HT2000 Family

New Panel PCs with Intel® Atom™ Cedar Trail platform

ASEM

DIGITAL AUTOMATION TECHNOLOGIES

HT2000 - Highlights

- **Fanless Panel PC** (operating temperature 0÷50°C)

- Intel® **Atom™ Cedar Trail platform** (3rd generation ATOM platform)

  - **Cedarview D2550** dual core processor 1,86 GHz

  - **1 MB L2** Cache

- **Wide range of 16 mln colors LED backlight TFT LCD displays**

  - 4:3 aspect ratio: 10,4", 12,1", 15", 17" (5:4), 19" (5:4)

  - 16:9 aspect ratio: 15,6", 18,5", 21,5"

- Featuring **NEW ASEM STANDARDS** (see page 5)

- Supports **Win 32**, **Win CE** and **Linux** operating systems

- All common **Fieldbuses** available

- Optional PCI/PCIe slot (S1 version, see page 10)

- Fast **mass storage** write/read performance with SATA II interface

HT2000 - Highlights

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

- Embedded fan-less solution guaranteeing maximum reliability and performances
- IP65 frontal protection rating
- Optional Glass Film Glass touchscreen technology (only for standard Aluminum front panel)
- Operating temperature 0÷50° (0÷45° for LCD sizes > 15,6", 5÷45° with HDD)

HT2000 - Long term availability

10 years
availability

+5 years
support/repairs

2013   2023   2028

ASEM
DIGITAL AUTOMATION TECHNOLOGIES

HT2000 - New ASEM Standards

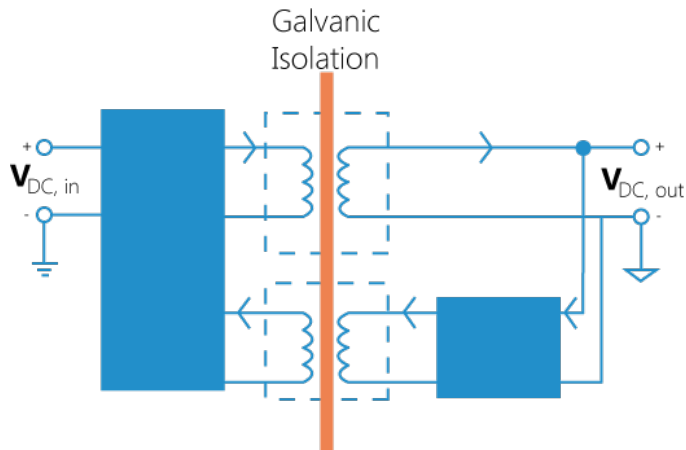A **unique CUT-OUT** for each different size of LCD to ensure:

- Interchangeability among different Panel PC, HMI and Monitor families
- Future mechanical compatibility

Front panel available in three different variants for all new families:

- Aluminum with USB port
- Aluminum True Flat with USB port
- Stainless steel True Flat

