Industrial PC Solutions

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ASEM designs and manufactures a wide range of Industrial PCs, HMI and PAC (Programmable Automation Controller) solutions based on x86 and ARM Cortex hardware platforms for the industrial automation market.

35 years of innovation **Made in Italy**

Since 1979, ASEM is a pioneer in the digital technologies integrations between Information & Communication Technology and Industrial Automation.

The performance, configurability, robustness and design of ASEM products and systems, are the result of 35 years of experience in designing and producing solutions for the most demanding industrial applications.
Exploring from the very beginning the potential of Open & Standard technologies into Factory Automation, and leveraging the first-class know-how in developing hardware, firmware and software, ASEM has strengthen its leading position in Italy in the Industrial PCs, HMIs and remote assistance and control systems market.

UBIQUITY

PREMIUMHMI 4

1979 - 1982
Specializing in Electronic Engineering

- Founded in 1979 by Renzo Guerra, current President and CEO, ASEM (**A**utomazione **S**istemi **E**lettronici **M**icrocomputer) started as an engineering company designing and producing microprocessor-based industrial automation systems.

1983 - 1992
Player of the IT world

- ASEM enters the PC market by designing and manufacturing interfaces and accessories for Personal Computers.
- As the only Italian company besides Olivetti®, ASEM manufactures MS-DOS compatible PCs, gaining in the latest 80's the 6% of the Italian PC market, more than global companies like Apple®and Compaq®.

1993 - 2005
Leading the Industrial PC market

- In the mid-90's, ASEM is the first company in Italy focused on the design and production of Industrial PCs, addressing the industrial market.

2006 - 2010
Producing automation systems on an international scale

- In 2006, ASEM begins a specialization path to approach the market not only as a manufacturer of Industrial PCs, but as a company providing automation systems with software.
- Thanks to agreements with partners ASEM offers Premium HMI and CODESYS (softPLC) software platforms.
- ASEM opens a office in Giussano (MB) dedicated to software and system support.
- The company also opens a sales office in Germany to follow directly German OEMs.

2011 - ...
The software and remote assistance era

- ASEM releases PremiumHMI3, the first supervision software with new features developed in-house.
- The company introduces the remote assistance platform Ubiquity to remotely access automation devices via VPN.
- ASEM opens a second manufacturing facility dedicated to assembly and test of electronic boards and systems.
- ASEM opens a local R&D office in Verona.
- ASEM starts designing and producing ARM-based HMIs and remote assistance and remote control systems.
- ASEM releases the new PremiumHMI4 visualization software version, including a new and powerful graphic rendering engine and the latest Microsoft® XAML technology.

ASEM and the "**Open Automation**"

Over 20 years of experience in design and production of IPCs for industrial applications and 10 years of specialization on x86-based systems for machine and process automation.

Leading the "Open Automation" in Italy, ASEM is a reliable and professional partner able to guide customers through the evolution of HMI, control and remote assistance technology for the Industrial Automation market, developing and producing "Open & Standard" hardware platforms integrated with innovative, flexible and easy-to-use software. ASEM has its own complete hardware, firmware, software, mechanics and systemistics design capability and manages internally all production phases, including board assembly and welding.

ASEM: entrepreneurship, investments, innovation
Thanks to a constant focus on innovation and quality, combined with investments in human resources, technology and manufacturing assets, ASEM is now one of the European emerging companies in the industrial automation market, providing systems and solutions that are entirely designed, engineered and produced in-house.
The company has been committed to anticipate customers' needs, convinced that machine builders should leave proprietary technologies, to embrace "Open & Standard" platforms, focusing on software application development.

The deep knowledge of "x86" (PC) and "ARM" technology and the investments in software design are in tune with the evolution of the industrial automation market needs.
Market globalization and the economic crisis have forced machine builders to reduce costs and recover efficiency. At the same time end users (factories) modified their demand requiring price and delivery time reduction while increasing customization requests.
Machine builders are then pushed to reduce development time and take an innovative approach using "Open & Standard" hardware platforms integrated with flexible and easy-to-use software development tools.

The integration of Information & Communication Technologies is now a need to produce automatic machines interconnected into a wider and more complex network where to exchange data and information.
ASEM technological excellence is guaranteed by significant investments in R&D and continuous training of the entire workforce.
The ability to understand and anticipate the fast market evolution, set and follow the right strategies, has enabled the company to maintain a steady growth momentum in the last 10 years.

ASEM in numbers:

- → 2014 Revenues: 25 million Euros
- → 140 employees
- → 5.200 sqm Headquarters in Artegna (UD)
- → 3.250 sqm manufacturing facility in Artegna (UD)
- → R&D offices in Verona
- → R&D offices in Giussano (MB)
- → Sales offices in Germany

R&D

The seamless integration of hardware and software technologies is key to success

30% of ASEM human resources are dedicated to R&D. The team includes highly specialized engineers with complementary skills that cover all the electronic and mechanical design needs, as well as firmware and software development.

The close collaboration with leading technology trendsetters and the continuous dialogue with customers drive the specifications of hardware, firmware, software and systems engineering for each single product.

Thanks to the technological mastery of all system components and their perfect integration, ASEM designs performant, configurable, easy-to-use and reliable products for the most demanding industrial environments.

The different R&D teams work in synergy during the design process to ensure that hardware requirements and software features of each solution can be implemented in an integrated way.

The long experience and the high skills of the R&D engineers make ASEM a reliable technological partner to support machine builders and system integrators in the industrial automation fast-changing market.

High tech & high quality production

ASEM manufacturing plants comprise two modern industrial facilities covering a total area of 8.500 sqm.

ASEM designs and manufactures electronic boards, products and systems internally.
The decision to assemble electronic boards in its own Italian facility is in contrast with the industry trend to relocate electronics production activities in Eastern Europe and Far East, but the results in terms of quality and in terms of flexibility confirm the accuracy of the company's strategic decision, much appreciated by customers.

For the automatic assembly of boards ASEM uses technologically advanced machinery, tools and equipment, such as precise and fast SMT Pick & Place positioners, selective welding machines for "through all" components and ovens reflow, ensuring productivity , flexibility and quality.
The in-house assembly of electronic boards and a constant dialogue between operations' managers and the R&D engineers increase the sensitivity of electronics and mechanical designers towards production and test phases, with a consequent advantage of an increased reliability of the overall system.

The electronic components are supplied by the major global manufacturers and are specifically selected to ensure a long life cycle of products. Mechanical parts are purchased from European suppliers selected with rigorous qualification procedures.
100% of the electronic boards are subject to burn-in and functional tests for a minimum of 8 hours in special designed climatic chambers. 100% of the assembled systems are subjected to functional tests for 8 consecutive hours.

Continuity
The full control of design and production processes and the close cooperation with technology trend setters allow ASEM to ensure a 7/10 years life cycle of its systems and reparability of the same for at least 5 further years, with availability of spare parts.
ASEM guarantees End of Life procedures lasting from 6 to 12 months for the Last Buy Order and deliveries.

Industrial **PC & Monitor features**

More than 20 years of Industrial PCs

Since many years the “x86” (PC) and recently ARM Cortex platform technologies represent the evolution towards open and standard platforms, replacing systems based on proprietary technology.
These “Open & Standard” technologies are driving the process of technological convergence and digital integration between ICT (Information and Communications Technology) and Industrial Automation.
Since the 80’s ASEM has been designing x86 technology and since more than 20 years has been leading the “Open Automation“ in Italy designing, engineering and manufacturing “Open & Standard” systems for the Industrial Automation market.

A complete product range

To satisfy different market needs, ASEM offers a wide range of industrial PCs including Panel PCs with LCDs from 6,5” to 24” in 4:3 and Wide 16:9 aspect ratios, Arm Mounting PCs with 15,6”, 18,5” and 21,5” Wide LCDs, Box PCs with wall or DIN rail mounting and a complete range of Industrial Panel Monitors with LCDs from 8,4” to 24” in 4:3 and 16:9 aspect ratios and Arm Mounting Monitors with LCDs from 15,6” to 21,5” in 16:9 aspect ratio.

Quality, reliability and performances

The mastery of hardware, firmware and system technologies and the long experience in mechanical design and engineering have enabled ASEM to manufacture high quality and extremely reliable Industrial PCs and Monitors with strong attention to details and excellent value for money.
The expertise on heat dissipation methods has allowed ASEM to manufacture fanless systems integrating high performance and high power consumption quad core processor.

Chassis and Front Panels

Over the years, ASEM has gained considerable experience on materials and surface treatments to ensure electrical conductivity, shielding optimization and protection from external agents to its industrial PCs and monitors’ chassis.
Chassis are made of galvanized steel or casted aluminum and are the result of an industrialization based on thermodynamic and fluid dynamic analysis aimed at a seamless integration of electronic boards and mechanical components.
To meet the specific needs of food, chemical and pharmaceutical industries, some systems are designed and manufactured with stainless steel frames and chassis.
One of the most important details of Panel PCs and Monitors are the front panels, designed to meet aesthetic, ergonomic and robustness requirements and at the same time ensure IP65 / IP66 protection degree, even with USB interfaces.
The ASEM standards include four front panel variants for Panel PCs and monitors: Aluminum with resistive touchscreen, Aluminum True Flat with resistive touchscreen, Stainless Steel True Flat with resistive touchscreen and Aluminum True Flat with projected capacitive (P-CAP) Multi-touchscreen.
The four front panels are available for all Panel PCs families of the HT series, for MH and MH-R panel monitor families and for all future panel PCs and monitor families.

Interchangeability and continuity

With a product life cycle of at least 7/10 years, ASEM designs Panel PCs and monitors with the same cut-out (hole size needed for the installation) for each different LCD size to ensure interchangeability, without mechanical changes, among different families and compatibility with future families allowing to up-grade the Panel PC or monitor even on machines on the field since many years.

UPS and Power Supply Systems

To prevent noise and overvoltage, IPCs and monitors’ power supplies have galvanic isolation. Industrial PCs based on x86 processors have the option to integrate on the power supply unit the UPS (Uninterruptible Power Supply) function with an external battery pack.
ARM based systems can integrate a Micro-UPS with super capacitors.

Motherboards

The IPC’s motherboards have microprocessors included in Intel® or AMD® embedded roadmap, with a long life cycle guaranteed by the manufacturer.
ASEM motherboards use different platform technologies with scalable performances, from entry-level processors in terms of price up to high performance dual and quad core processors, providing different expandability in terms of communication interfaces and expansion slots.
Currently, ASEM portfolio includes the latest generation Intel® BayTrail platform, with dual and quad core Atom E38xx processors, and quad core Celeron J1900 ,the 4th generation Intel® Core™ microprocessors Haswell ULT and H2 and ARM-based systems equipped with dual and quad core Freescale® iMX6 processors.
Motherboards are designed to provide “all-in-one“ integration of every possible function (for instance the touchscreen controller) and minimize cables and connectors in order to make systems more resistant to possible vibrations and shocks in industrial environments.
100% of the motherboards are subject to burn-in and functional tests, for 8 consecutive hours, in dedicated climate chambers.
All motherboards feature the ASEM System Identity, a non-volatile storage for system identification data, as well as other useful customers’ data for system traceability.
One of the R&D teams is dedicated to BIOS and low level driver development for X86 platforms and to BSP (Board Support Package), boot loader and low-level drivers development for ARM CORTEX platforms.

Operating Systems

Depending on microprocessor platform, ASEM ensures full compatibility of x86 systems with WIN 32/64 Standard/ Embedded and Windows Embedded Compact 7 PRO operating systems and full compatibility with the most popular Linux distributions.
ARM Cortex A8 and A9 platforms support Windows Embedded Compact 7 PRO and a Linux distribution assembled by ASEM.
ASEM specialists can also give support to implement a customer made image or develop customized embedded Win 32/64 and Linux images on specific customers request.

Fieldbuses

All x86 systems’ motherboards released by ASEM in the last three years include an embedded slot dedicated to fieldbuses (NetcoreX) boards, Master and Slave versions, that support the most spread industrial fieldbuses such as EtherCAT, CANopen, Profibus, Profinet IO and EtherNet / IP.

