

# PB2000

New Box PCs with Intel® Atom™ Cedar Trail platform

# PB2000 - Highlights

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- **Fanless Panel PC** (operating temperature 0÷50°C)
- Intel® **Atom™ Cedar Trail platform** (3<sup>rd</sup> generation ATOM platform)
  - **Cedarview D2550** dual core processor 1,86 GHz
  - **1 MB L2 Cache**
- Featuring **NEW ASEM STANDARDS** (see page 5)
- Supports **Win 32**, **Win CE** and **Linux** operating systems
- All common **Fieldbuses** available
- Optional PCI/PCIe slot (H1 version, see page 10)
- Fast **mass storage** write/read performance with SATA II interface

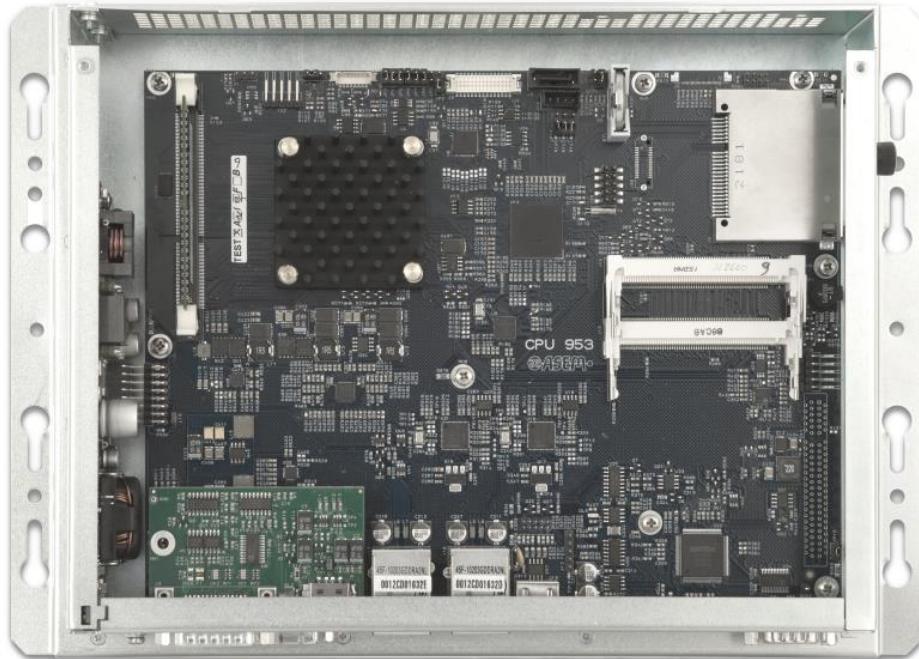


# PB2000 - Highlights

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Entirely **designed, engineered** and **manufactured** by ASEM

- Embedded fan-less solution guaranteeing maximum reliability and performances
- Operating temperature 0÷50° ( 5÷45° with HDD)



# PB2000 - Long term availability



**10** years  
availability

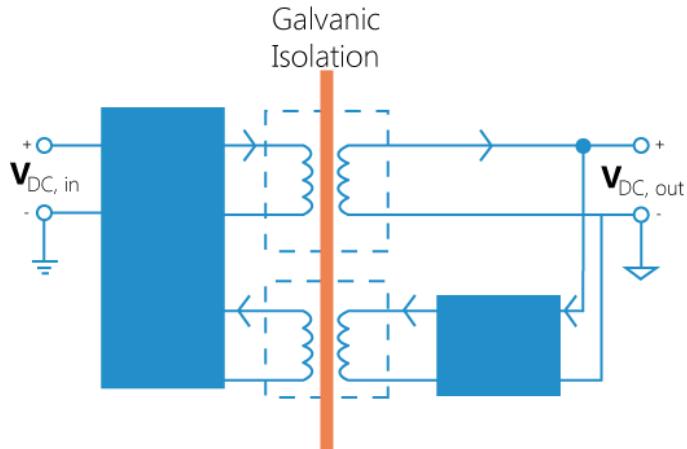
2013

2023

2028

+ **5** years  
support/repairs

# PB2000 - New ASEM Standards



**Isolated Power supply** with galvanic isolation to prevent:

- Common mode noise at low/medium frequencies on the power supply line
- Ground loop noise
- Extra-voltage caused by lightning

and to guarantee

- Power supply with grounded positive terminal (e.g. Japan)

