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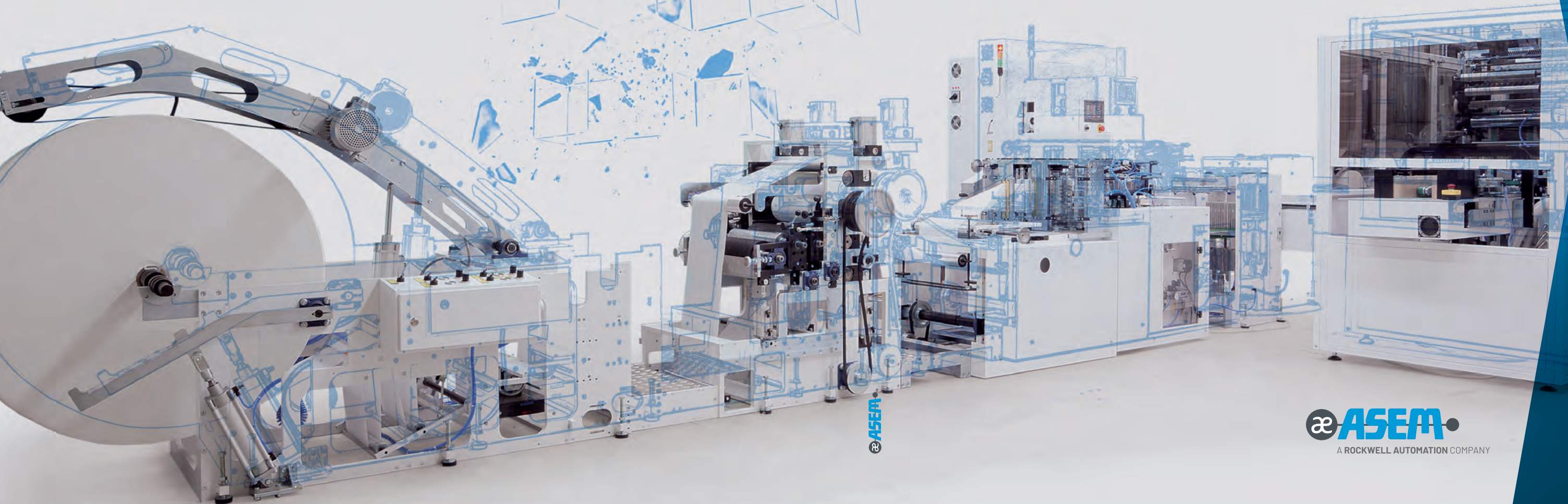
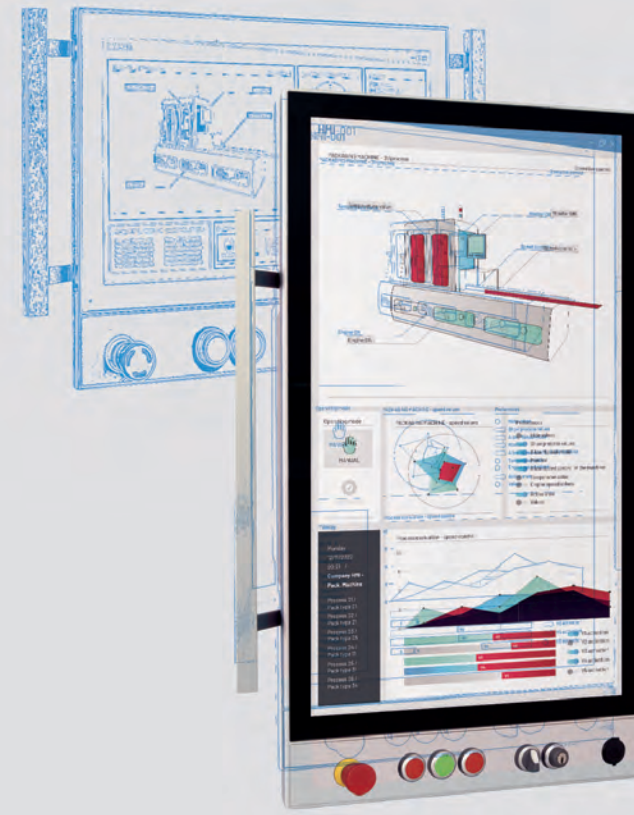
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PC & MONITOR FOR INDUSTRIAL APPLICATIONS / 10\_2022

# PC & MONITOR FOR INDUSTRIAL APPLICATIONS



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## MORE THAN 40 YEARS OF MADE-IN-ITALY INNOVATION

Founded in 1979, ASEM has actively operated through the entire information and digital technology evolution, continuously anticipating market changes and maturing an important wealth of expertise.