Compatibility, testing and systems certification
All ASEM industrial PCs and ARM-based systems are optimized for the use of Premium HMI and Ubiquity remote assistance software platforms.
Most of the systems are also certified for the use of CODESYS SoftPLC and SoftMotion platform, also for real-time applications.
100% of sold systems are subject to functional tests at room temperature for 8 consecutive hours, and sample systems are subjected to functional tests at temperature ranging from 0 to 50 °C for 8 consecutive hours.
All ASEM products comply with EMC directives for emissions and immunity, the low voltage safety directive and the RoHS directive.
Most of the products and systems comply with UL norms and specific products comply with the ATEX norms.

Custom Solutions

The complete control of hardware, firmware and software technologies allows ASEM to realize custom systems for specific customer needs.

Light custom Solutions
Custom-light services provide different levels of customization of ASEM standard products:

Aesthetic light custom, such as:
→ removal or substitution of the ASEM trademark with a label showing the brand and/or logo of the customer;
→ customization of front film with silkscreen printing of client brands and/or logotype;

Mechanical light custom, such as:
→ personalization of the shape and / or thickness of the front panel;
→ Customization of the layout of the keyboard on the front panel;

Electronic light custom, such as:
→ development of a different backplane;
→ addition of communication interfaces and / or modification of the standard configuration.

The customizations described do not involve any structural changes to standard products and meet the typical needs of OEMs and System Integrators who want to offer their own solutions to the market with a homogeneous representation of the brand. Custom-light solutions can be made in a relatively short time and low volume production.

Full custom solutions
Custom-full services include the creation of new platforms and solutions based on customer specifications.
ASEM does not normally sell the intellectual property of custom projects, as their realization is solely dedicated to ASEM serial production.
Custom full services include the following development activities:

Mechanical custom-full, such as:
→ creation of a new mechanical solution, also with plastic parts, that uses existing electronic cards and/or motherboards;

Electronic custom full, such as:
→ development of new motherboards and/or electronic cards;

Complete custom-full, such as:
→ development of a new system or solution that includes the design of plastic and mechanical components as well as electronic boards.

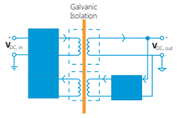
The **ASEM Standards**

ASEM STANDARDS

ASEM has set the electronic and mechanical design standards for Panel PC, Box PC and Monitor families to guarantee maximum flexibility, higher safety and continuity to customers.

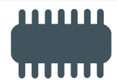
A unique cut-out for each different size of LCD to ensure:
→ Interchangeability among different families of Panel PCs and Monitors
→ Mechanical compatibility with future families

Front panel available in four different variants
→ Aluminum with USB port
→ Aluminum True Flat with USB port
→ Stainless Steel True Flat
→ Aluminum True Flat with glass projected capacitive multitouch-screen



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 guarantee:
→ Power supply with grounded positive terminal (e.g. Japan)

Power supply version with integrated UPS (uninterruptible power supply)
→ With external battery pack - rear of the system or standalone wall mounting



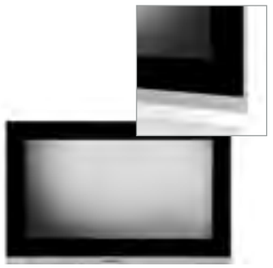
ASEM system identity
→ Non-volatile memory for system identification data storage

Four variants of the front panel

Aluminum with USB

Aluminum True Flat with USB port

Stainless Steel True Flat



Aluminum P-CAP Multitouch

INDUSTRIAL PCs AND MONITORs PRODUCT PORTFOLIO

1. ARM based Panels

The ARM based Panels, with Cortex A8 processors, are available with Microsoft Windows Embedded Compact 7 Pro or Linux operating systems.
They include a wide range of 16 million color TFT LED Backlight LCD screens, from 4,3" up to 15,6" with Aluminum and Aluminum True Flat front panels.

RT25	RT30	RT31
		
p. 17	p. 18	p. 18

2. PANEL PCs

ASEM Panel PCs are low consumption and high computing performances systems, with or without fans, based on Atom, Celeron and Core™ i3, i5, i7 dual and quad Core™ processors.
Available with TFT LCDs from 6,5" to 24" and Aluminum, Aluminum True Flat, Stainless Steel True Flat with resistive touchscreens and Aluminum True Flat with projected capacitive Multitouch-screen.

HT700	HT2000	HT2200
		
p. 22	p. 24	p. 26

HT3000	HT5000
	
p. 28	p. 30

3. BOX PCs

ASEM provides a full range of Box PCs in terms of configurability, dimensions and performances.
They are based on Atom, Celeron, Core™ i3, i5, i7 dual and quad core processors and they are suitable for wall and DIN rail mounting.

PB2000 S0	PB2200 SL	PB3000 S0
		
p. 34	p. 36	p. 38

PB3000 S1	PB5000 S0	PB5000 S3
		
p. 38	p. 40	p. 40

4. Arm MOUNTING PCs

The Arm Mounting PCs are compact, fanless, ergonomic and easy to install systems with a stylish design. Based on Intel® Haswell ULT platform they are available with 15,6", 18,5", 21,5" TFT LCDs in a full IP65 aluminum chassis.

VK3200

p. 44

5. RACK PCs

19" 4U rack solutions with a wide range of configurations, motherboards, expansion slots and Intel® Core™ i3, i5, i7, dual and quad core processors.

PR4045 / PR4145	PR4046 / PR4146	PR4047 / PR4147
		
p. 47	p. 48	p. 49

6. INDUSTRIAL MONITORS

Panel Industrial Monitors are available with 8,4" to 21,5" LCDs and four front panels variants. Arm Mounting Monitors are compact, fanless, ergonomic and easy to install solutions with a stylish design, and are available with 15,6", 18,5" and 21,5" TFT LCDs in a full IP65 Aluminum chassis. Industrial Monitor families are available with up to 100 m. remotation for digital video and USB 2.0 signals, with a simple and economic CAT5E SFTP cable.

MH / MH-R	MK / MK-R
	
p. 52	p. 54

1. **ARM based Panels**

The ARM based Panels, with Cortex A8 processors, are available with Microsoft Windows Embedded Compact 7 Pro or Linux operating systems.
They include a wide range of 16 million color TFT LED Backlight LCDs, from 4,3” up to 15,6” with Aluminum and Aluminum True Flat front panels.

RT25
4,3” and 7” ARM based Panels

The entry-level panels RT25 are based on 1 GHz ARM Cortex A8 processor and Microsoft Windows Embedded Compact 7 PRO or Linux operating system.

The Linux image is designed for customers developing own applications and/or using Linux version of SoftPLC CODESYS.

RT25 panels are available with 16 million color 4,3” and 7” Wide TFT LED Backlight LCDs, 4 wires resistive touchscreens and Aluminum or Aluminum True Flat front panels.

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Highlights

- → 1 GHz ARM Cortex A8 processor
- → 4,3” and 7” Wide TFT LCDs
- → Microsoft Windows Embedded Compact 7 PRO / Linux operating system
- → IP66 front panel protection degree
- → CE, cULus LISTED (508) certifications

RT30 / RT31

From 5,7” to 15,6” Wide ARM based Panels

The entry-level panels RT30/31 are based on 1 GHz and 800 MHz ARM Cortex A8 processors and Microsoft Windows Embedded Compact 7 PRO or Linux operating system.

The Linux image is designed for customers developing own applications and/or using Linux version of SoftPLC CODESYS.

The RT30/31 panels are available with 16 million color TFT LED Backlight LCDs, from 5,7” up to 15,6” Wide, 4 and 5 wires resistive touchscreens and Aluminum or Aluminum True Flat front panels.

Highlights

- → 1 GHz / 800 MHz ARM Cortex A8 processors
- → From 5,7” to 15,6” Wide LCDs
- → Microsoft Windows Embedded Compact 7 PRO / Linux operating system
- → Rear access on-board SD/SDHC slot
- → 1 optoisolated CAN channel (RT31)
- → MicroUPS (optional)
- → IP66 front panel protection degree
- → CE, cULus LISTED (508) certifications

Technical Data

	RT25	RT25-TF	RT30	RT30-TF	RT31	RT31-TF
OS AVAILABLE	Microsoft Windows Embedded Compact 7 Pro					
	Embedded Linux distribution based on Yocto Project					
	No OS					
LED blacklight TFT LCD	4.3” - 480x272 7” - 800x480		5.7” - 640x480 7” - 800x480 8.4" - 800x600 10.4” - 800x600 12.1" - 800x600 12.1" - 1024x768 15.0" - 1024x768 15.6" - 1366x768		7” - 800x480 8.4" - 800x600 10.4” - 800x600 12.1" - 800x600 12.1" - 1024x768 15.0" - 1024x768 15.6" - 1366x768	
TOUCH-SCREEN	Resistive 4 wires		Resistive 4 wires for 5.7” and 7”			
			Resistive 5 wires for other sizes			
FRONT PANEL	Aluminum	Aluminum True Flat	Aluminum	Aluminum True Flat	Aluminum	Aluminum True Flat
PROTECTION GRADE	IP66, Enclosure type 4x - frontal					
PROCESSOR	ARM Cortex A8 processor Freescale® i.MX535 1 GHz				ARM Cortex A8 processor Freescale® i.MX537 800 MHz	
SYSTEM MEMORY - RAM	1 GB with DDR3 chips soldered					
MASS STORAGE	256 MB Read-Only NAND-Flash for operating system and runtime					
	4 GB eMMC (Solid State Disk) 8 bit, file system organization for projects and applications					
	-		1 x Slot SD/SDHC v2.0			
LAN	LAN1 Ethernet 100 Mbps (RJ45)		LAN1 Ethernet 100 Mbps (RJ45)			
			LAN2 Ethernet 10/100 Mbps (RJ45)			
USB	1 x USB 2.0 (Type-A, rear)		2 x USB 2.0 (Type-A, rear)			
SERIAL	1 x RS-232/422/485 (DB15M)					
FIELDBUS	-				1 x CAN optoisolated channel (DB9M) with FlexCAN integrated controller	
POWER SUPPLY UNIT	24VDC				24VDC isolated	
	-		Backup for microinterruption, max 500ms, with supercapacitors (optional)			
OPERATING TEMPERATURE	0°- 50°C					
APPROVALS	CE, cULus					

2. **Panel PCs**

ASEM Panel PCs are low consumption and high computing performances systems, with or without fans, based on Atom, Celeron and Core™ i3, i5, i7 dual and quad Core™ processors. Available with TFT LCDs from 6,5" to 24" and Aluminum, Aluminum True Flat, Stainless Steel True Flat with resistive touchscreens and Aluminum True Flat with projected capacitive Multitouch-screen.

HT700

Fanless Panel PC based on Intel® Tunnel Creek platform

The entry-level, cost-effective fanless HT700 Panel PC family is based on 1 GHz E640 and 1,6 GHz E680 Intel® Tunnel Creek processors.
The all-in-one motherboard features two rear access USB 2.0 ports, two 10/100/1000 Mbps Ethernet ports with “Jumbo Frame” and “Wake on Lan” support, one serial RS232 interface, one rear external access Compact Flash slot and 1 GB or 2 GB on-board RAM configurations with 800 MHz DDR2 chips.
HT700 family is available with 6,5”, 8,4”, 10,4”, 12,1” and 15” in 4:3 aspect ratio and 7”, 15,6” 18,5” in 16:9 Wide aspect ratio 16 million color TFT LED Backlight LCDs and aluminum (HT) or aluminum True Flat (HT-TF) with 5 wires resistive touchscreen front panels with one USB port.
The versions with 15,6” and 18,5” Wide LCDs are also available with Aluminum True Flat front panels with projected capacitive Multitouch-screen (HT-TFM).
Panels with 12,1”, 15” LCDs are also available with Stainless Steel True Flat front panels (HT-TFX).