**UPS integrated** in the internal power pack

- With external battery pack - rear of the system mounting
- With external battery pack - standalone wall mounting



# PB2000 - Features

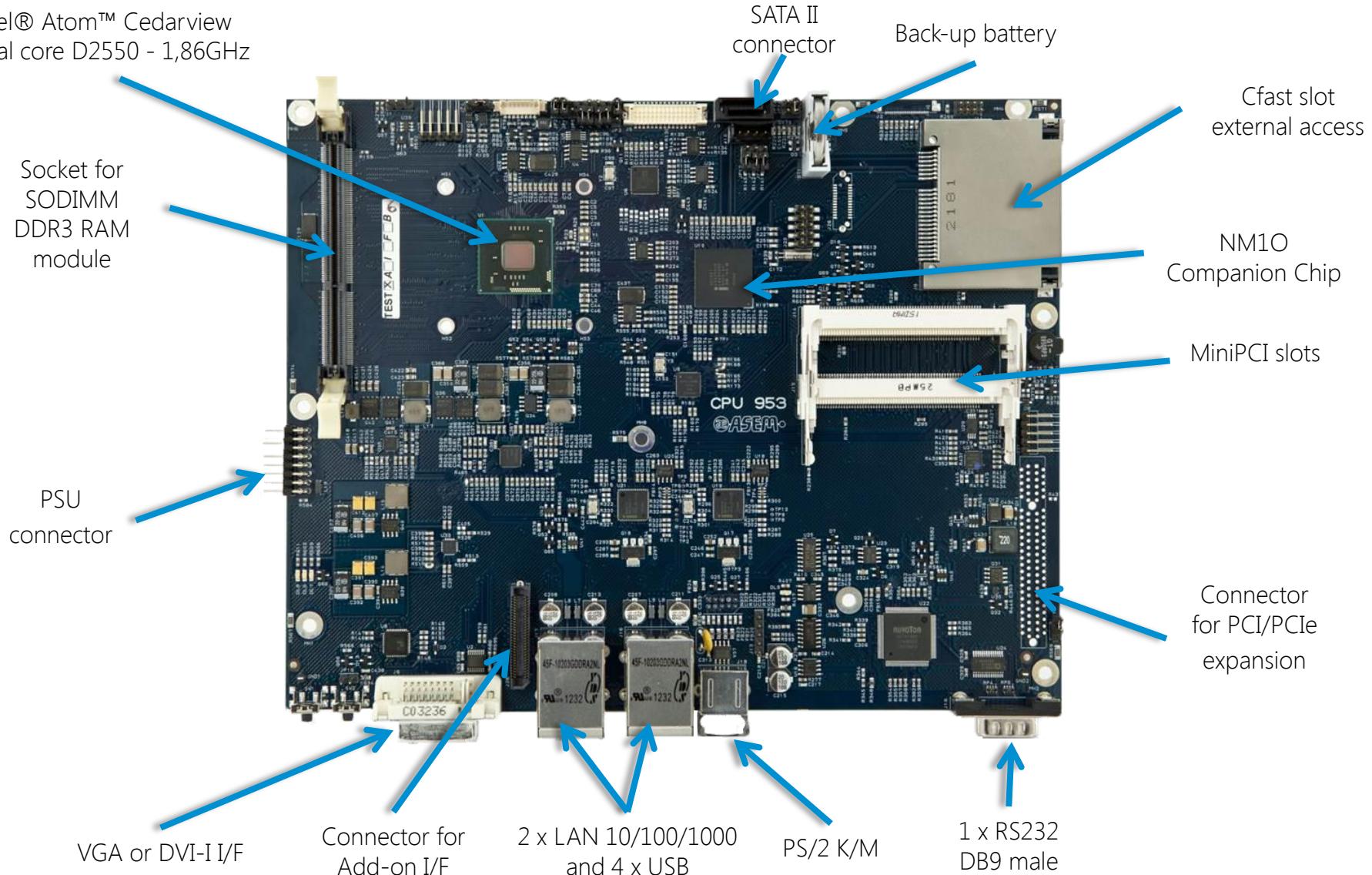


NEW ASEM  
STANDARDS

<b>PROCESSOR</b>	Intel® Atom™ Cedarview dual core D2550 1,86GHz - 1MB L2 Cache
<b>SYSTEM MEMORY - RAM</b>	DDR3 SODIMM 1GB / 2GB / 4GB
<b>MASS STORAGE</b>	<ul style="list-style-type: none"> <li>- 1 bootable Cfast embedded on board with external access</li> <li>- 1 non-bootable Cfast (optional) with external access</li> <li>- SSD / HDD 2,5" SATA II</li> </ul>
<b>LAN</b>	2 x LAN 10/100/1000 (with Jumbo frames and Wake on LAN functionalities) Intel® 82574L Chipset
<b>USB</b>	4 x USB 2.0 (rear)
<b>SERIAL</b>	1 x RS232 (DB9 male)
<b>VIDEO OUTPUT</b>	1 x VGA / 1 x DVI-I
<b>POWER SUPPLY UNIT</b>	<ul style="list-style-type: none"> <li>- Input voltage 18 ÷ 36 VDC</li> <li>- Optional UPS (Input voltage 18 ÷ 32 VDC)</li> <li>- Power consumption 20W÷60W (+15W with UPS during charge)</li> </ul>
