosure version with: Fan-free PCIe slot for customer-specific expansions

High flexibility and adjustability to the respective application
- **On a joint platform**
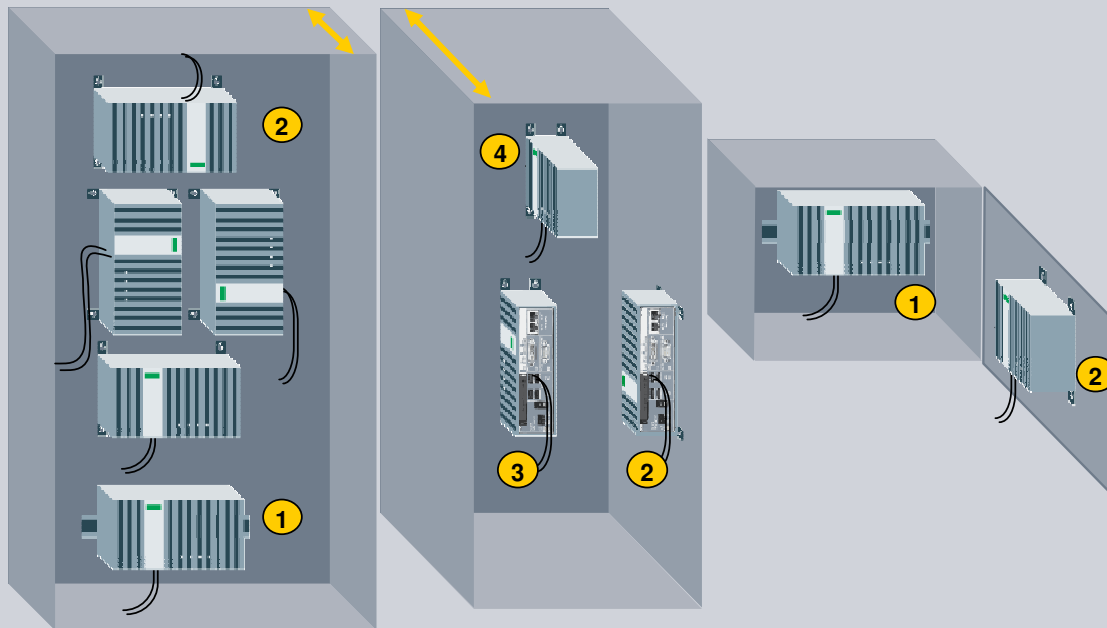- **For minimum expenditures and costs in terms of engineering, training and spares stocking**