ASEM STANDARDS

Highlights

- → Fanless Panel PC with 0-50 °C operating temperature
- → Intel® Tunnel Creek platform and 1 GHz E640 and 1,6 GHz E680 processors
- → 6,5”, 8,4”, 10,4”, 12,1” and 15” in 4:3 aspect ratio and 7”, 15,6” 18,5” in 16:9 Wide aspect ratio TFT LCDs
- → Built-in UPS with external battery pack (optional)
- → IP66 or IP66K front panel protection degree
- → CE, cULus LISTED (508) certification

Gallery

Technical data

	HT700	HT700-TF	HT700-TFX	HT700-TFM
LED blacklight TFT LCD	6.5" - 640x480 7" - 800x480 8.4" - 800x600 10.4" - 800x600 12.1" - 800x600 12.1" - 1024x768 15.0" - 1024x768 15.6" - 1366x768 18.5" - 1366x768		12.1" - 800x600 12.1" - 1024x768 15.0" - 1024x768	15.6" - 1366x768 18.5” - 1366x768
TOUCH-SCREEN	Resistive 5 wires GFG (optional)	Resistive 5 wires	Resistive 5 wires	P-CAP Multitouch, 4 fingers
FRONT PANEL	Aluminum	True Flat Aluminum	True Flat Stainless Steel	True Flat Aluminum
PROTECTION GRADE	IP66 - frontal		IP66K - frontal	
PROCESSOR	Intel® Atom™ E640 1,00 GHz, 1 core / 2 threads, 512KB L2 cache, soldered			
	Intel® Atom™ E680 1,60 GHz soldered, 1 core / 2 threads, 512KB L2 cache, soldered			
CHIPSET	Intel® EG20T			
VIDEO CONTROLLER	Integrated in Intel® Atom™ microprocessor, 320MHz (E640) or 400MHz (E680), LVDS 8bit/color digital interface			
SYSTEM MEMORY - RAM	1 GB or 2 GB with DDR2 chips soldered			
MASS STORAGE	1 bootable CompactFlash on board with external access			
	1 x SSD or 1 x HDD 2,5" SATA II (ONLY for systems with 8.4" or greater LCD)			
	1 x SSD Half-Slim SATA II (ONLY for systems with 6.5" and 7" LCD)			
LAN	2 x LAN 10/100/1000Mbps (RJ45, 1 x Intel® 82574L, 1 x integrated in Intel® EG20T + PHY Realtek® RTL8211E)			
USB	2 x USB 2.0 (Type-A, rear) 1 x USB 2.0 (Type-A, front)		2 x USB 2.0 (Type-A, rear)	
SERIAL	1 x RS232 (DB9M)			
ADD-ON INTERFACES (optional, max 1)	1 x RS232/422/485 (DB15M)+ 1 x USB 2.0 (Type-A)			
	1 x RS232/422/485 (DB15M) optoisolated + 1 x USB 2.0 (Type-A)			
	2 x RS232 (DB9M)			
	2 x USB 2.0 (Type-A)			
EXPANSION SLOTS	2 x MiniPCI dedicated to ASEM fieldbuses, I/O and NVRAM boards			
POWER SUPPLY UNIT	24VDC isolated with or without UPS (optional) with external battery pack			
O.S. CERTIFIED	Microsoft Windows 7 Pro/Ultimate 32bit, Windows XP Pro 32bit, Microsoft Windows Embedded Standard 7E/7P 32 bit, Windows Embedded Standard 2009 (XPe SP3) 32bit, Microsoft Windows Embedded Compact 7 Pro			Microsoft Windows 7 Pro/ Ultimate 32bit, Microsoft Windows Embedded Standard 7P 32 bit
OPERATING TEMPERATURE	0°- 50°C			
	0°- 45°C with HDD 24x7 or 18.5" LCD			
	5°- 45°C with standard HDD			
APPROVALS	CE, cULus LISTED (508)			

HT2000

Fanless Panel PC based on Intel® Cedar Trail platform

The fanless HT2000 Panel PC family is based on Intel® Cedar Trail platform with 1,86 GHz dual core D2550 third generation Atom processor.
The all-in-one motherboard features four rear access USB 2.0 ports, two 10/100/1000 Mbps Ethernet ports with "Jumbo Frame" and "Wake on Lan" support, one serial RS232 interface, one rear external access CFast SATA II slot and RAM configuration up to 4 GB DDR3 SODIMM.
HT2000 family is available with 10,4", 12,1" and 15" in 4:3 aspect ratio, 17" and 19" in 5:4 aspect ratio, 15,6", 18,5" and 21,5" in 16:9 Wide aspect ratio 16 million color TFT LED Backlight LCDs and aluminium (HT) or aluminium True Flat (HT-TF) with 5 wires resistive touchscreen front panels with one USB port.
The versions with 15,6", 18,5" and 21,5" Wide LCDs are also available with Aluminum True Flat front panels with projected capacitive Multitouch-screen (HT-TFM).
Panels with 12,1", 15", 17" and 19" LCDs are also available with Stainless Steel True Flat front panels (HT-TFX).

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ASEM STANDARDS

Highlights

- → Fanless Panel PC with 0-50 °C operating temperature
- → Intel® Cedar Trail platform and 1,86 GHz D2550 dual core processor
- → 10,4", 12,1" and 15" in 4:3 aspect ratio, 17" and 19" in 5:4 aspect ratio, 15,6", 18,5" and 21,5" in 16:9 Wide aspect ratio TFT LCDs
- → Built-in UPS with external battery pack (optional)
- → 1 PCI or 1 PCIe x1 expansion slot (S1 version)
- → IP66 or IP66K protection degree
- → CE, cULus LISTED (508) certification

Gallery

Technical data

	HT2000	HT2000-TF	HT2000-TFX	HT2000-TFM
LED blacklight TFT LCD	10.4" - 800x600 12.1" - 800x600 12.1" - 1024x768 15.0" - 1024x768 15.6" - 1366x768 17" - 1280x1024 18.5" - 1366x768 19" - 1280x1024 21.5"- 1920x1080		12.1" - 800x600 12.1" - 1024x768 15.0" - 1024x768 17" - 1280x1024 19" - 1280x1024	15.6" - 1366x768 18.5" - 1366x768 21.5"- 1920x1080
TOUCH-SCREEN	Resistive 5 wires GFG (optional)	Resistive 5 wires	Resistive 5 wires	P-CAP Multitouch, 4 fingers
FRONT PANEL	Aluminum	True Flat Aluminum	True Flat Stainless Steel	True Flat Aluminum
PROTECTION GRADE	IP66 - frontal		IP66K - frontal	
PROCESSOR	Intel® Atom™ D2550 1,86 GHz, 2 cores / 4 threads, 1MB L2 cache, soldered			
CHIPSET	Intel® NM10			
VIDEO CONTROLLER	GMA3650 Integrated in Intel® Atom™ microprocessor, 640MHz, LVDS 8bit/color digital interface			
SYSTEM MEMORY - RAM	1GB or 2GB or 4GB (1 x SODIMM DDR3 module)			
MASS STORAGE	1 bootable CFast embedded on board with external access			
	1 x SSD or 1 x HDD 2,5" SATA II			
LAN	2 x LAN 10/100/1000Mbps (2 x Intel® 82574L)			
USB	4 x USB 2.0 (Type-A, rear) 1 x USB 2.0 (Type-A, front)		4 x USB 2.0 (Type-A, rear)	
SERIAL	1 x RS232 (DB9M)			
VIDEO OUTPUT	1 x VGA or 1 x DVI-I (DVI-D + VGA)			
ADD-ON INTERFACES (optional, max 1)	1 x RS232/422/485 (DB15M)+ 1 x USB 2.0 (Type-A)			
	1 x RS232/422/485 (DB15M) optoisolated + 1 x USB 2.0 (Type-A)			
	2 x RS232 (DB9M)			
	2 x USB 2.0 (Type-A)			
EXPANSION SLOTS S0	2 x MiniPCI dedicated to ASEM fieldbuses, I/O and NVRAM boards			
S1	2 x MiniPCI dedicated to ASEM fieldbuses, I/O and NVRAM boards			
	1 x PCI or 1 x PCIe x1 (2.5 Gb/s)			
POWER SUPPLY UNIT	24VDC isolated with or without UPS (optional) with external battery pack			
O.S. CERTIFIED	Microsoft Windows 7 Pro/Ultimate 32bit, Windows XP Pro 32bit, Microsoft Windows Embedded Standard 7E/7P 32 bit, Windows Embedded Standard 2009 (XPe SP3) 32bit, Microsoft Windows Embedded Compact 7 Pro			Microsoft Windows 7 Pro/ Ultimate 32bit, Microsoft Windows Embedded Standard 7P 32 bit
OPERATING TEMPERATURE	0°- 50°C			
	0°- 45°C with HDD 24x7			
	5°- 45°C with standard HDD			
APPROVALS	CE, cULus LISTED (508)			

HT2200 [new]

Fanless Panel PC based on Intel® Bay Trail platform

The fanless HT2200 Panel PC family offers an excellent price/performance ratio and is based on the Intel® Bay Trail SoC dual/quad core high performance processors.
The all-in-one motherboard features one rear access USB 3.0 port, two USB 2.0 ports, two 10/100/1000 Mbps Ethernet ports, one serial RS232 interface, one rear external access CFast SATA II slot, one DVI-I (DVI-D + VGA) video output and RAM configuration up to 8 GB DDR3 SODIMM.
HT2200 family is available with 10,1" (16:10), 10,4", 12,1" and 15" in 4:3 aspect ratio, 17" and 19" in 5:4 aspect ratio, 15,6", 18,5", 21,5", 24" in 16:9 Wide aspect ratio 16 million color TFT LED Backlight LCDs and aluminium (HT) or aluminium True Flat (HT-TF) with 5 wires resistive touchscreen front panels with one USB port.
The versions with 15,6", 18,5" and 21,5" Wide LCDs are also available with Aluminum True Flat front panels with projected capacitive Multitouch-screen (HT-TFM).
Panels with 12,1", 15", 17" and 19" LCDs are also available with Stainless Steel True Flat front panels (HT-TFX).

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ASEM STANDARDS

Highlights

- → Fanless Panel PC with 0-50 °C operating temperature
- → High performance Intel® Bay Trail SoC dual/quad core processors
- → 10,1" in 16:10 aspect ratio, 10,4", 12,1" and 15" in 4:3 aspect ratio, 17" and 19" in 5:4 aspect ratio, 15,6", 18,5", 21,5", 24" in 16:9 Wide aspect ratio TFT LCDs
- → Built-in UPS with external battery pack (optional)
- → 1 PCI or 1 PCIe x1 expansion slot (S1 version)
- → SL version with reduced depth)
- → IP66 or IP66K front panel protection degree
- → CE, cULus LISTED (508) certification