Galvanic Isolation

$V_{DC, in}$ $V_{DC, out}$

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 supply unit

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

ASEM
DIGITAL AUTOMATION TECHNOLOGIES

HT2000 - Features

LED backlight TFT LCD	4:3 aspect ratio: 10.4" / 12.1" / 15.0" / 17" (5:4) / 19" (5:4) 16:9 aspect ratio: 15.6" / 18.5"/ 21.5"
TOUCH-SCREEN	Resistive 5 wires
FRONT PANEL	Alu / True Flat Alu / True Flat Stainless Steel
PROCESSOR	Intel® Atom™ Cedarview dual core D2550 1,86GHz - 1MB L2 Cache
SYSTEM MEMORY - RAM	DDR3 SODIMM 1GB / 2GB / 4GB
MASS STORAGE	- 1 bootable Cfast embedded on board with external access - 1 non-bootable Cfast (optional) with external access - SSD / HDD 2,5" SATA II
LAN	2 x LAN 10/100/1000 (with Jumbo frames and Wake on LAN functionalities) Intel® 82574L Chipset
USB	4 x USB 2.0 (rear) | 1 x USB 2.0 (front, IP65 protection)
SERIAL	1 x RS232 (DB9 male)
VIDEO OUTPUT (optional)	1 x VGA / 1 x DVI-I
POWER SUPPLY UNIT	- Input voltage 18 ÷ 36 VDC - Optional UPS (Input voltage 18 ÷ 32 VDC) - Power consumption 20W÷60W (+15W with UPS during charge)
O.S. compatibility	Intel® Atom™ Cedar Trail platform does not support: Win 64, Win 8, Win CE 5.0, Win Ce 6.0 O.S. certified by ASEM: Win 32 / Win Embedded Compact 7 O.S. supported by Intel Atom Cedar Trail platform but not certified by ASEM: Linux, VxWorks, QNX
CERTIFICATION	CE, cULus (pending, May 2013)
ADD-ON INTERFACES (optional – max 1)	- 1 x RS232/422/485 (DB15M) + 1 x USB 2.0 - 1 x RS232/422/485 optoisolated (DB15M) + 1 x USB 2.0
EXPANSION SLOTS	2 x MiniPCI dedicated to ASEM fieldbuses, I/O and NVRAM boards 1 x PCI / PCIe x1 (2,5 Gb/s) (optional, S1 version)