Nanobox PCs –
High Flexibility Thanks to Manifold Mounting Options

SIEMENS
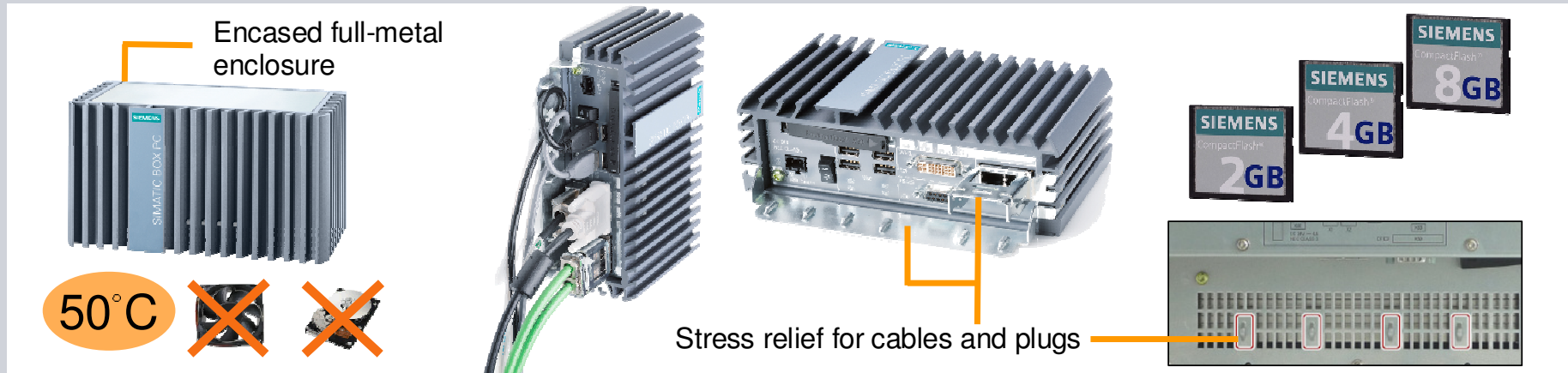
Manifold
Application
Options

High
Compactness

High Flexibility

High Ruggedness

High System
Availability

High Investment
Protection

Mounting type	Example	Advantage
DIN rail ①		Snap-on mounting on DIN rail without tools
Wall mounting ②		Flexible installation position selection (e.g. horizontal, vertical)
Portrait mounting ③		Sound accessibility of operating elements with narrow footprint
Side mounting ④		Smallest footprint in the control cabinet with easy cable routing

Maximum flexibility in terms of installation and mounting both in the control cabinet as well as directly on the machine

11/2011   SIMATIC IPC – The More Industrial PC   Industry Sector

Nano IPCs –
Extremely Rugged and Absolutely Maintenance-Free

Encased full-metal
enclosure

50°C

Stress relief for cables and plugs

Absolutely maintenance-free, maximum processor performance up to ambient temperatures of 50°C[1]

- Elimination of mechanical wear parts such as fans or conventional hard disks

- Encased enclosure for the prevention of dust intrusion and resulting system failures[2]

- Stress relief for solid hold of cables and connectors, also in harsh environments[3]

- SIMATIC IPC CompactFlash card as rugged bulk memory, replaceable from the outside

- Solid-state drive (50 GB) with increased memory requirements

- No processor throttling or dependence on installation position

Reliable 24-hour continuous operation under industrial ambient conditions

1 operation with CF card / SSD   2 IPC227D
3 optional for IPC227D, for IPC277D part of standard delivery

Nano IPCs –
High System Availability Through Comprehensive Self-Diagnostics

SIEMENS

**Manifold
Application
Options**

**High
Compactness**

High Flexibility

High Ruggedness

**High System
Availability**

**High Investment
Protection**

4 x status LEDs, e.g. for WinAC
(run/stop, error, maintenance)
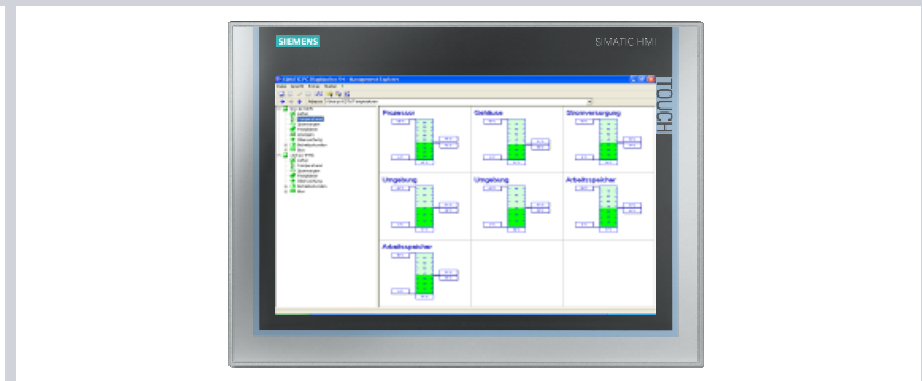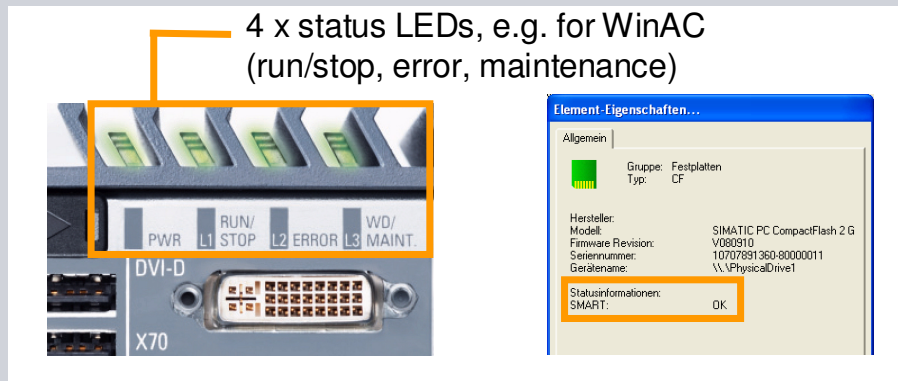
- Comprehensive self-diagnostics thanks
  to pre-installed local diagnostics software
  SIMATIC IPC DiagBase