Gallery

Technical data

	HT2200	HT2200-TF	HT2200-TFX	HT2200-TFM
LED blacklight TFT LCD	10,1" - 1280x800 10.4" - 800x600 12.1" - 800x600 12.1" - 1024x768 15.0" - 1024x768 15.6" - 1366x768 17" - 1280x1024 18.5" - 1366x768 19" - 1280x1024 21.5"- 1920x1080 24" - 1920x1080		12.1" - 800x600 12.1" - 1024x768 15.0" - 1024x768 17" - 1280x1024 19" - 1280x1024	15.6" - 1366x768 18.5" - 1366x768 21.5"- 1920x1080
TOUCH-SCREEN	Resistive 5 wires GFG (optional)	Resistive 5 wires	Resistive 5 wires	P-CAP Multitouch, 4 fingers
FRONT PANEL	Aluminum	True Flat Aluminum	True Flat Stainless Steel	True Flat Aluminum
PROTECTION GRADE	IP66 - frontal		IP66K - frontal	
PROCESSOR	Intel® Celeron J1900 2.00Ghz, 4 cores / 4 threads, 2MB L2 cache, soldered			
VIDEO CONTROLLER	Intel® HD Graphics integrated in microprocessor, 688MHz Clock 854MHz Turbo, LVDS 8bit/color digital interface			
SYSTEM MEMORY - RAM	1GB or 2GB or 4GB or 8GB (1 x SODIMM DDR3 module)			
MASS STORAGE SL	1 bootable CFast embedded on board with external access			
	1 x SSD mSATA SATA II			
S0/S1	1 bootable CFast on board with external access			
	1 x SSD mSATA SATA II or 1 x SSD or 1 x HDD 2,5" SATA II			
LAN	2 x LAN 10/100/1000Mbps (2 x Intel® I210)			
USB	1 x USB 3.0 (Type-A, rear)		1 x USB 3.0 (Type-A, rear)	
	2 x USB 2.0 (Type-A, rear)		2 x USB 2.0 (Type-A, rear)	
	1 x USB 2.0 (Type-A, front)			
SERIAL	1 x RS232 (DB9M)			
VIDEO OUTPUT	1 x DVI-I (DVI-D + VGA with adapter)			
ADD-ON INTERFACES (optional for S0/S1, max 1)	1 x RS232/422/485 (DB15M)+ 1 x USB 2.0 (Type-A)			
	1 x RS232/422/485 (DB15M) optoisolated + 1 x USB 2.0 (Type-A)			
	2 x RS232 (DB9M)			
	2 x USB 2.0 (Type-A)			
EXPANSION SLOTS S1	1 x PCI or PCIe x1 (2.5 Gb/s)-			
POWER SUPPLY UNIT	24VDC isolated with or without UPS (optional) with external battery pack			
O.S. CERTIFIED	Microsoft Windows 7 Pro/Ultimate 32/64bit, Microsoft Windows Embedded Standard 7E/7P 32/64 bit, Microsoft Windows Embedded Compact 7 Pro, Microsoft Windows 8.1 Industry Pro			Microsoft Windows 7 Pro/ Ultimate 32/64bit, Microsoft Windows Embedded Standard 7P 32/64 bit, Microsoft Windows 8.1 Industry Pro
OPERATING TEMPERATURE	0°- 50°C			
	0°- 45°C with standard HDD			
	5°- 45°C with standard HDD			
APPROVALS	CE, cULus LISTED (508)			

HT3000

Fanless Panel PC based on Intel® Ivy Bridge platform

The fanless HT3000 Panel PC family is based on the Intel® Ivy Bridge platform and 17 or 35 Watt third generation Core™ i7, Core™ i5, Core™ i3 and Celeron dual core processors soldered on board.
The all-in-one motherboard features two USB 3.0 and two rear access USB 2.0, three 10/100/1000 Mbps Ethernet ports with "Jumbo Frame" and "Wake on Lan" support.
It also features one connector for mSATA SSD, one rear external access CFast SATA II slot, an additional standard DVI-I (DVI-D + VGA) video output and one connector for 2,5" SATA III HDD or SSD.
The RAM can be configured up to 16 GB with DDR3 SODIMM modules.
HT3000 family is available with 12,1" and 15" in 4:3 aspect ratio, 17" and 19" in 5:4 aspect ratio and 15,6", 18,5", 21,5", 24" in Wide 16:9 aspect ratio 16 million color TFT LED Backlight LCDs and aluminium (HT) or aluminium True Flat (HT-TF) with 5 wires resistive touchscreen front panels with one USB port.
The versions with 15,6", 18,5" and 21,5" Wide LCDs are also available with Aluminum True Flat front panels with projected capacitive Multitouch-screen (HT-TFM).
Panels with 12,1", 15", 17" and 19" LCDs are also available with Stainless Steel True Flat front panels (HT-TFX).

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ASEM STANDARDS

Highlights

- → Fanless Panel PC with 0-50 °C operating temperature
- → Intel® Ivy Bridge platform with third generation Core™ i3, Core™ i5, Core™ i7 dual and quad core and Celeron dual core up to 35 W
- → 12,1" and 15" in 4:3 aspect ratio, 17" and 19" in 5:4 aspect ratio and 15,6", 18,5", 21,5" Wide 16:9 aspect ratio TFT LCDs
- → 1 PCI or 1 PCIe x4 expansion slots (S1 version)
- → IP66 or IP66K front panel protection degree
- → CE, cULus LISTED (508) certifications

Gallery

Technical data

	HT3000	HT3000-TF	HT3000-TFX	HT3000-TFM
LED blacklight TFT LCD	12.1" - 800x600 12.1" - 1024x768 15.0" - 1024x768 15.6" - 1366x768 17" - 1280x1024	18.5" - 1366x768 19" - 1280x1024 21.5"- 1920x1080 24" - 1280x1080	12.1" - 800x600 12.1" - 1024x768 15.0" - 1024x768 17" - 1280x1024 19" - 1280x1024	15.6" - 1366x768 18.5" - 1366x768 21.5"- 1920x1080
TOUCH-SCREEN	Resistive 5 wires GFG (optional)	Resistive 5 wires	Resistive 5 wires	P-CAP Multitouch, 4 fingers
FRONT PANEL	Aluminum	True Flat Aluminum	True Flat Stainless Steel	True Flat Aluminum
PROCESSOR (soldered)	Intel® Celeron™ 1047E, 1.40GHz, 2 cores / 2 threads, 2MB Smart cache, 17W			
	Intel® Celeron™ 1020E, 2.20GHz, 2 cores / 2 threads, 2MB Smart cache, 35W			
	Intel® Core™ i3-3120ME, 2.40GHz, 2 cores / 4 threads, 3MB Smart cache, 35W			
	Intel® Core™ i5-3610ME, 2.70GHz (3.3GHz Turbo), 2 cores / 4 threads, 3MB Smart cache, 35W			
	Intel® Core™ i7-3612QE, 2.1GHz (3.1GHz Turbo), 4 cores / 8 threads, 6MB Smart cache, 35W			
CHIPSET	Intel® HM76 Express Chipset			
VIDEO CONTROLLER	Intel® HD Graphics, 650MHz integrated in Celeron™ microprocessor			
	Intel® HD Graphics 4000, 650MHz integrated in Core™ microprocessor			
SYSTEM MEMORY - RAM	2GB or 4GB or 8GB or 16GB (2 x SODIMM DDR3 modules)			
MASS STORAGE	1 bootable CFast embedded on board with external access			
	1 x SSD or 1 x HDD 2,5" SATA II			
	1 x mSATA SSD			
LAN	3 x LAN 10/100/1000Mbps (2 x Intel® 82574L, 1 x Intel®82579LM)			
USB	2 x USB 3.0 (Type-A, rear)		2 x USB 3.0 (Type-A, rear)	
	2 x USB 2.0 (Type-A, rear)		2 x USB 2.0 (Type-A, rear)	
	1 x USB 2.0 (Type-A, front)			
SERIAL	1 x RS232 (DB9M)			
PS/2	1 x PS/2 for keyboard or mouse			
VIDEO OUTPUT	1 x VGA or 1 x DVI-I (DVI-D + VGA)			
ADD-ON INTERFACES (optional, max 1)	1 x RS232/422/485 (DB15M)+ 1 x USB 2.0 (Type-A)			
	1 x RS232/422/485 (DB15M) optoisolated + 1 x USB 2.0 (Type-A)			
	2 x RS232 (DB9M)			
	2 x USB 2.0 (Type-A)			
	1 x Ethernet 10/100/1000Mpbs, Intel® 82574L			
	Unmanaged Ethernet switch 4 x 10/100/1000Mbps			
EXPANSION SLOTS S0	2 x MiniPCI dedicated to ASEM fieldbuses, I/O and NVRAM boards			
S1	2 x MiniPCI dedicated to ASEM fieldbuses, I/O and NVRAM boards			
	1 x PCI or 1 x PCIe x4 (5 Gb/s)			
POWER SUPPLY UNIT	24VDC isolated with or without UPS (optional) with external battery pack			
O.S. CERTIFIED	Microsoft Windows 7 Pro/Ultimate 32/64bit, Windows XP Pro 32bit, Microsoft Windows Embedded Standard 7E/7P 32/64 bit, Windows Embedded Standard 2009 (XPe SP3) 32bit, Microsoft Windows Embedded Compact 7 Pro, Microsoft Windows 8.1 Industry Pro			Microsoft Windows 7 Pro/ Ultimate 32bit, Microsoft Windows Embedded Standard 7P 32 bit, Microsoft Windows 8.1 Industry Pro
OPERATING TEMPERATURE	0°- 50°C			
	0°- 45°C with HDD 24x7			
	5°- 45°C with standard HDD			
APPROVALS	CE, cULus LISTED (pending)			

HT5000

High expandable Panel PC based on Intel® Ivy Bridge platform

The HT5000 Panel PC family is based on Intel® Ivy Bridge platform and 35 or 45 Watt third generation Core™ i3, Core™ i5, Core™ i7 dual and quad core and Celeron dual core processors on socket.
The all-in-one motherboard feature two USB 3.0 and two USB 2.0 with rear access and three 10/100/1000 Mbps Ethernet with "Jumbo Frame" and "Wake on Lan" support.
It also features one connector for mSATA SSD, a serial RS232 interface, one rear external access CFast SATA II slot, an additional standard DVI-I (DVI-D + VGA) video output.
HT5000 can also be configured in RAID 0, 1 (optional) and it features connectors for two 2,5" SATA III HDD or SSD (also with extractable drawers).
The RAM can be configured up to 16 GB RAM with two DD3 SODIMM modules.
HT5000 family is available with 15" in 4:3 aspect ratio, 17" and 19" in 5:4 aspect ratio and 15,6", 18,5", 21,5", 24" in Wide 16:9 aspect ratio 16 million color TFT LED Backlight LCDs and aluminium (HT) or aluminium True Flat (HT-TF) with 5 wires resistive touchscreen front panels with one USB port.
The versions with 15,6", 18,5" and 21,5" Wide LCDs are also available with Aluminum True Flat front panels with projected capacitive Multitouch-screen (HT-TFM).
Panels with 15", 17" and 19" LCDs are also available with Stainless Steel True Flat front panels (HT-TFX).

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ASEM STANDARDS

Highlights

- → Panel PC with 0-50 °C operating temperature
- → Intel® Ivy Bridge platform with third generation Core™ i3, Core™ i5, Core™ i7 dual and quad core and Celeron dual core up to 45 W processors on socket
- → 15" in 4:3 aspect ratio, 17" and 19" in 5:4 aspect ratio and 15,6", 18,5", 21,5", 24" in Wide 16:9 aspect ratio TFT LCDs
- → RAID 0, 1 configurations, also with extractable drawers (optional)
- → 110/230 VAC or 24 VDC power supply
- → 1 PCI or 1 PCIe x4 (S1 version) or 3 PCI or 2 PCI and 1 PCIe x4 (S3 version) expansion slots
- → IP66 or IP66K front panel protection degree
- → CE, cULus LISTED (508) certifications