<b>O.S. compatibility</b>	<p>Intel® Atom™ Cedar Trail platform does not support: Win 64, Win 8, Win CE 5.0, Win Ce 6.0</p> <p>O.S. certified by ASEM: Win 32 / Win Embedded Compact 7</p> <p>O.S. supported by Intel Atom Cedar Trail platform but not certified by ASEM: Linux, VxWorks, QNX</p>
<b>CERTIFICATION</b>	CE, cULus (pending, May 2013)
<b>ADD-ON INTERFACES (optional – max 1)</b>	<ul style="list-style-type: none"> <li>- 1 x RS232/422/485 (DB15M) + 1 x USB 2.0</li> <li>- 1 x RS232/422/485 optoisolated (DB15M) + 1 x USB 2.0</li> </ul>
<b>EXPANSION SLOTS</b>	2 x MiniPCI dedicated to ASEM fieldbuses, I/O and NVRAM boards 1 x PCI / PCIe x1 (2,5 Gb/s) (optional, S1 version)

# PB2000 - Motherboard 953

Intel® Atom™ Cedarview  
dual core D2550 - 1,86GHz

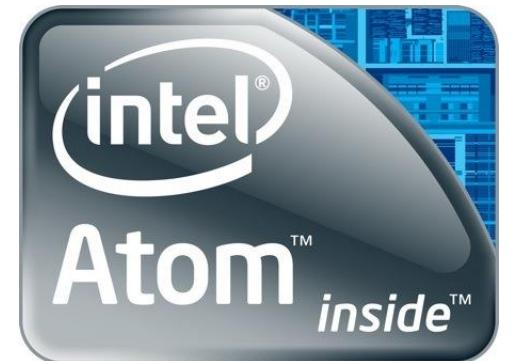


# PB2000 - Processor

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Intel® **Atom™ Cedar Trail platform** (3<sup>rd</sup> generation ATOM platform)

- **Cedarview D2550** dual core processor 1,86GHz (BGA package)
  - 32nm process technology
  - L2 Cache - 1MB
  - Fast memory support - DDR3 1066MHz RAM
  - Low power consumption - 10W TDP
- **Intel® GMA 3600** integrated graphics engine
  - 640 MHz Graphics Base Frequency
  - Dual display support
- NM10 **Companion Chip**