HT2000 - Motherboard 953

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

LCD LED backlight connector

LCD LVDS I/F

SATA II connector

Back-up battery

Cfast slot external access

Socket for SODIMM DDR3 RAM module

NM1O Companion Chip

CPU 953

®ASEM•

MiniPCI slots

PSU connector

Resistive Touch connector

Connector for PCI/PCIe expansion

VGA or DVI-I I/F

Connector for Add-on I/F

2 x LAN 10/100/1000 and 4 x USB

PS/2 K/M

1 x RS232 DB9 male
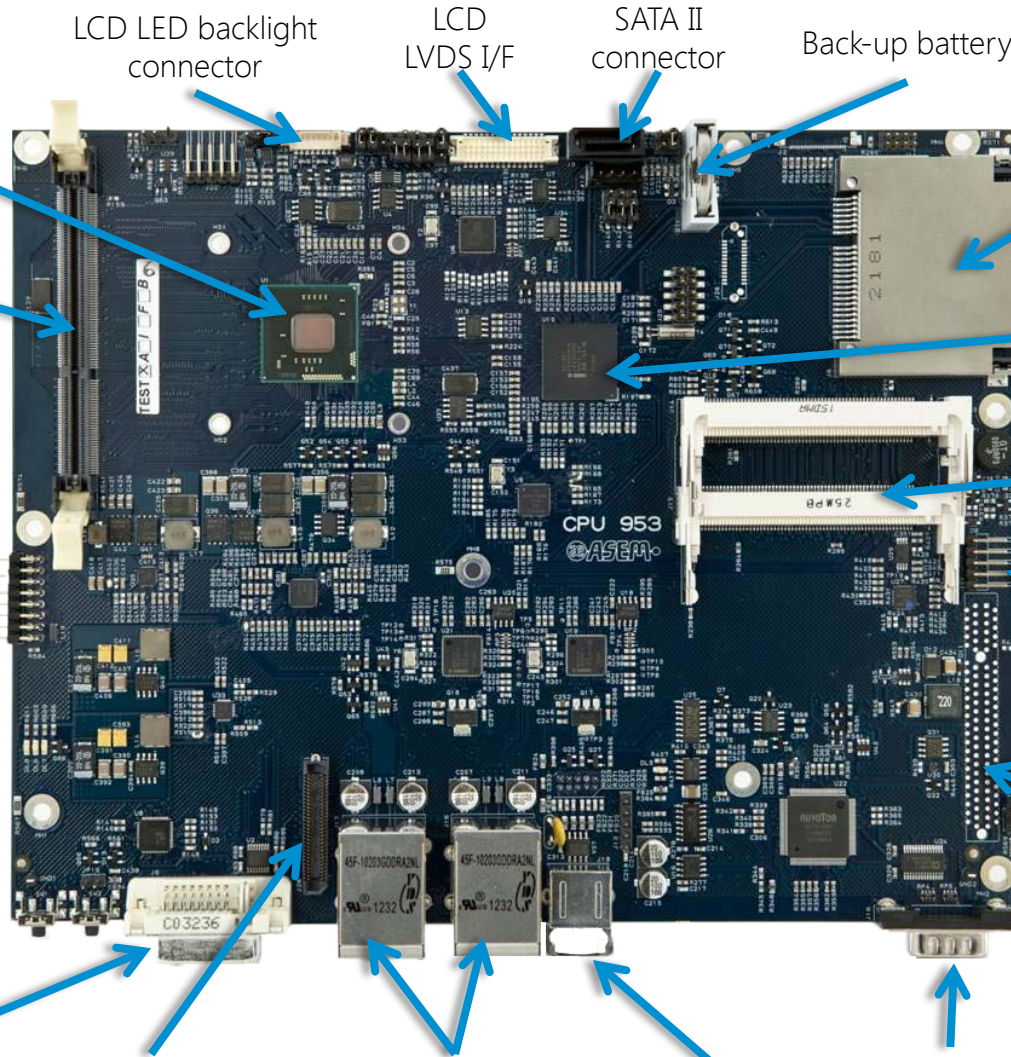
HT2000 - Processor

Intel® **Atom™ Cedar Trail platform** (3rd 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**
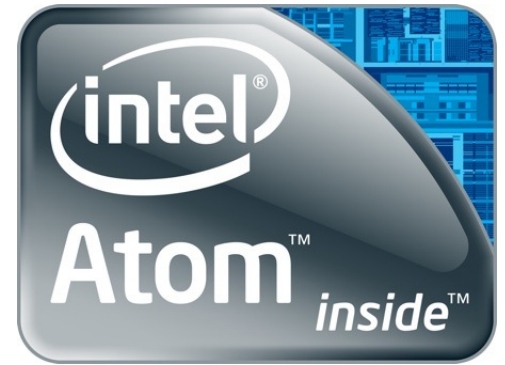
HT2000 - O.S. Compatibility

- 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

HT2000 - External Connectors & Interfaces
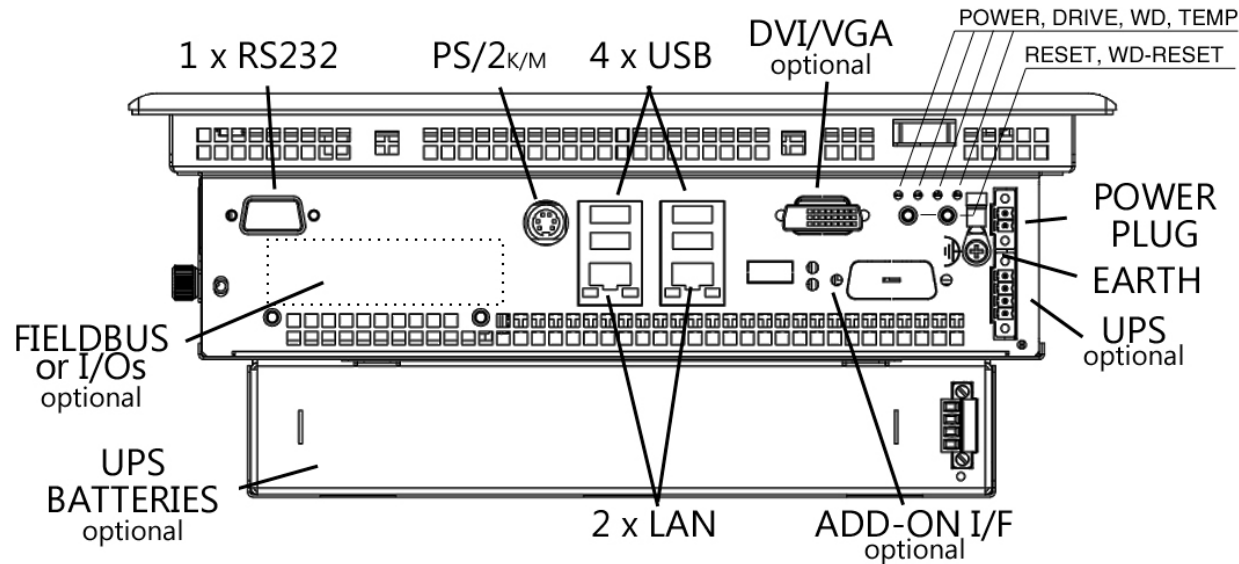
Standard