Gallery

Technical data

	HT5000	HT5000-TF	HT5000-TFX	HT5000-TFM
LED blacklight TFT LCD	15.0" - 1024x768 15.6" - 1366x768 17" - 1280x1024 18.5" - 1366x768	19" - 1280x1024 21.5"- 1920x1080 24"- 1920x1080	15.0" - 1024x768 17" - 1280x1024 19" - 1280x1024	15.6" - 1366x768 18.5" - 1366x768 21.5"- 1920x1080
TOUCH-SCREEN	Resistive 5 wires GFG (optional)	Resistive 5 wires	Resistive 5 wires	P-CAP Multitouch, 4 fingers
FRONT PANEL	Aluminum	True Flat Aluminum	True Flat Stainless Steel	True Flat Aluminum
PROTECTION GRADE	IP66 - frontal		IP66K - frontal	
PROCESSOR (on socket)	Intel® Celeron™ 1020E, 2.20GHz, 2 cores / 2 threads, 2MB Smart cache, 35W			
	Intel® Core™ i3-3120ME, 2.40GHz, 2 cores / 4 threads, 3MB Smart cache, 35W			
	Intel® Core™ i5-3610ME, 2.70GHz (3.3GHz Turbo), 2 cores / 4 threads, 3MB Smart cache, 35W			
	Intel® Core™ i7-3610QE, 2.30GHz (3.3GHz Turbo), 4 cores / 8 threads, 6MB Smart cache, 45W			
CHIPSET	Intel® HM76 Express Chipset			
VIDEO CONTROLLER	Intel® HD Graphics, 650MHz integrated in Celeron™ microprocessor			
	Intel® HD Graphics 4000, 650MHz integrated in Core™ microprocessor			
SYSTEM MEMORY - RAM	2GB or 4GB or 8GB or 16GB (2 x SODIMM DDR3 modules)			
RAID	RAID 0, 1 (optional) with Intel® QM77 Express Chipset			
MASS STORAGE	1 bootable CFast embedded on board with external access 2 x SSD or HDD 2,5" SATA III (also in RAID or with extractable drawers) 1 x mSATA SSD			
LAN	3 x LAN 10/100/1000Mbps (2 x Intel® 82574L, 1 x Intel® 82579LM)			
USB	2 x USB 3.0 (Type-A, rear)		2 x USB 3.0 (Type-A, rear)	
	2 x USB 2.0 (Type-A, rear)		2 x USB 2.0 (Type-A, rear)	
	1 x USB 2.0 (Type-A, front)			
SERIAL	1 x RS232 (DB9M)			
PS/2	1 x PS/2 for keyboard or mouse			
VIDEO OUTPUT	1 x VGA or 1 x DVI-I (DVI-D + VGA)			
ADD-ON INTERFACES (optional, max 1)	1 x RS232/422/485 (DB15M)+ 1 x USB 2.0 (Type-A)			
	1 x RS232/422/485 (DB15M) optoisolated + 1 x USB 2.0 (Type-A)			
	2 x RS232 (DB9M)			
	2 x USB 2.0 (Type-A)			
	1 x Ethernet 10/100/1000Mpbs, Intel® 82574L			
	Unmanaged Ethernet switch 4 x 10/100/1000Mbps			
EXPANSION SLOTS S0	2 x MiniPCI dedicated to ASEM fieldbuses, I/O and NVRAM boards			
S1	2 x MiniPCI dedicated to ASEM fieldbuses, I/O and NVRAM boards			
	1 x PCI or PCIe x4 (5 Gb/s)			
S3	2 x MiniPCI dedicated to ASEM fieldbuses, I/O and NVRAM boards			
	3 x PCI or 2 x PCI + 1 x PCIe x4 (5 Gb/s)			
POWER SUPPLY UNIT	24VDC isolated with or without UPS (optional only for S0 or S1 versions) with external battery pack 110V / 230VAC			
O.S. CERTIFIED	Microsoft Windows 7 Pro/Ultimate 32/64bit, Windows XP Pro 32bit, Microsoft Windows Embedded Standard 7E/7P 32/64 bit, Windows Embedded Standard 2009 (XPe SP3) 32bit, Microsoft Windows Embedded Compact 7 Pro, Microsoft Windows 8.1 Industry Pro			Microsoft Windows 7 Pro/ Ultimate 32bit, Microsoft Windows Embedded Standard 7P 32 bit, Microsoft Windows 8.1 Industry Pro
OPERATING TEMPERATURE	0°- 50°C 0°- 45°C with HDD 24x7 5°- 45°C with standard HDD			
APPROVALS	CE, cULus LISTED (pending)			

3. **Box PCs**

ASEM provides a full range of Box PCs in terms of configurability, dimensions and performances. They are based on Atom, Celeron, Core™ i3, i5, i7 dual and quad core processors and they are suitable for wall and DIN rail mounting.

PB2000

Fanless Box PC with Intel® Cedar Trail platform

The fanless PB2000 Box PC is based on Intel® Cedar Trail platform with 1,86 GHz dual core D2550 third generation Atom processor.

The all-in-one motherboard features four USB 2.0 ports, two 10/100/1000 Mbps Ethernet ports with “Jumbo Frame” and “Wake on Lan”

support, one serial RS232 interface, one external access CFast SATA II slot and RAM configuration up to 4 GB DDR3 SODIMM.

ASEM STANDARDS

Highlights

- → Fanless Box PC with 0-50 °C operating temperature
- → Intel® Cedar Trail platform and 1,86 GHz D2550 dual core processor
- → Built-in UPS with external battery pack (optional)
- → 1 PCI or 1 PCIe x1 expansion slot (S1 version)
- → Wall or DIN rail installation
- → CE, cULus LISTED (508) certifications

Gallery

Technical data

	PB2000
PROCESSOR	Intel® Atom™ D2550 1,86 GHz, 2 cores / 4 threads, 1MB L2 cache, soldered
CHIPSET	Intel® NM10
VIDEO CONTROLLER	Integrated in Intel® Atom™ microprocessor, 640MHz, LVDS 8bit/color digital interface
SYSTEM MEMORY - RAM	1GB or 2GB or 4GB (1 x SODIMM DDR3 module)
MASS STORAGE	1 bootable CFast embedded on board with external access
	1 x SSD or 1 HDD 2,5” SATA II
LAN	2 x LAN 10/100/1000Mbps (2 x Intel® 82574L)
USB	4 x USB 2.0 (Type- A)
SERIAL	1 x RS232 (DB9M)
VIDEO OUTPUT	1 x VGA or 1 x DVI-I (DVI-D + VGA)
ADD-ON INTERFACES (optional, max 1)	1 x RS232/422/485 (DB15M)+ 1 x USB 2.0 (Type-A)
	1 x RS232/422/485 (DB15M) optoisolated + 1 x USB 2.0 (Type-A)
	2 x RS232 (DB9M)
	2 x USB 2.0 (Type-A)
EXPANSION SLOTS S0	2 x MiniPCI dedicated to ASEM fieldbuses, I/O and NVRAM boards
S1	2 x MiniPCI dedicated to ASEM fieldbuses, I/O and NVRAM boards
	1 x PCI or 1 x PCIe x1 (2.5 Gb/s)
POWER SUPPLY UNIT	24VDC isolated with or without UPS (optional) with external battery pack
O.S. CERTIFIED	Microsoft Windows 7 Pro/Ultimate 32bit, Windows XP Pro 32bit, Microsoft Windows Embedded Standard 7E/7P 32 bit, Windows Embedded Standard 2009 (XPe SP3) 32bit, Microsoft Windows Embedded Compact 7 Pro
OPERATING TEMPERATURE	0°- 50°C
	0°- 45°C with HDD 24x7
	5°- 45°C with standard HDD
APPROVALS	CE, cULus LISTED (508)

PB2200 [new]

Fanless Box PC based on Intel® Bay Trail platform

The fanless PB2200 Box PC offers an excellent price/ performance ratio and is based on the Intel® Bay Trail SoC dual/quad core high performance processors.

The all-in-one motherboard features one USB 3.0 port, two USB 2.0 ports, two 10/100/1000 Mbps Ethernet ports, one serial RS232 interface, one external access

CFast SATA II slot, one DVI-I (DVI-D + VGA) video output and RAM configuration up to 8 GB DDR3 SODIMM.

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ASEM STANDARDS

Highlights

- → Fanless Box PC with 0-50 °C operating temperature
- → High performance Intel® Bay Trail SoC dual/quad core processors
- → SL version with reduced depth
- → Built-in UPS with external battery pack (optional)
- → 1 PCI or 1 PCIe x1 expansion slot (S1 version)
- → Wall or DIN rail installation
- → CE, cULus LISTED (508) certifications

Gallery

Technical data

	PB2200
PROCESSOR	Intel® Celeron J1900 2.00Ghz, 4 cores / 4 threads, 2MB L2 cache, soldered
VIDEO CONTROLLER	Intel® HD Graphics integrated in microprocessor, 688MHz Clock 854MHz Turbo, LVDS 8bit/color digital interface
SYSTEM MEMORY - RAM	1GB or 2GB or 4GB or 8GB (1 x SODIMM DDR3 module)
MASS STORAGE SL	1 bootable CFast on board with external access
	1 x SSD mSATA SATA II
S0/S1	1 bootable CFast embedded on board with external access
	1 x SSD mSATA SATA II or 1 x SSD or HDD 2,5" SATA II
LAN	2 x LAN 10/100/1000Mbps (2 x Intel® I210)
USB	1 x USB 3.0 (Type-A, rear)
	2 x USB 2.0 (Type-A, rear)
SERIAL	1 x RS232 (DB9M)
VIDEO OUTPUT	1 x DVI-I (DVI-D + VGA with adapter)
ADD-ON INTERFACES (optional for S0/S1, max 1)	1 x RS232/422/485 (DB15M)+ 1 x USB 2.0 (Type-A)
	1 x RS232/422/485 (DB15M) optoisolated + 1 x USB 2.0 (Type-A)
	2 x RS232 (DB9M)
	2 x USB 2.0 (Type-A)
EXPANSION SLOTS S1	1 x PCI or PCIe x1 (2.5 Gb/s)
POWER SUPPLY UNIT	24VDC isolated with or without UPS (optional) with external battery pack
O.S. CERTIFIED	Microsoft Windows 7 Pro/Ultimate 32/64bit, Microsoft Windows Embedded Standard 7E/7P 32/64 bit, Microsoft Windows Embedded Compact 7 Pro, Microsoft Windows 8.1 Industry Pro
OPERATING TEMPERATURE	0°- 50°C
	0°- 45°C with HDD 24x7
	5°- 45°C with standard HDD
APPROVALS	CE, cULus LISTED (508)

PB3000

Fanless Box PC with Intel® Ivy Bridge platform

The fanless PB3000 Box PC is based on the Intel® Ivy Bridge platform and 17 or 35 Watt third generation Core™ i7, Core™ i5, Core™ i3 and Celeron dual core processors soldered on board.

The all-in-one motherboard features two USB 3.0 and two USB 2.0, three 10/100/1000 Mbps Ethernet ports with "Jumbo Frame" and "Wake on Lan" support.
It also features one connector for mSATA SSD, one external access CFast SATA II slot, an additional standard DVI-I (DVI-D + VGA) video output and one connector for 2,5" SATA III HDD or SSD.
The RAM can be configured up to 16 GB with DDR3 SODIMM modules.