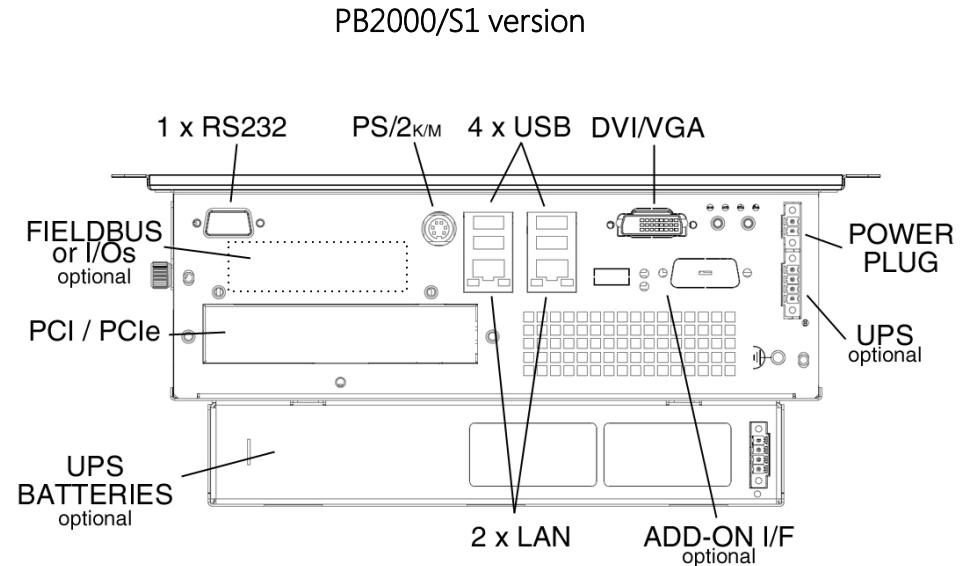
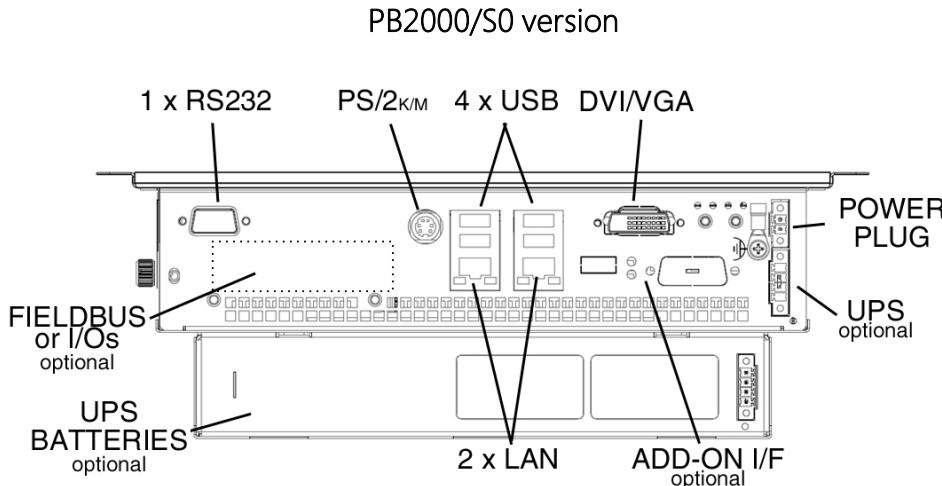


# PB2000 - O.S. Compatibility

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- Intel® **Atom™ Cedar Trail platform** does not support:
  - Win 64
  - Win 8/ 2000/ 98/ NT
  - Win CE 5.0 Pro/Pro Plus
  - Win CE 6.0 Pro
- O.S. **certified by ASEM**
  - Win 7 Pro/Ultimate 32bit
  - Win XP Pro 32bit
  - Win Embedded Standard 7E/7P 32Bit
  - Windows Embedded Standard 2009 (XPe SP3) 32bit
  - Windows XPe SP2
  - Win Embedded Compact 7 Pro
- O.S. supported by Intel Atom Cedar Trail platform but not certified by ASEM
  - Linux
  - VxWorks
  - QNX

# PB2000 - External Connectors & Interfaces



## Standard

### LAN

- 2 x LAN 10/100/1000 (with Jumbo frames and Wake on LAN functionalities) Intel® 82574L Chipset

### USB

- 4 x USB 2.0 with software switch off (rear)

### VIDEO

- 1 x VGA / 1 x DVI-I

## Optional

### EXPANSION SLOTS

- 1 x PCI / PCIe x1 (2,5 Gb/s) (optional)

### SERIAL

- 1 x RS232 (DB9 male) software programmable

### EXPANSION SLOTS

- 2x MiniPCI for ASEM boards

### ADDITIONAL INTERFACES

- 1 x connector for ASEM add-on boards (see page 13)

# PB2000 - Integrated UPS (optional)

## UPS integrated in the internal power supply unit

- With external battery pack - rear of the system mounting
- With external battery pack - standalone wall mounting

## UPS features

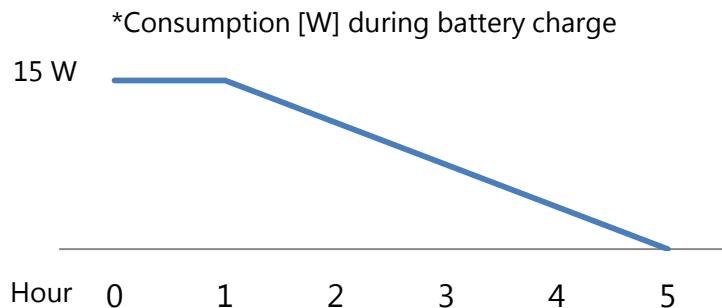
- 12V DC UPS battery backup system
- Input voltage intervention threshold 18VDC
- 25' nominal duration time at 25°C, full charge, 40W load (estimated value)
- 15W max consumption during battery charge\*