ASEM is an IPC market leader in Italy and has been a key player in the Industry 4.0 evolution for some time, with the integration of the UBIQUITY remote assistance software platform on all systems and then with the definition of the new HMI paradigm through the UNIQO Full OPC UA visualisation platform.

**240 +**  
employees

**30%**  
dedicated to R&D



# MILESTONES



1979 / 1982 Specialisation in Electronic Engineering

1983 / 1992 Protagonist in the IT sector

1993 / 2005 **LEADERSHIP IN THE INDUSTRIAL PC MARKET**  
In the mid-'90s, ASEM is the first company in Italy that designs and produces Industrial PCs specifically addressed to the Industrial Automation market.

2006 / 2008 **MANUFACTURER OF AUTOMATION SYSTEMS**  
Thanks to agreements with leading companies, ASEM offers the market the Premium HMI and CODESYS (softPLC) software platforms.

**PREMIUM HMI**

2010 Expansion in Europe

2011 / 2012 **SOFTWARE AND REMOTE ASSISTANCE ERA**  
The innovative UBIQUNITY remote assistance software platform for remote access to supervision systems and automation devices is released.

**UBIQUNITY**

2016 OPC UA in the PremiumHMI5 platform

2019 **THE 4.0 REVOLUTION OF HMI IS REALITY**  
The innovative UNIQO software platform, based on a "Full OPC UA" multi-platform framework, was released.