ASEM STANDARDS

Highlights

- → Fanless Box PC with 0-50 °C operating temperature
- → Intel® Ivy Bridge platform with third generation Core™ i3, Core™ i5, Core™ i7 dual and quad core and Celeron dual core up to 35 W processors soldered
- → 1 PCI or 1 PCIe x4 expansion slots (S1 version)
- → Wall or DIN rail Installation
- → CE, cULus LISTED (508) certification

Gallery

Technical data

	PB3000
PROCESSOR (soldered)	Intel® Celeron™ 1047UE, 1.40GHz, 2 cores / 2 threads, 2MB L2, 17W
	Intel® Celeron™ 1020E, 2.20GHz, 2 cores / 2 threads, 2MB L2, 35W
	Intel® Core™ i3-3120ME, 2.40GHz, 2 cores / 4 threads, 3MB L2, 35W
	Intel® Core™ i5-3610ME, 2.70GHz, 2 cores / 4 threads, 3MB L2, 35W
	Intel® Core™ i7-3612QE, 2.1GHz, 4 cores / 8 threads, 6MB L2, 35W
CHIPSET	Intel® HM76 Express Chipset
VIDEO CONTROLLER	Intel® HD Graphics, 650MHz integrated in Celeron™microprocessor
	Intel® HD Graphics 4000, 650MHz integrated in Core™microprocessor
SYSTEM MEMORY - RAM	2GB or 4GB or 8GB or 16GB (2 x SODIMM DDR3 modules)
MASS STORAGE	1 bootable CFast on board with external access
	1 x SSD or 1 x HDD 2,5" SATA III
	1 x mSATA SSD
LAN	3 x LAN 10/100/1000Mbps (2 x Intel® 82574L, 1 x Intel® 82579LM)
USB	2 x USB 3.0 (Type-A)
	2 x USB 2.0 (Type-A)
SERIAL	1 x RS232 (DB9M)
VIDEO OUTPUT	1 x VGA or 1 x DVI-I (DVI-D + VGA)
ADD-ON INTERFACES (optional, max 1)	1 x RS232/422/485 (DB15M)+ 1 x USB 2.0 (Type-A)
	1 x RS232/422/485 (DB15M) optoisolated + 1 x USB 2.0 (Type-A)
	2 x RS232 (DB9M)
	2 x USB 2.0 (Type-A)
	1 x Ethernet 10/100/1000Mpbs, Intel® 82574L
	Unmanaged Ethernet switch 4 x 10/100/1000Mbps
EXPANSION SLOTS S0	2 x MiniPCI dedicated to ASEM fieldbuses, I/O and NVRAM boards
S1	2 x MiniPCI dedicated to ASEM fieldbuses, I/O and NVRAM boards
	1 x PCI or 1 x PCIe x4 (5 Gb/s)
POWER SUPPLY UNIT	24VDC isolated with or without UPS (optional) with external battery pack
O.S. CERTIFIED	Microsoft Windows 7 Pro/Ultimate 32/64bit, Windows XP Pro 32bit, Microsoft Windows Embedded Standard 7E/7P 32/64 bit, Windows Embedded Standard 2009 (XPe SP3) 32bit, Microsoft Windows Embedded Compact 7 Pro, Microsoft Windows 8.1 Industry Pro
OPERATING TEMPERATURE	0°- 50°C
	0°- 45°C with HDD 24x7
	5°- 45°C with standard HDD
APPROVALS	CE, cULus LISTED (pending)

PB5000

Highly expandable Box PC based on Intel® Ivy Bridge platform

The PB5000 Box PC is based on Intel® Ivy Bridge platform and 35 or 45 Watt third generation Core™ i3, Core™ i5, Core™ i7 dual and quad core and Celeron dual core processors on socket.
The all-in-one motherboard feature two USB 3.0, two USB 2.0, three 10/100/1000 Mbps Ethernet with "Jumbo Frame" and "Wake on Lan" support. It also features one connector for mSATA SSD, a serial RS232 interface, one external access CFast SATA II slot, an additional standard DVI-I (DVI-D + VGA) video output.
HT5000 can also be configured in RAID 0, 1 (optional) and it features connectors for two 2,5" SATA III HDD or SSD (also with extractable drawers).
The RAM can be configured up to 16 GB RAM with two DD3 SODIMM modules.

ASEM STANDARDS

Highlights

- → Box PC with 0-50 °C operating temperature
- → Intel® Ivy Bridge platform with third generation Core™ i3, Core™ i5, Core™ i7 dual and quad core and Celeron dual core up to 45 W processors on socket
- → RAID 0, 1 configurations, also with extractable drawers (optional)
- → 110/230 VAC or 24 VDC power supply
- → 1 PCI or 1 PCIe x4 (S1 version) or 3 PCI or 2 PCI and 1 PCIe x4 (S3 version) expansion slots
- → Wall mount or DIN rail installation
- → CE, cULus LISTED (508) certifications

Gallery

Technical data

	PB5000
PROCESSOR (on socket)	Intel® Celeron™ 1020E, 2.20GHz, 2 cores / 2 threads, 2MB Smart cache, 35W
	Intel® Core™ i3-3120ME, 2.40GHz, 2 cores / 4 threads, 3MB Smart cache, 35W
	Intel® Core™ i5-3610ME, 2.70GHz (3.3GHz Turbo), 2 cores / 4 threads, 3MB Smart cache, 35W
	Intel® Core™ i7-3610QE, 2.30GHz (3.3GHz Turbo), 4 cores / 8 threads, 6MB Smart cache, 45W
CHIPSET	Intel® HM76 Express Chipset
VIDEO CONTROLLER	Intel® HD Graphics, 650MHz integrated in Celeron™ microprocessor
	Intel® HD Graphics 4000, 650MHz integrated in Core™ microprocessor
SYSTEM MEMORY - RAM	2GB or 4GB or 8GB or 16GB (2 x SODIMM DDR3 modules)
RAID	RAID 0, 1 (optional) with Intel® QM77 Express Chipset
MASS STORAGE	1 bootable CFast on board with external access
	2 x SSD or HDD 2,5" SATA III (also in RAID or with extractable drawers)
	1 x mSATA SSD
LAN	3 x LAN 10/100/1000Mbps (2 x Intel® 82574L, 1 x Intel® 82579LM)
USB	2 x USB 3.0 (Type-A)
	2 x USB 2.0 (Type-A)
SERIAL	1 x RS232 (DB9M)
PS/2	1 x PS/2 for keybaord or mouse
VIDEO OUTPUT	1 x VGA or 1 x DVI-I (DVI-D + VGA)
ADD-ON INTERFACES (optional, max 1)	1 x RS232/422/485 (DB15M)+ 1 x USB 2.0 (Type-A)
	1 x RS232/422/485 (DB15M) optoisolated + 1 x USB 2.0 (Type-A)
	2 x RS232 (DB9M)
	2 x USB 2.0 (Type-A)
	1 x Ethernet 10/100/1000Mpbs, Intel® 82574L
	Unmanaged Ethernet switch 4 x 10/100/1000Mbps
EXPANSION SLOTS S0	2 x MiniPCI dedicated to ASEM fieldbuses, I/O and NVRAM boards
S1	2 x MiniPCI dedicated to ASEM fieldbuses, I/O and NVRAM boards
	1 x PCI or 1 x PCIe x4 (5 Gb/s)
S3	2 x MiniPCI dedicated to ASEM fieldbuses, I/O and NVRAM boards
	3 x PCI or 2 x PCI + 1 x PCIe x4 (5 Gb/s)
POWER SUPPLY UNIT	24VDC isolated with or without UPS (optional) with external battery pack
	110V / 230VAC
O.S. CERTIFIED	Microsoft Windows 7 Pro/Ultimate 32/64bit, Windows XP Pro 32bit, Microsoft Windows Embedded Standard 7E/7P 32/64 bit, Windows Embedded Standard 2009 (XPe SP3) 32bit, Microsoft Windows Embedded Compact 7 Pro, Microsoft Windows 8.1 Industry Pro
OPERATING TEMPERATURE	0°- 50°C
	0°- 45°C with HDD 24x7
	5°- 45°C with standard HDD
APPROVALS	CE, cULus LISTED (pending)

4. **Arm Mounting PCs**

The Arm Mounting PCs are compact, fanless, ergonomic and easy to install systems with a stylish design. Based on Intel® Haswell ULT platform they are available with 15,6”, 18,5”, 21,5” TFT Led Backlight LCDs in a full IP65 aluminum chassis.

VK3200 [new]

Arm Mounting PC based on Intel® Haswell ULT platform

The VK3200 arm mounting PCs are based on the X86 Intel® Haswell ULT platform with Ultra Low Voltage fourth generation Intel® Core™ processors. They are made of a full IP65 cast aluminum chassis, powder coated with anti-scratch treatment, combining robustness with ergonomics and aesthetics. VK3200 systems have two USB 3.0 ports with rear external access, one optional USB port and one optional RFID interface on the front with the possibility to install emergency button, key switches, buttons and light indicators.
Inside the systems the “all in one” motherboard provides two additional USB 2.0 ports, three 10/100/1000 Mbps Ethernet ports, one serial RS232/422/485 interface (optionally opto-isolated), one SATA III mSATA SSD slot and RAM configuration up to 8 GB with a DDR3 SODIMM module.
The VK3200 family is available with 15,6”, 18,5” and 21,5” in Wide 16:9 aspect ratio 16 million color TFT LED Backlight LCDs and Aluminum True Flat with 5 wires resistive touchscreen or Aluminum True Flat with projected capacitive Multitouch-screen front panels.

ASEM STANDARDS

Highlights

- → Arm mounting fanless PC with 0-50 °C operating temperature
- → Full IP65 chassis
- → Intel® Haswell ULT platform
- → 5 wires resistive touchscreen (VK-TF) or P-CAP Multitouch-screen (VK-TFM)
- → Easy installation and cabling
- → Configuration with emergency button, switches, buttons, lights and RFID and USB interfaces
- → CE, cULus LISTED (508) certifications

Gallery




Technical data

	VK3200-TF	VK3200-TFM
LED blacklight TFT LCD	15.6" - 1366x768 18.5” - 1366x768 21.5"- 1920x1080	15.6" - 1366x768 18.5” - 1366x768 21.5"- 1920x1080
TOUCH-SCREEN	Resistive 5 wires	P-CAP Multitouch, 4 fingers
FRONT PANEL	True Flat Aluminum	
PROTECTION GRADE	Full IP65	
PROCESSOR (soldered)	Intel® Celeron 2980U 1,6Ghz, 2 cores - 2 threads - 2MB smart cache - 15W Intel® Core™ i3-4010U 1,7Ghz, 2 cores - 4 threads - 3MB smart cache - 15W Intel® Core™ i5-4300U 1,9Ghz (2,9GHz Turbo), 2 cores - 4 threads - 3MB smart cache - 15W Intel® Core™ i7-4650U 1,7Ghz (3,3GHz Turbo), 2 cores - 4 threads - 4MB smart cache - 15W	
VIDEO CONTROLLER	Intel® HD Graphics integrated in microprocessor Celeron 2980U, 200/1000MHz Clock Intel® HD Graphics 4400 integrated in microprocessor i3-4010U, 200/1000MHz Clock Intel® HD Graphics 4400 integrated in microprocessor i5-4300U, 200/1100MHz Clock Intel® HD Graphics 5000 integrated in microprocessor i7-4650U, 200/1100MHz Clock with LVDS 8bit/color digital interface	
SYSTEM MEMORY - RAM	2GB or 4GB or 8GB (1 x SODIMM DDR3 module)	
MASS STORAGE	1 bootable CFast SATA III on board, internal access	
	1 x SSD mSATA SATA III	
LAN	3 x LAN 10/100/1000Mbps (2 x Intel® I210-AT, 1 x Intel® I218-LM)	
USB	2 x USB 3.0 (Type-A, external rear, protected, IP65)	
	2 x USB 2.0 (Type-A, internal)	
SERIAL (optional)	1 x RS232/422/485 (DB15M)	
	1 x RS232/422/485 (DB15M) optoisolated	
CASE Installation	For pole or suspension arm mounting	
Material	Alluminum alloy EN AB46400	
Color	Anti-scratchable painted - RAL 9006	
BUTTONS & LIGHTS (optional)	Configuration with emergency stop button, RFID input, 1 x USB 2.0 port, buttons, lights, keys and switches	
POWER SUPPLY UNIT	24VDC isolated	
O.S. CERTIFIED	Microsoft Windows 7 Pro/Ultimate 32/64bit, Microsoft Windows Embedded Standard 7E/7P 32/64 bit, Microsoft Windows 8.1 Industry Pro	Microsoft Windows 7 Pro/Ultimate 32/64bit, Microsoft Windows Embedded Standard 7P 32/64 bit, Microsoft Windows 8.1 Industry Pro
OPERATING TEMPERATURE	0°- 50°C	
APPROVALS	CE, cULus LISTED (508)	

5. **RACK PCs**

19” 4U rack solutions with a wide range of configurations, motherboards, expansion slots and Intel® Core™ i3, i5, i7, dual and quad core processors.

PR4045 / PR4145

19” Rack PC with second generation Intel® Core™ processors

19” 4U Rack PR4x45 systems are based on second generation Intel® Core™ i3, i5 and i7 dual and quad core up to 3,4 GHz processors.
The motherboard features four PCI slots, two PCIe x16 slots, one PCIe x8 slots, ten USB 2.0 ports, two 10/100/1000 Mbps Ethernet, two serial RS232 ports, DVI-I and DisplayPort outputs, one parallel port, audio I/O and up to 16 GB system memory.
In the systems is possible to install two 3,5” SATA III HDD also with RAID 0, 1 functionality.
The only difference between PR4045 and PR4145 systems is the chassis depth.