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) | 1 x USB 2.0 (front, IP65 protection)

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 14)

POWER PLUG
- 24V DC isolated
- Input range 18÷36V DC
- Industrial connector

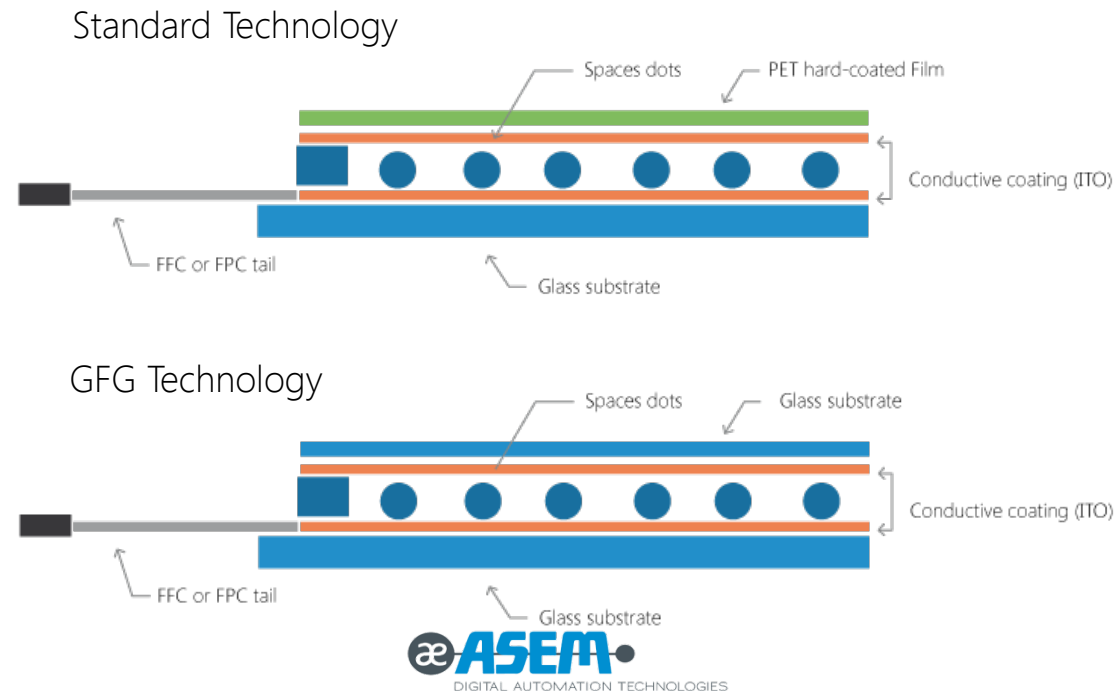## Optional

VIDEO OUTPUT
- 1 x VGA / 1 x DVI-I

PCI/PCIe EXPANSION SLOT (S1 version)
- 1 x PCI / PCIe x1 (2,5 Gb/s)

HT2000 - Glass Film Glass (option)

The **Glass-Film-Glass technology** add an additional thin glass on the surface

- Greater **resistance** to scratches
- Better products **cleaning**
- Available for standard Aluminum front panel in 12", 15" and 17" sizes

Standard Technology

GFG Technology

HT2000 - Integrated UPS (option)