**UNIQO**

2020 **ASEM A ROCKWELL AUTOMATION COMPANY**

**RA Rockwell Automation**

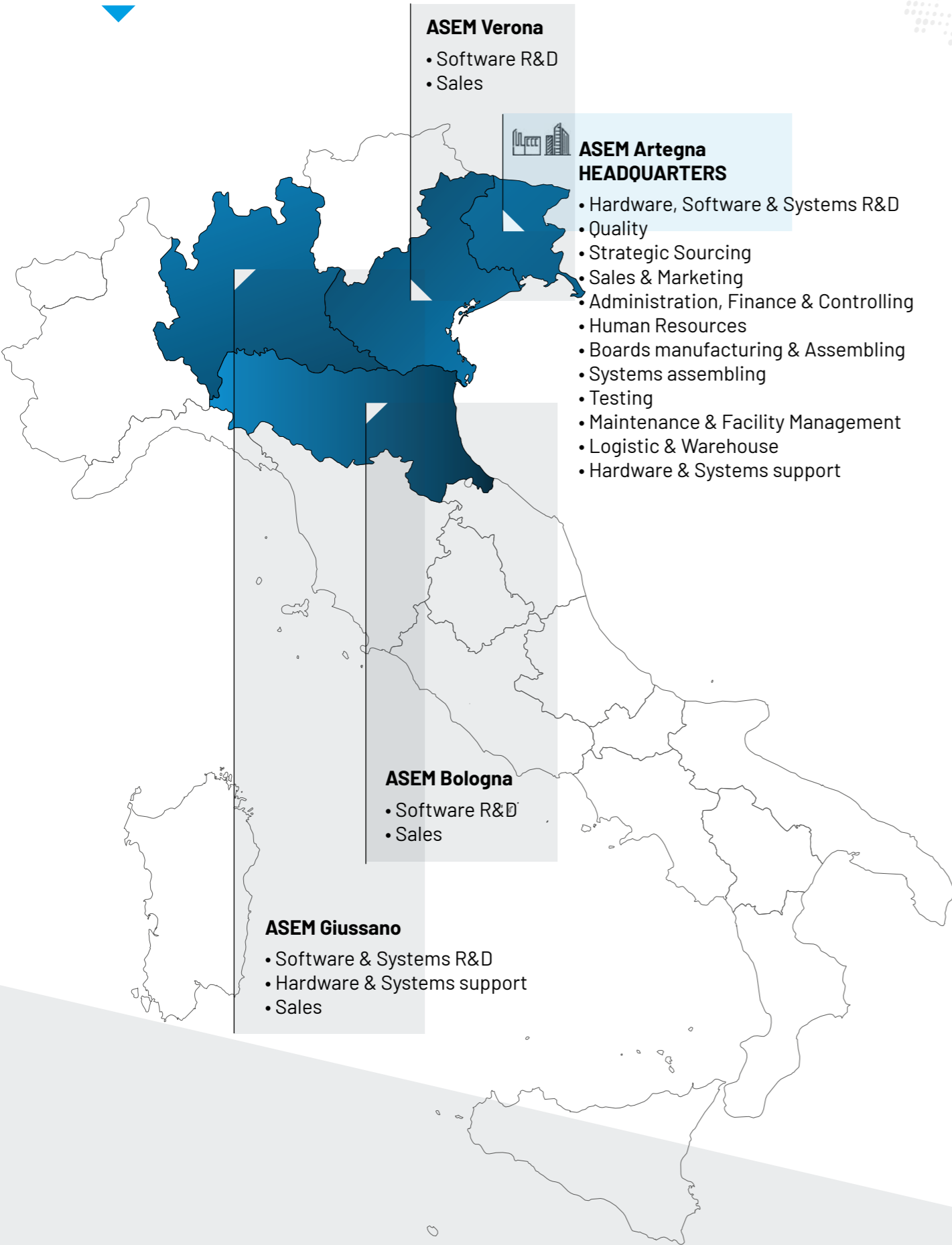


In 2020, ASEM joined the Rockwell Automation Group, the world's largest company dedicated to industrial automation and manufacturing information management, headquartered in Milwaukee (USA) and with a major presence in the EMEA, Asia Pacific and Latin America regions.

This allowed ASEM to grow in a global context and become the centre of excellence of the group for hardware, visualisation and integrated systems with application software.