Highlights

- → Second generation Intel® Core™i3, i5 and i7 dual and quad core up to 3,4 GHz processors on socket
- → Motherboard designed for heavy-duty 24/7 industrial application
- → RAID 0, 1 on-board controller
- → Multi HDD with extractable drawers
- → PCI expansion slot: 4 PCI, 2 PCIe x16, 1 PCIe x8
- → Compact cabinet (PR414X versions)

PR4046 / PR4146

19" Rack PC with third generation Intel® Core™ processors

19" 4U Rack PR4x46 systems are based on Intel® Pentium dual core and third generation Core™ i3, i5 and i7 dual and quad core up to 3,4 GHz processors.
The motherboard features three PCI slots, two PCIe x16 slots, one PCIe x4 slots, four USB 3.0 ports, eight USB 2.0 ports, two 10/100/1000 Mbps Ethernet, one RS232/422/485 port, DVI-I and HDMI video outputs, audio I/O and up to 32 GB system memory.
In the systems is possible to install two 3,5" SATA III HDD also with RAID 0, 1 functionality.
The only difference between PR4046 and PR4146 systems is the chassis depth.

Highlights

- → Intel® Pentium dual core and third generation Intel® Core™ i3, i5 and i7 dual and quad core up to 3,4 GHz processors on socket
- → On-board RAID 0,1 controller
- → Multi HDD with extractable drawers
- → Expansion PCI slot: 3 PCI, 2 PCIe x16, 2 PCIe x4
- → Compact cabinet (PR414X version)

PR4047 / PR4147

19" Rack PC with fourth generation Intel® Core™ processors

19" 4U Rack PR4x47 systems are based on Intel® Pentium dual core and fourth generation Core™ i3, i5 and i7 dual and quad core up to 3,4 GHz processors.
The motherboard features three PCI slots, two PCIe x16 slots, one PCIe x8 slot, four USB 3.0 ports, eight USB 2.0 ports, two 10/100/1000 Mbps Ethernet, two RS232 ports, DVI-I and Display Port video outputs, audio I/O and up to 32 GB system memory.
In the systems is possible to install two 3,5" SATA III HDD also with RAID 0, 1 functionality.
The only difference between PR4047 and PR4147 systems is the chassis depth.

Highlights

- → Intel® Pentium dual core and fourth generation Intel® Core™ i3, i5 and i7 dual and quad core up to 3,4 GHz processors on socket
- → Motherboard designed for heavy-duty 24/7 industrial applications
- → On-board RAID 0, 1 controller
- → Multi HDD with extractable drawers
- → PCI expansion slot: 4 PCI, 2 PCIe x16, 1 PCIe x8
- → Compact Cabinet (PR414X versions)

Technical Data

	PR4045	PR4145	PR4046	PR4146	PR4047	PR4147
19" RACK CABINET	long	short	long	short	long	short
MOTHERBOARD	ATX format, DS3076-S (Fujitsu)		ATX format, CL630-CRM (DFI)		ATX format, D3236-S (Fujitsu)	
PROCESSOR	Intel® Core™ i3-2100, 3.10GHz, 2 cores / 4 threads, 3MB L2, 32nm technology		Intel® Pentium™ G2030, 3.00GHz, 2 cores / 2 threads, 3MB L2, 22nm technology		Intel® Pentium™ G3220, 3.00GHz, 2 cores / 2 threads, 3MB L2, 22nm technology	
	Intel® Core™ i5-2320, 3.0GHz, 4 cores / 4 threads, 6MB L2, 32nm technology		Intel® Core™ i3-3240, 3.40GHz, 2 cores / 4 threads, 3MB L2, 22nm technology		Intel® Core™ i3-4150, 3,5 GHz, 2 cores / 4 threads, 3MB L2, 22nm technology	
	Intel® Core™ i7-2600, 3.4GHz, 4 cores / 8 threads, 8MB L2, 32nm technology		Intel® Core™ i5-3470S, 2.9GHz, 4 cores / 4 threads, 6MB L2, 22nm technology		Intel® Core™ i5-4460, 3,2 GHz, 4 cores / 4 threads, 6MB L2, 22nm technology	
			Intel® Core™ i7-3770S, 3.1GHz, 4 cores / 8 threads, 8MB L2, 22nm technology		Intel® Core™ i7-4790, 3,6 GHz, 4 cores / 8 threads, 8MB L2, 22nm technology	
CHIPSET	Intel® Q67-PCH Express Chipset		Intel® C216 Express Chipset		Intel® Q87 Chipset	
O.S. CERTIFIED	Microsoft Windows 7 Pro/Ultimate 32/64bit, Microsoft Windows XP Professional 32/64 bit		Microsoft Windows 8 32/64bit, Microsoft Windows 7 Pro/Ultimate 32/64bit, Microsoft Windows XP Professional 32/64 bit		Microsoft Windows 8 32/64bit, Microsoft Windows 7 Pro/Ultimate 32/64bit	
VIDEO CONTROLLER	Intel® HD Graphics DX10.1 integrated into processor		Intel® HD Graphics, 650MHz integrated into Pentium G2030		Intel® HD Graphics, 650MHz integrated into Pentium	
			Intel® HD Graphics 2500, 650MHz integrated into Core™ i3 and Core™ i5		Intel® HD Graphics 4400, 350MHz integrated into Core™ i3	
			Intel® HD Graphics 4000, 650MHz integrated into Core™ i7		Intel® HD Graphics 4600, 650MHz integrated into Core™ i5 and Core™ i7	
			DX11 and OpenGL 3.0 support		DX11 and OpenGL 3.0 support	
SYSTEM MEMORY - RAM	2GB / 4GB / 8GB / 16GB		4GB / 8GB / 16GB / 32GB		4GB / 8GB / 16GB / 32GB	
EXPANSION SLOTS	4 x PCI full size (32bit, 33MHz, Rev.2.3)		3 x PCI full size (32bit, 33MHz, Rev.2.3)		4 x PCI full size (32bit, 33MHz, Rev.2.3)	
	1 x PCIe x16 (16 Lanes, Gen2)		2 x PCIe x16 (1 x16 se Gen3, 2 x8 se Gen2)		2 x PCIe x16 (16 lanes, Gen2, 4 lanes, Gen2)	
	1 x PCIe x16 (4 Lanes, Gen2)		2 x PCIe x4 (1 x4 Gen2, 1 x1/x4 Gen2)		1 x PCIe x8 (1 lane, Gen2)	
	1 x PCIe x8 (1 Lane, Gen2)		1 x MiniPCIe (PCI 2.0)			
SPECIAL FEATURES	24/7 operation		2 x HDD with extractable drawer	1 x HDD with extractable drawer	24/7 operation	
	2 x HDD with extractable drawer	1 x HDD with extractable drawer			2 x HDD with extractable drawer	1 x HDD with extractable drawer
MASS STORAGE	2 x HDD 3,5" SATA III		2 x HDD 3,5" SATA III		2 x HDD 3,5" SATA III / 1 x mSATA SSD / SATA III	
RAID	RAID 0, 1		RAID 0, 1		RAID 0, 1	
OPTICAL DRIVE	1 x DVD-RW		1 x DVD-RW		1 x DVD-RW	
LAN	2 x LAN 10/100/1000Mbps (1 x Intel® 82574L, 1 x Intel® 82579LM)		2 x LAN 10/100/1000Mbps (1 x Intel® 82574L, 1 x Intel® 82579LM)		2 x LAN 10/100/1000Mbps (1 x Intel® I210AT, 1 x Intel® I217LM)	
USB	8 x USB 2.0 (Type-A, rear)		4 x USB 3.0 (Type-A, rear)		2 x USB 3.0 (Type-A, rear)	
	2 x USB 2.0 (Type-A, front)		2 x USB 2.0 (Type-A, rear)		6 x USB 2.0 (Type-A, rear)	
			2 x USB 2.0 (Type-A, front)		2 x USB 2.0 (Type-A, front)	
SERIAL	1 x RS232 (DB9M)		1 x RS232/422/485 (DB9M)		1 x RS232 (DB9M)	
KEYBOARD & MOUSE	2 x PS/2 (K/M)		1 x PS/2 (K/M)		2 x PS/2 (K/M)	
VIDEO OUTPUT	1 x DisplayPort		1 x DVI-I		1 x DVI-I	
	1 x DVI-I		1 x DVI-D		2 x DisplayPort	
			1 x HDMI			
AUDIO	Conexant CX20642, 5.1-channel, High Definition Audio Codec		Realtek ALC886, 5.1-channel, High Definition Audio Codec		Realtek ALC886, 5.1-channel, High Definition Audio Codec	
	Audio Mic In, Line in, Line out		Audio Mic In, Line in, Line out		Audio Mic In, Line in, Line out	
ADDITIONAL INTERFACES	1 x RS232 (DB9M)		2 x RS232 (DB9M)		1 x RS232 (DB9M)	
	1 x parallel EPP, ECP bidirectional (DB25)		4 x USB 2.0 internal on connector		1 x USB 2.0 for internal dongle	
	2 x USB 2.0 internal on connector				1 x LPT EPP, ECP bidirectional	
	1 x USB 2.0 for flashdrive					
	1 x USB 2.0 for internal dongle					
POWER SUPPLY UNIT	230VAC 400W	230VAC 400W	230VAC 400/650W	230VAC 400/650W	230VAC 400/650W	230VAC 400/650W
	230VAC 2 x 500W		230VAC 2 x 500W		230VAC 2 x 500W	
DIMENSIONS w-h-d	48.3 x 17.8 x 50.3 cm	48.3 x 17.8 x 46.5 cm	48.3 x 17.8 x 50.3 cm	48.3 x 17.8 x 46.5 cm	48.3 x 17.8 x 50.3 cm	48.3 x 17.8 x 46.5 cm
OPERATING TEMPERATURE	0°- 40°C with 24x7 HDD 5°- 40°C with standard HDD		0°- 40°C with 24x7 HDD 5°- 40°C with standard HDD		0°- 40°C with 24x7 HDD 5°- 40°C with standard HDD	
APPROVALS	CE		CE		CE	

6. Industrial Monitors

Panel Industrial Monitors are available with 8,4" to 21,5" LCDs and four front panels variants. Arm Mounting Monitors are compact, fanless, ergonomic and easy to install solutions with a stylish design, and are available with 15,6", 18,5" and 21,5" TFT LCDs in a full IP65 Aluminum chassis. Industrial Monitor families are available with up to 100 m. remotation for digital video and USB 2.0 signals, with a simple and economic CAT5E SFTP cable.

MH / MH-R
Panel Mounting Industrial Monitor

MH industrial monitors are available with 8,4”, 10,4”, 12,1” and 15” in 4:3 aspect ratio, 17” and 19” in 5:4 aspect ratio, 15,6”, 18,5” and 21,5” in 16:9 aspect ratio 16 million color TFT LED Backlight LCDs with aluminium (MH) or aluminium True Flat (MH-TF) front panel with 5 wires resistive touchscreen and USB port.

Wide LCDs versions are also available with aluminum True Flat and projected capacitive Multitouch-screen (MH-TFM) front panels.
Monitors with 12,1”, 15”, 17” and 19” LCDs are also available with Stainless Steel True Flat front panels (MH-TFX).

MH monitors have VGA and DVI-D input, 110/230 VAC or 24 VDC input voltage with or without galvanic isolation and two rear access USB ports.
MH-R version features a built-in remotation of digital video and USB 2.0 signals up to 100 meters with a simple and economic CAT5E SFTP cable.