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

*Consumption [W] during battery charge

Software Management Tools

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

ASEM
DIGITAL AUTOMATION TECHNOLOGIES
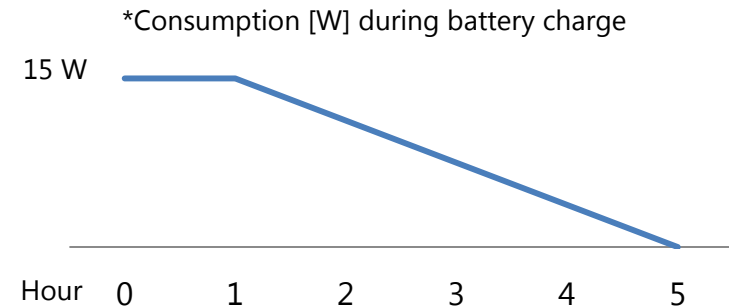
HT2000 - Mass Storage

CFAST

- 1 x bootable Cfast embedded on board with external access

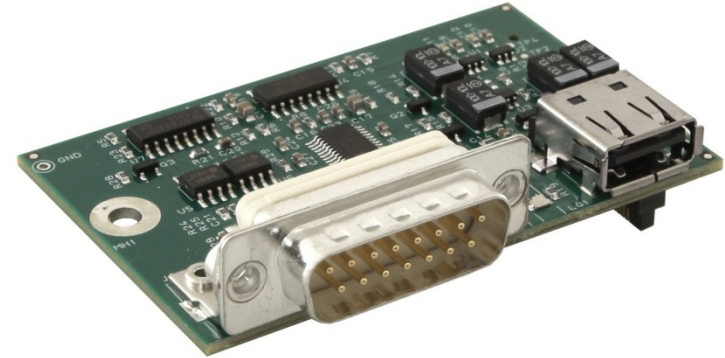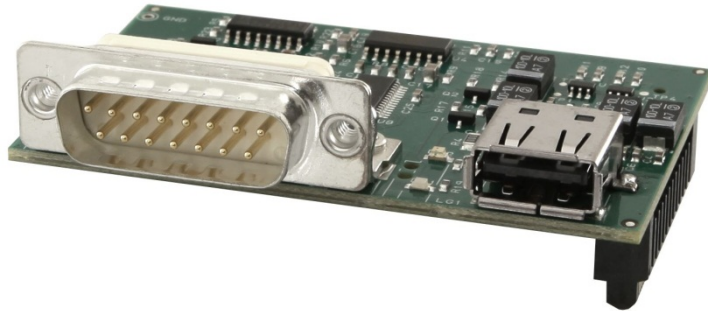- 1 x non-bootable Cfast (optional) with external access

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 termal and vibration shock resistance
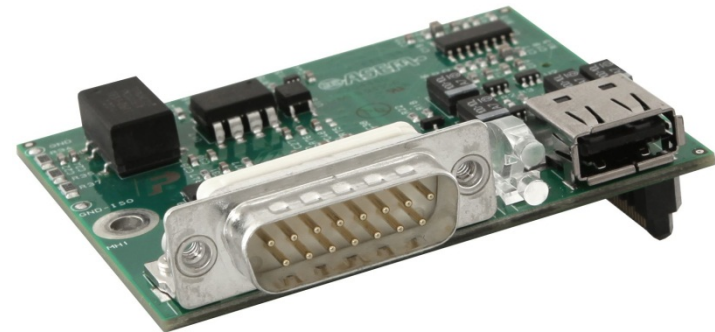
HT2000 - ASEM add-on Interfaces (option)

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

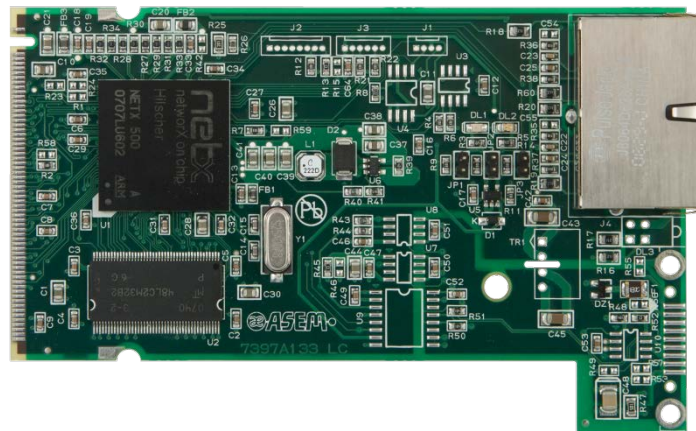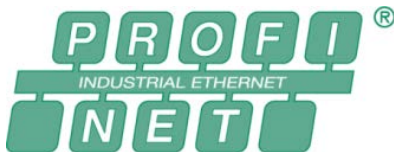1 x RS232/422/485 optoisolated (DB15M) + 1 x USB 2.0