- Monitoring of CompactFlash card or SSD
  similar to "SMART" with hard disks for early
  warning of impending bulk memory failures

- 4 status LEDs for efficient self-diagnostics,
  e.g. in headless operation[1]

Optional SIMATIC IPC DiagMonitor diagnostics
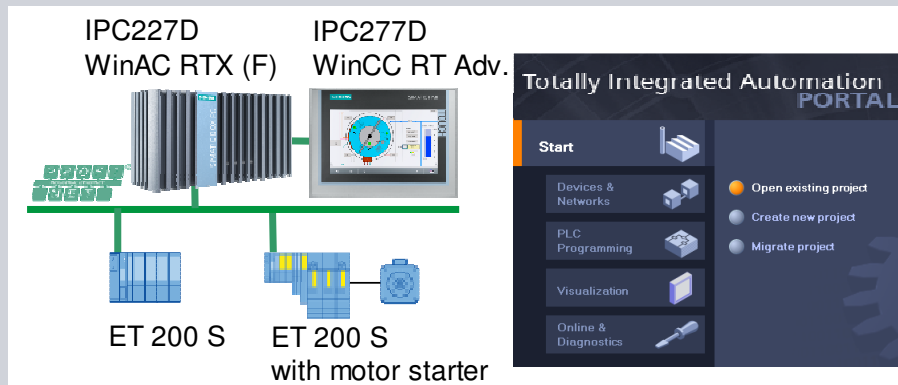software for remote diagnostics

- Optimum monitoring of headless systems
  through networked diagnostics

- Integrated web server for global access
  to diagnostics data

- Alarm messages via e-mail / SMS

**Preventive fault monitoring for the prevention of critical
operating states and cost-intensive system failures**

1 IPC227D

Nano IPCs –
More Investment Protection Through Easy Integration in the SIMATIC World

**Manifold
Application
Options**

**High
Compactness**

High Flexibility

High Ruggedness

**High System
Availability**

**High Investment
Protection**

IPC227D
WinAC RTX (F)

IPC277D
WinCC RT Adv.

ET 200 S

ET 200 S
with motor starter

**Totally Integrated Automation
PORTAL**

Start

Devices &
Networks

PLC
Programming

Visualization

Online &
Diagnostics

- Open existing project
- Create new project
- Migrate project

SIMATIC system-tested
(Totally Integrated Automation)

- Onboard interface for the cost-favorable
  connection of distributed field devices

- Full support of programming in the
  TIA Portal V11; engineering with STEP7 V11

Turnkey embedded bundles for rapid
commissioning and an attractive price with:

- SIMATIC WinAC RTX (F)
  software controller; and/or

- SIMATIC WinCC RT Advanced
  HMI software

**Reduction of costs and risks through pre-tested and
turnkey solutions for rapid and easy commissioning**

SIEMENS

Thank you for your attention!

Patrick Appelt

Marketing Manager

Industry Sector / I IA AS S MP5

Gleiwitzer Straße 555

90475 Nürnberg

Phone: +49 911 895 3974

Cellular: +49 173 316 3404

E-Mail: appelt.patrick@siemens.com