## External battery pack

- 2500mAh 12V/6A max lead battery (Pb)
- Full charge in 5 hours
- Lifetime 10y at 25°C, full charge

## Software Management Tools

- Smart battery management to extend lifetime
- Battery estimated duration for individual system configuration



# PB2000 - Mass Storage

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## CFAST

- 1 x bootable Cfast embedded on board with external access
- 1 x non-bootable Cfast (optional) with external access



## Internal SSD/HDD

- SSD 2,5" SATA
- HDD 2,5" SATA
- HDD 2,5" SATA 24x7

ASEM recommends SSD memory due to its **industrial reliability** and high thermal and vibration shock resistance

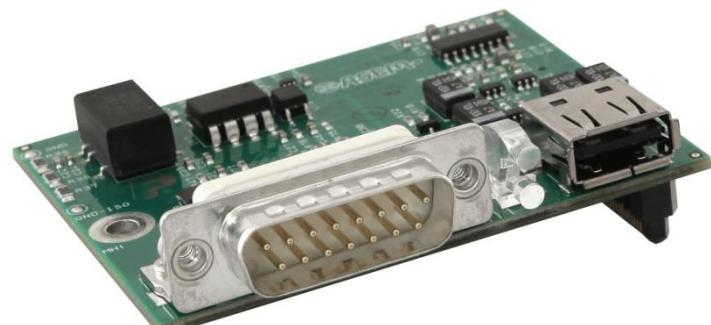
# PB2000 - ASEM add-on Interfaces (optional)

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1 x RS232/422/485 (DB15M) + 1 x USB 2.0



1 x RS232/422/485 optoisolated (DB15M) + 1 x USB 2.0

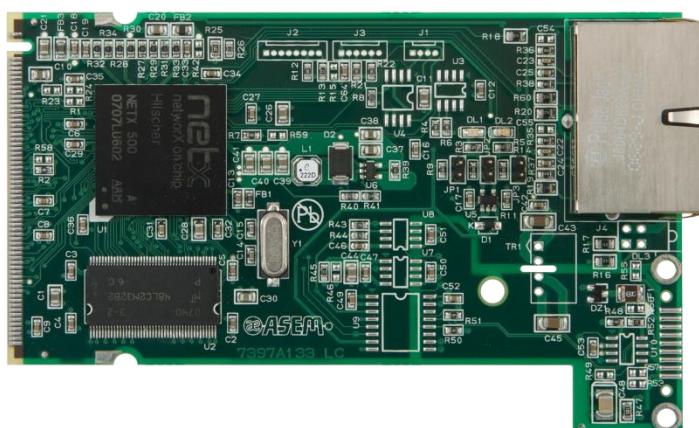


# PB2000 - Fieldbus MiniPCI Boards (optional)

NETcore® X cards enable PB2000 to interface all popular fieldbus

- Master or Slave function
- Available in MiniPCI format

## Supported Fieldbuses



# PB2000 - Digital Input/Output MiniPCI Boards (optional)

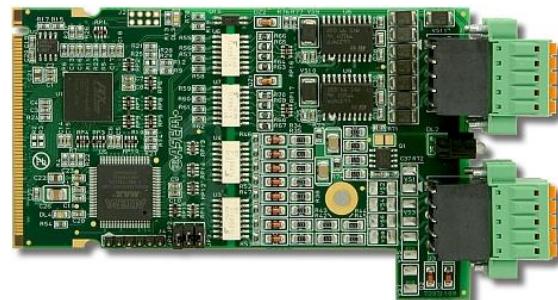
8 D-IN + 8 D-OUT board for **HT/PB series**

## Digital Inputs

- 8 Channels
- Sink/Source Type
- Vin min 15 Vdc
- Vin max 30 Vdc
- Max Frequency 10KHz
- Polarity inversion and Extra voltage Protection
- 500 V rms Insulation
- IRQ over IN0