HT2000 - Fieldbus MiniPCI Boards (option)

NETcore® X cards enable HT2000 to interface all popular fieldbus

- Master or Slave function
- Available in MiniPCI format

Supported Fieldbuses

HT2000 - Digital Input/Output MiniPCI Boards (option)

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
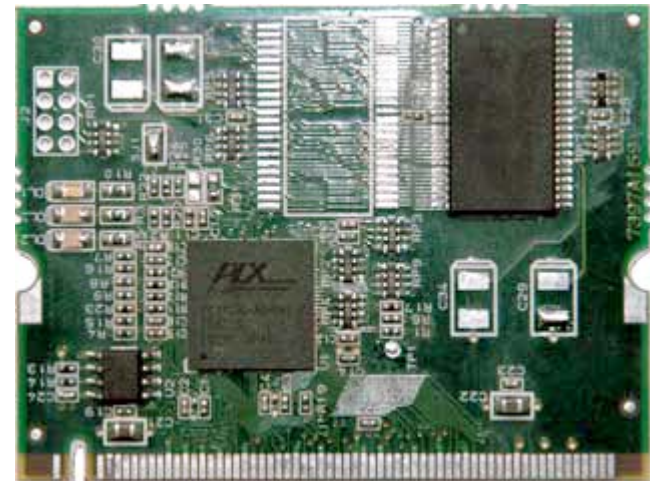- Frequency generation 1-2047 Hz
- Watch Dog
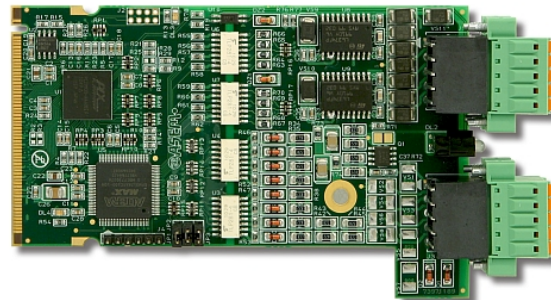
HT2000 - NVRAM MiniPCI Boards (option)

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
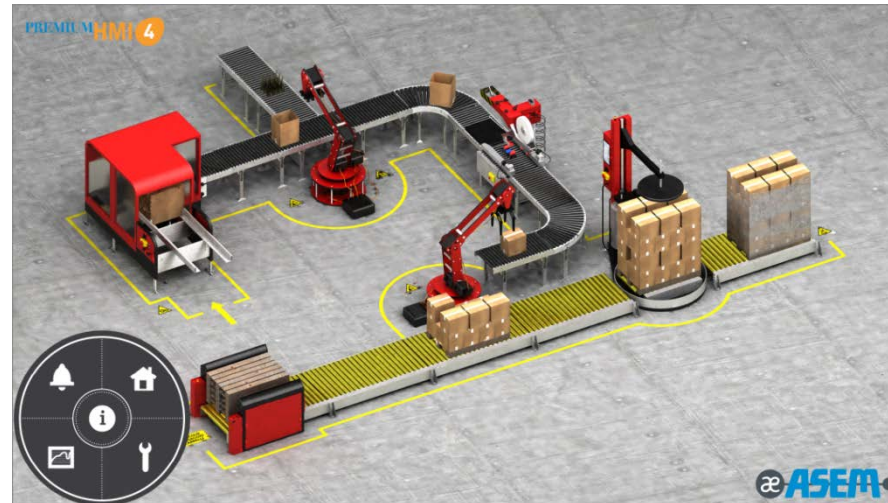
ASEM SOFTWARE FEATURES