# LOCATIONS



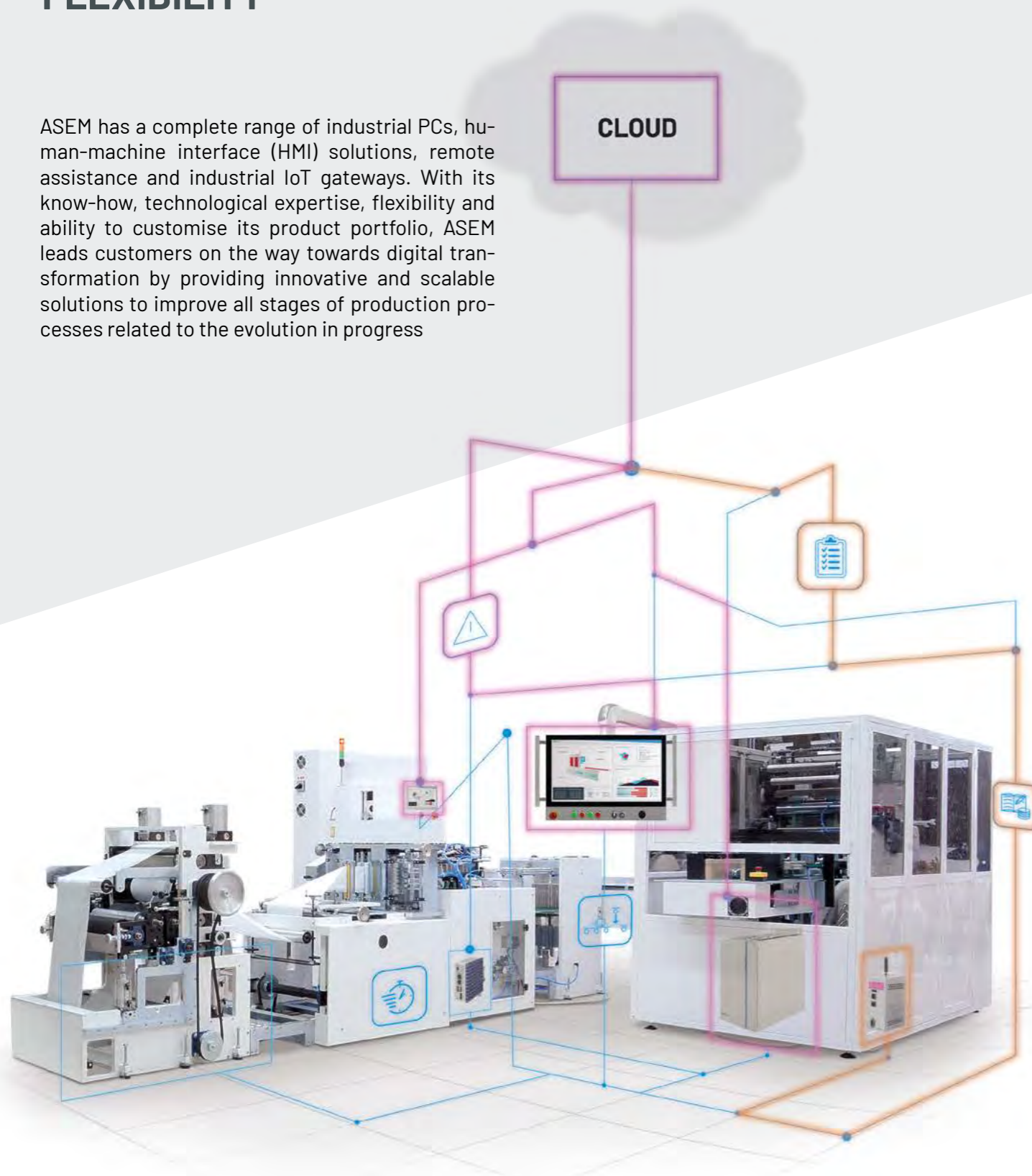
**ASEM Artega  
HEADQUARTERS**

- Hardware, Software & Systems R&D
- Quality
- Strategic Sourcing
- Sales & Marketing
- Administration, Finance & Controlling
- Human Resources
- Boards manufacturing & Assembling
- Systems assembling
- Testing
- Maintenance & Facility Management
- Logistic & Warehouse
- Hardware & Systems support



## MAXIMUM SYSTEM CONFIGURABILITY AND FLEXIBILITY

ASEM has a complete range of industrial PCs, human-machine interface (HMI) solutions, remote assistance and industrial IoT gateways. With its know-how, technological expertise, flexibility and ability to customise its product portfolio, ASEM leads customers on the way towards digital transformation by providing innovative and scalable solutions to improve all stages of production processes related to the evolution in progress



## 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.

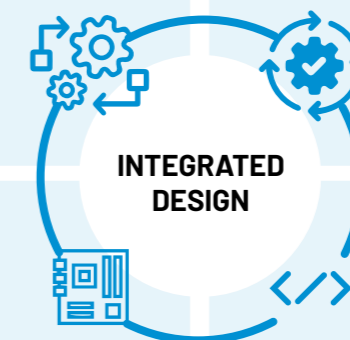
The close collaboration with leading technology trendsetters and the continuous dialogue with customers drive the specifications of hardware, firmware, software and systems engineering for each single product.

### MECHANICAL DESIGN

- 3D modelling and simulation of mechanical assembly and coupling
- Analysis and thermal simulations for dissipation dimensioning
- Integration of mechanical and electronic CAD for more efficient and precise design

### ELECTRONIC DESIGN

- Designing motherboards based on Intel® x86 and ARM NXP platforms
- Creation of PCB masters
- Verification of signal integrity through CAD simulation
- In-house laboratory for EMC compatibility testing



### OPERATING SYSTEMS & FIRMWARE DEVELOPMENT

- Development, testing and customisation of operating systems for IPCs
- Development, testing and customisation of operating systems for ARM platforms
- Development and testing of drivers for x86 platforms
- Development and testing of BIOS for x86 platforms
- Configuration and testing of systems for real-time applications

### SOFTWARE DEVELOPMENT WITH AGILE METHODOLOGY

- DevOps
- Extreme Programming (XP)
- Lean Software Development

# HIGH-QUALITY PRODUCTION

ASEM manufactures and assembles its electronic boards, products and systems in its own industrial facilities in Artegna, covering a total area of over 8,500 square metres.

## BOARD ASSEMBLY

- Acceptance and stock control (Kardex)
- B.O.M. (Component Selection & Management)
- Pick & Place machine programming
- 3 complete SMT lines
- Remelting furnaces (Ersa)
- Screen printers with integrated Post Print AOI (Ersa)
- Selective soldering machine for Through Hole technology
- Visual board inspection
- X-ray inspection
- Functional Testing
- Power supply voltage test of boards with bed of nails
- Functional test of boards for eight hours (3 cycles)
- Active burn-in test (0° - 50° / 24H cycles)