## Digital Outputs

- 8 Channels
- Source Type
- Vin min 15 Vdc
- Vin max 30 Vdc
- Max Output current 100 mA
- Max Frequency 10KHz
- Polarity inversion, Extra voltage, Short circuit and Extra Current Protection
- 500 V rms Insulation
- Frequency generation 1-2047 Hz
- Watch Dog

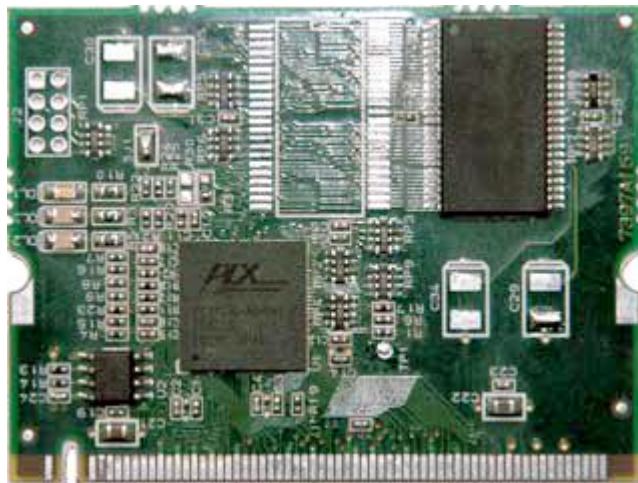


# PB2000 - NVRAM MiniPCI Boards (optional)

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## NVRAM Board for HT/PB series

- **Maintenance free**
  - No battery replacement required
- **Fast** and **easy** data access
- 512Kb magnetic RAM
- 3 diagnostic led on board



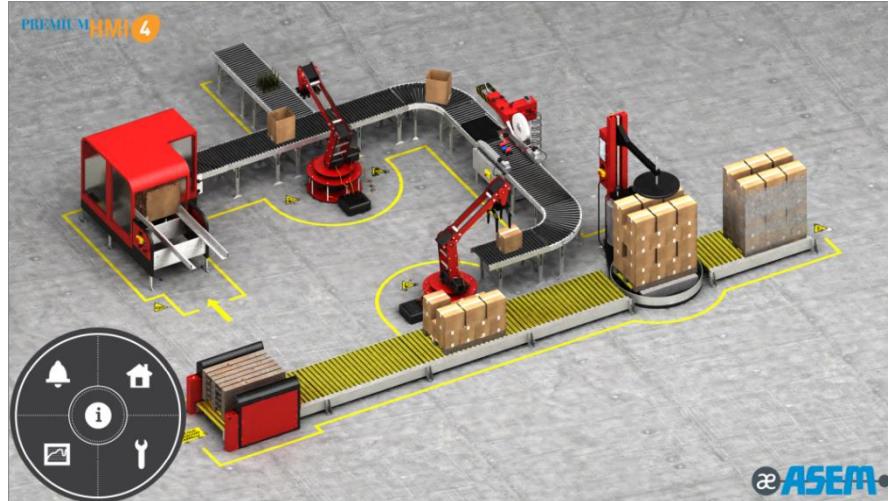
# ASEM SOFTWARE FEATURES

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## Premium HMI Highlights

- Unique development tool
- Projects transversality between ARM and X86 hardware platforms and between Win CE and Win 32/64 operating systems
- Automatic images resizing
- Wide library of vector graphics objects based on Microsoft® XAML technology





## Features

- Data logging on relational and textual DB (CSV/XML)
- Networking with client/server architectures and father/child projects
- Modifications traceability on CFR21 Part 11 compatibles applications
- VB script and VB.NET with multithreading execution and online debugger
- Wide range of library vector symbols
- Multi protocol support with data transfer between communication channels
- OPC Client interface
- Report print on PDF and printer
- Remote Control App for iOS and Android devices