ASEM STANDARDS

Highlights

- → 8,4”, 10,4”, 12,1” and 15” in 4:3 aspect ratio, 17” and 19” in 5:4 aspect ratio, 15,6”, 18,5” and 21,5” in 16:9 aspect ratio LCDs
- → Built-in remotation of digital video and USB 2.0 signals up to 100 metres (MH-R)
- → 110/230 VAC or 24 VDC power input with or without galvanic isolation
- → IP66 or IP66K frot panel protection degree
- → CE, cULus LISTED (508) certification

Gallery

Remotation

MH-R industrial monitors integrate DVI-D and USB 2.0 signal remotation that allow PC connection up 100 meters with a CAT5E SFTP cable

Technical data

	MH	MH-TF	MH-TFX	MH-TFM	MH-R	MH-R-TF	MH-R-TFX	MH-R-TFM
LED blacklight TFT LCD	8.4" - 800x600 10.4" - 800x600 12.1" - 800x600 12.1" - 1024x768 15.0" - 1024x768 15.6" - 1366x768 17" - 1280x1024 18.5" - 1366x768 19" - 1280x1024 21.5"- 1920x1080		12.1" - 800x600 12.1" - 1024x768 15.0" - 1024x768 17" - 1280x1024 19" - 1280x1024	15.6" - 1366x768 18.5" - 1366x768 21.5"- 1920x1080	8.4" - 800x600 10.4" - 800x600 12.1" - 800x600 12.1" - 1024x768 15.0" - 1024x768 15.6" - 1366x768 17" - 1280x1024 18.5" - 1366x768 19" - 1280x1024 21.5"- 1920x1080		12.1" - 800x600 12.1" - 1024x768 15.0" - 1024x768 17" -1280x1024 19" -1280x1024	15.6" - 1366x768 18.5" - 1366x768 21.5"- 1920x1080
TOUCH-SCREEN	Resistive 5 wires GFG (optional)	Resistive 5 wires	Resistive 5 wires	P-CAP Multitouch, 4 fingers	Resistive 5 wires GFG (optional)	Resistive 5 wires	Resistive 5 wires	P-CAP Multitouch, 4 fingers
T/S CONTROLLER	USB / Serial			USB	USB / Serial			USB
FRONT PANEL	Aluminum	True Flat Aluminum	True Flat Stainless Steel	True Flat Aluminum	Aluminum	True Flat Aluminum	True Flat Stainless Steel	True Flat Aluminum
PROTECTION GRADE	IP66 - frontal		IP66K - frontal		IP66 - frontal		IP66K - frontal	
VIDEO INPUT	1 x VGA 1 x DVI-D				DVI-D remotation with CAT5E SFTP cable			
USB	2 x USB 2.0 (Type-A, rear) 1 x USB 2.0 (Type-A, front)		2 x USB 2.0 (Type-A, rear)		2 x USB 2.0 (Type-A, rear) 1 x USB 2.0 (Type-A, front)		2 x USB 2.0 (Type-A, rear)	
REMOTATION					Remotation of DVI-D and USB 2.0 signals up to 100mt with CAT5E SFTP cable			
POWER SUPPLY UNIT	24VDC 24VDC isolated (optional) 230VAC (optional)				24VDC isolated 230VAC (optional)			
OPERATING TEMPERATURE	0° ÷ +50°C for LCD ≤ 15,6" 0° ÷ +45°C for LCD ≥ 17"							
APPROVALS	CE, cULus LISTED (508)							

MK / MK-R [new]

Arm Mounting Industrial Monitor

MK and MK-R arm mounting monitors are made of a full IP65 cast aluminum chassis, powder coated with anti-scratch treatment, combining robustness with ergonomics and aesthetics.
MK and MK-R families are available with 15,6", 18,5" and 21,5" in Wide 16:9 aspect ratio 16 million color TFT LED Backlight LCDs and Aluminum True Flat with 5 wires resistive touchscreen or Aluminum True Flat with projected capacitive Multitouch-screen front panels.
MK monitor family has VGA and DVI-D input, 110/230 VAC or 24 VDC with galvanic isolation power input and two external access USB 2.0 ports.
MK-R family feature a built-in up to 100 meters remotation for digital video and USB 2.0 signal, with a simple and economic CAT5E SFTP cable.

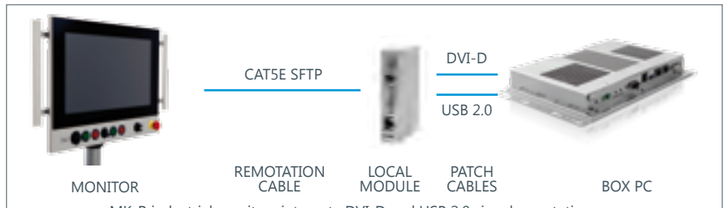
ASEM STANDARDS

Highlights

- → Full IP65 protection degree
- → Easy installation and cabling
- → 5 wires resistive screen (MK-TF) or P-CAP Multitouch-screen (MK-TFM)
- → Built-in digital video and USB 2.0 signals remotation up to 100 m. (MK-R)
- → Configuration for emergency buttons, switches, buttons, lights and RFID interfaces
- → CE, cULus LISTED (508) certification

Gallery

Remotation



MK-R industrial monitors integrate DVI-D and USB 2.0 signal remotation that allow PC connection up 100 meters with a CAT5E SFTP cable

Technical data

	MK-TF	MK-TFM	MKR-TF	MKR-TFM
LED blacklight TFT LCD	15.6" - 1366x768 18.5" - 1366x768 21.5"- 1920x1080			
TOUCH-SCREEN	Resistive 5 wires	P-CAP Multitouch, 4 fingers	Resistive 5 wires	P-CAP Multitouch, 4 fingers
T/S CONTROLLER	USB			
FRONT PANEL	True Flat Aluminum	True Flat Aluminum	True Flat Aluminum	True Flat Aluminum
PROTECTION GRADE	Full IP65			
VIDEO INPUT	1 x VGA 1 x DVI-D		DVI-D remotation with CAT5E SFTP cable	
USB	2 x USB 2.0 (Type-A, rear, protected, IP65)			
CHASSIS Installation	For pole or suspension arm mounting system			
Material	Alluminum alloy EN AB46400			
Color	Anti-scratchable painted - RAL 9006			
BUTTONS & LIGHTS (Optional)	Configuration with emergency stop button, RFID input, 1 x USB 2.0 port, buttons, lights, keys and switches			
REMOTATION			Remotation of DVI-D and USB 2.0 signals up to 100mt with CAT5E SFTP cable	
POWER SUPPLY UNIT	24VDC isolated			
OPERATING TEMPERATURE	0°- 50°C			
APPROVALS	CE, cULus LISTED (508)			

7. **Configurations** & **Options**

Front panels

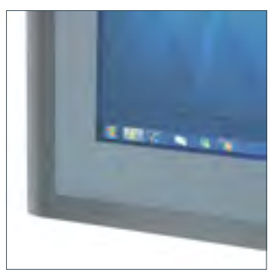
True Flat technology

ASEM realizes the True Flat front panel through a special manufacturing process which takes place in a clean room to avoid environmental contamination such as dust or airborne microbes.

In this process, using an Optically Clear Adhesive (OCA) a thin polyester film is gived on the touchscreen, then the two components are attached on the aluminum front panel.

Stainless Steel True Flat Front Panel

Panel PCs with Stainless Steel True Flat front panels without USB port on the front are particularly used in pharmaceutical and food & beverage industries



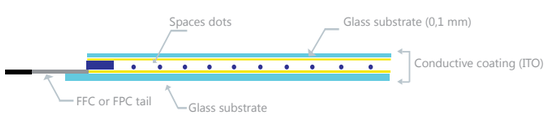
Multitouch technology

All Panel PC and monitor families are available with the new generation of Multitouch front panels in 15.6", 18.5" and 21.5" screen sizes with 16:9 aspect ratio.
Projected Capacitive Touchscreen Technology allows mobile gestures such as zoom, swipe and rotate (even with work gloves), now increasingly adopted in the factory automation.
New multitouch front panels are made of a robust aluminium frame and a tempered glass surface in a completely true-flat design that gives maximum resistance to environmental influences and facilitates cleaning.

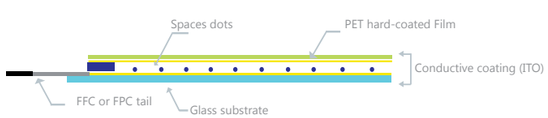
Touchscreen Glass-Film-Glass Technology

The option Glass-Film-Glass (GFG) for 12", 15" and 17" touchscreen is available for most of the ASEM IPCs and monitors. In GFG touchscreen, there is an additional thin glass (0,1 mm) on the touch surface that provides greater resistance to scratches and products cleaning.

GFG technology



Standard technology



Fieldbuses boards

NETcore® X
NETcore®X fieldbus boards are the link between the IPC and the I/O devices on field and enable control and visualization applications to receive data from the field according to the industrial fieldbuses available.

NETcore® X Industrial Ethernet
APCI / MiniAPCI / MB1021 format

NETcore® X Profibus
APCI / MiniAPCI / MB1021 format

NETcore® X CANOpen
APCI / MiniAPCI / MB1021 format

Dual CAN-RAW
PCI / MiniPCI format

Board	Protocols	PCI/APCI	MiniPCI / MiniAPCI
NETcore X PROFIBUS	Profibus DP Master/Slave MPI	✓	✓
NETcore X CANopen	CANopen Master/Slave	✓	✓
NETcore X Industrial Ethernet	EtherCAT Master/Slave	✓	✓
	PROFINET IO Controller/Device	✓	✓
	EtherNet/IP Scanner/Adapter	✓	✓
CAN RAW	CANopen Master in combination with CODESYS (2 x optoisolated channels also with 512KB NVRAM)	✓	✓
NVRAM	512MB static RAM for SoftPLC	-	✓
ETHERNET	EtherCAT Master in combination with CODESYS		✓

NETcore®X and proprietary application
A DLL library is available for developing applications under Win32 or Win CE operating systems. All DLL programming languages such as C, C++ or .NET are available.

NETcore®X with CODESYS
Using NETcore®X fieldbus boards, the integration with CODESYS is automatic and does not require any code to implement the communication stack.

NETcore®X with PremiumHMI
Premium HMI uses NETcore®X boards with SIEMENS MPI and PROFIBUS Slave protocols, using a dedicated communication driver.

8. **Technical support** & **Services**

Technical support and service

Customer oriented philosophy
Providing a meticulous attention and a complete pre and post sales service are the foundational concept of our costumer oriented service. All internal processes aim to ensure an excellent product quality and a higher degree of flexibility, in order to be responsive to the ever-changing market needs. To ensure product and process quality, ASEM has adopted the standard UNI EN ISO 9001:2008 for its quality management system.

Introduced in 1999 and certificated by Intertek Moody Certification, the quality system is up-to-date to improve efficiency and effectiveness of our operations.

Intertek
9809792

Customer care
The customer care service is led by a team of technical specialists that answer with immediacy and clarity to customers' needs, not only by telephone and via the Internet, but also with on-site visits and technical training courses. To optimize the process of support and repair of systems and to minimize response time, ASEM offers some effective services:

''HELP DESK PHONE''
SERVICE can be accessed calling +39/0432/967250, from Monday to Friday from 09:00 to 12:30 and from 14:00 to 17:30 A qualified technician provides initial assistance, or starts the procedure for repairing or replacing the product (Return Material Authorization). Based on needs and the type of support required, the call may be turned to the most suitable ASEM specialist.

''HELP DESK ONLINE''
SERVICE allows access to the ASEM customer care service directly online, through the company website www.asem.it This easy and quick tool allows to request technical assistance for any repair service, with real-time monitoring of the request status. In addition to these services, you can send any request for hardware, firmware and software support to the e-mail address suptec@asem.it.

Technical support
ASEM offers an excellent service of hardware and software consulting and assistance. It also includes a prompt and efficient system service assistance with the creation of ad hoc operating system images, which allows to shrink the memory space needed for the installation of the operating systems (Microsoft Windows® CE, Windows® XP and Windows® XP Embedded, Windows® 7, Windows® 7 Embedded, Linux and OS real time) maintaining only the necessary components for the proper functioning of the industrial PCs and the integration with the main applicative software.

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