HMI Software (option)

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

Premium HMI

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 simbols
- Multi protocol support with data transfer between comunication 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

Remote Assistance Solution (option)

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.
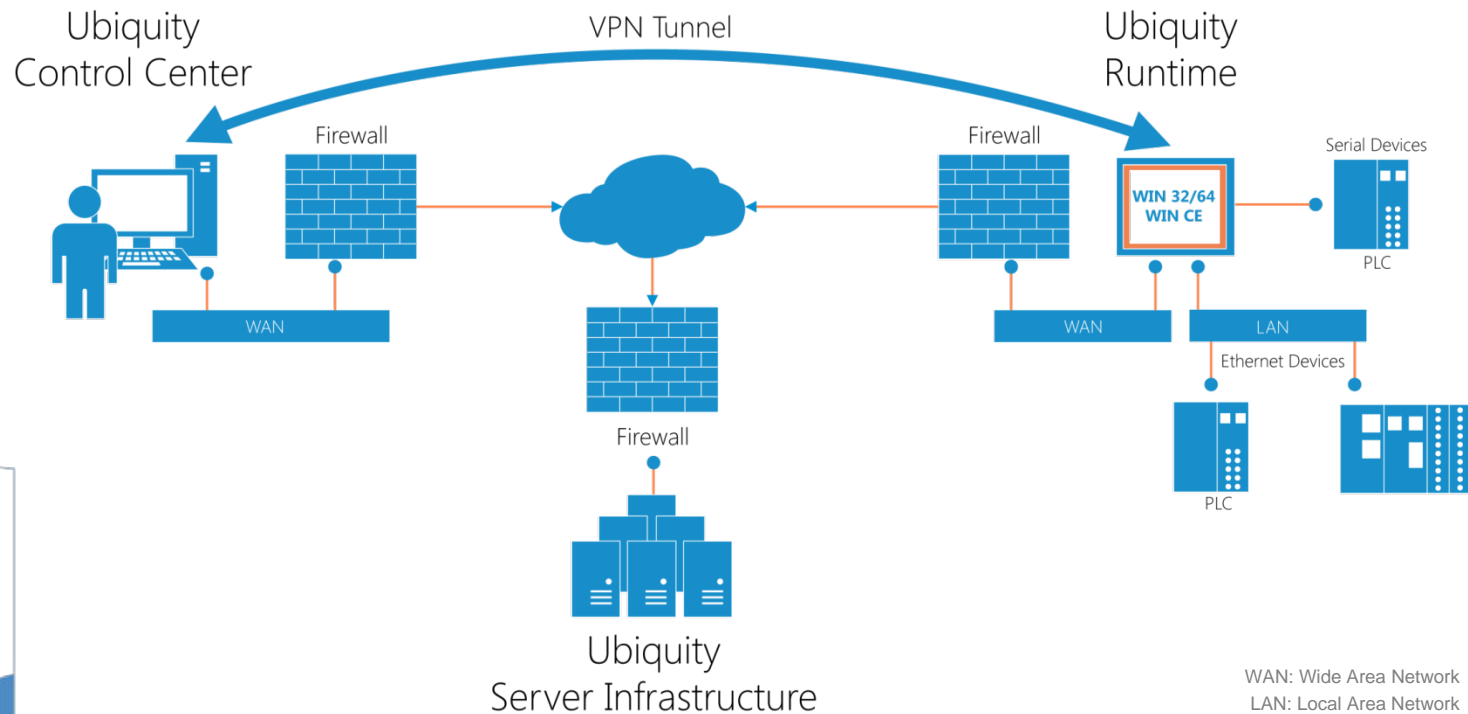
Remote Access Solution

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

ASEM
DIGITAL AUTOMATION TECHNOLOGIES

ASEM S.p.A.
Via Buia 4
33011 Artegna (UD)
Italy
Tel. +39/0432-9671

industrialautomation@asem.it
www.asem.it