## New Visualization technologies

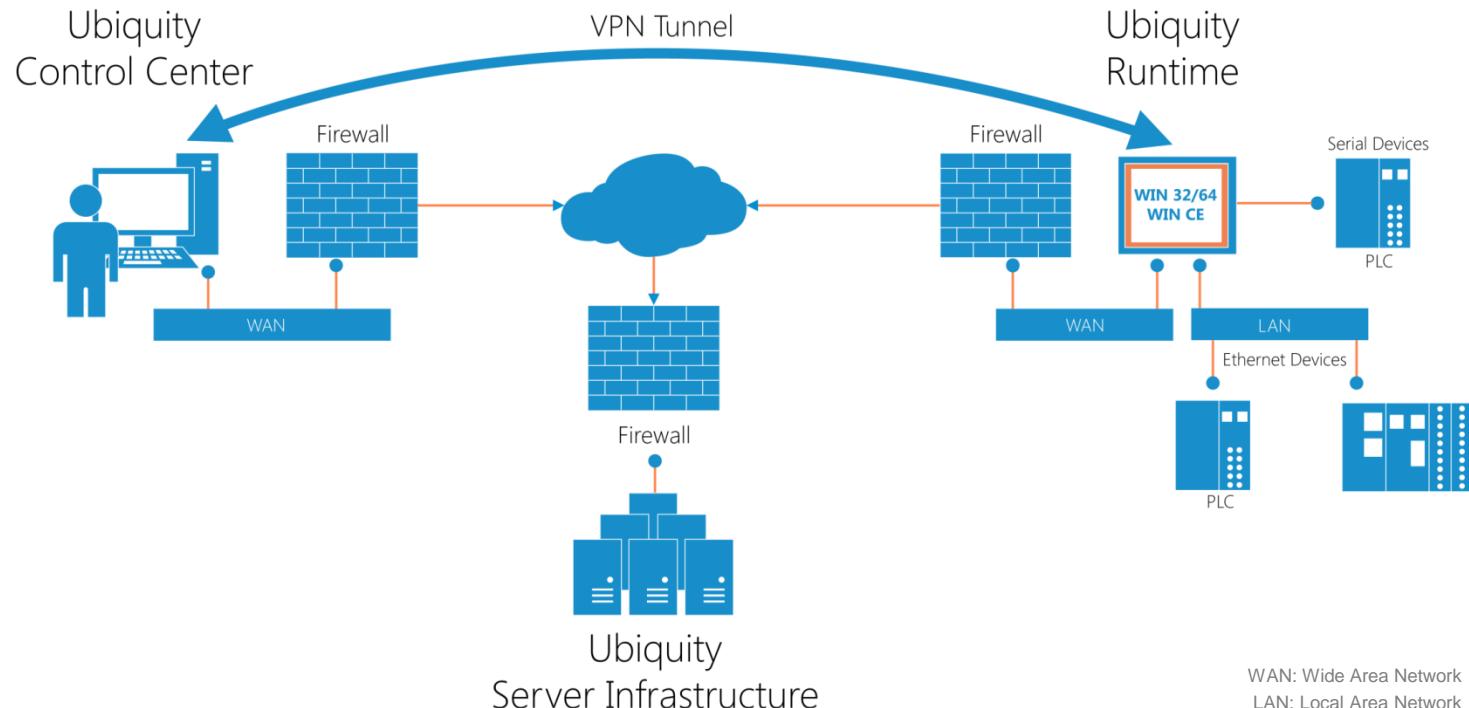
- Vector graphics based on XAML standards
- New and powerful 16 mln colors graphics rendering engine
- Gradient, shading and transparency effects
- Swipe gesture support

## Compatibility

- Full compatibility with PremiumHMI previous versions
- Automatic objects conversion in the new graphics format

## Ubiquity

The innovative software solution for remote assistance for Win 32/64 and Win CE environments that allows acting and operating on supervision and control systems in remote plants, cancelling distances and eliminating travel expenses.



## Remote Access Solution

Ubiquity is addressed to Machine Manufacturers, and allows acting onto remote supervision and control systems installed at customers, as if they were at their own site

### Distinctive features

- Proprietary VPN optimized for Industrial Communication
- Does not require additional hardware
- Simple and user-friendly interface
- SSL/TLS protocol encryption and use of certificates
- Automatic «Relay server» selection according to the shortest latency
- Multiple client runtime
- Easy setup, no network or IT expertise required

### Possible remote activities

- Remote assistance
- Access, debug and programming of PLCs, HMIs and Automation devices
- Remote machine commissioning
- Application updates and maintenance
- Preventive and predictive maintenance
- Remote desktop, remote process viewer, file management, chat...

A unique solution for machine remote control that makes manufacturers save time and money

A wide-angle photograph of a modern industrial building complex. The main building is a long, low-profile structure with a light grey and blue facade, featuring a prominent curved glass entrance. In front of the building is a paved area with several tall, thin flagpoles. The building is set against a backdrop of majestic, rugged mountains under a clear blue sky with a few wispy clouds.

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