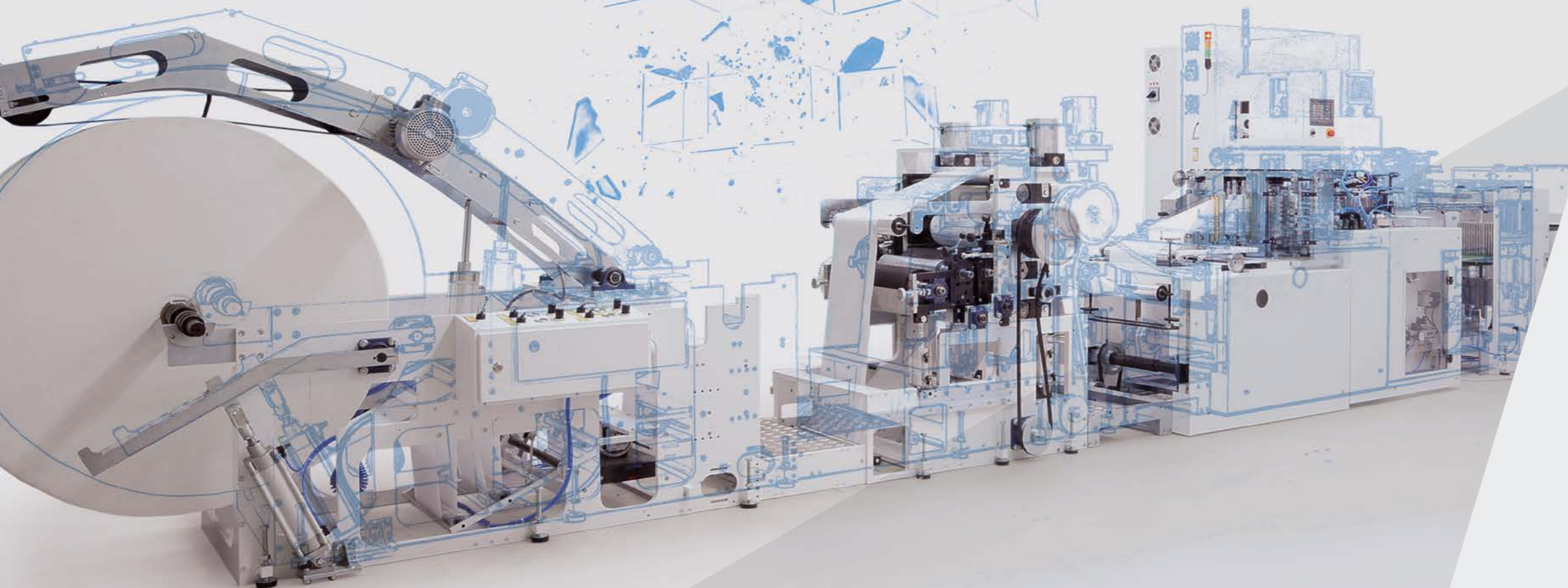
## SYSTEM ASSEMBLY

- B.O.M.
- System assembly (mechanical and electronic)
- Imaging of the operating system on mass memories
- Complete functional test of final system
- Run-in test (8H)
- Final Check & Packaging





## PCS & MONITORS FOR INDUSTRIAL APPLICATIONS



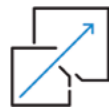


# FLEXIBILITY AND INNOVATION

ASEM offers a complete range of reliable, robust, highly configurable and expandable industrial PCs and monitors, with a panel, arm, wall or DIN-rail mounting arrangement to meet diverse market requirements.

All IPCs integrate UBIQUITY software for remote assistance and can optionally integrate UNIQO software to set up modern HMIs, IIoT gateways and Industry 4.0 applications or CODESYS software that transforms ASEM systems into powerful controllers.

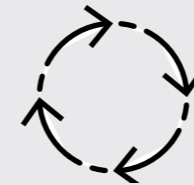
## SCALABLE PERFORMANCE, EXPANDABILITY AND CONFIGURATION



The market demands high-performance systems, more computational power, better graphics, integrated IIoT functionality and reduced power consumption. The ASEM IPCs use Intel® processors, ranging from low-power Atoms for entry-level applications, up to the highest performance eleventh-generation Intel® Core™ processors for higher performance, next-generation graphics and integrated connectivity. The motherboards of the systems allow various levels of expandability in terms of communication interfaces and expansion slots and minimise internal wiring and connections to make the systems more reliable and resistant even to the potential vibrations typical of industrial environments.

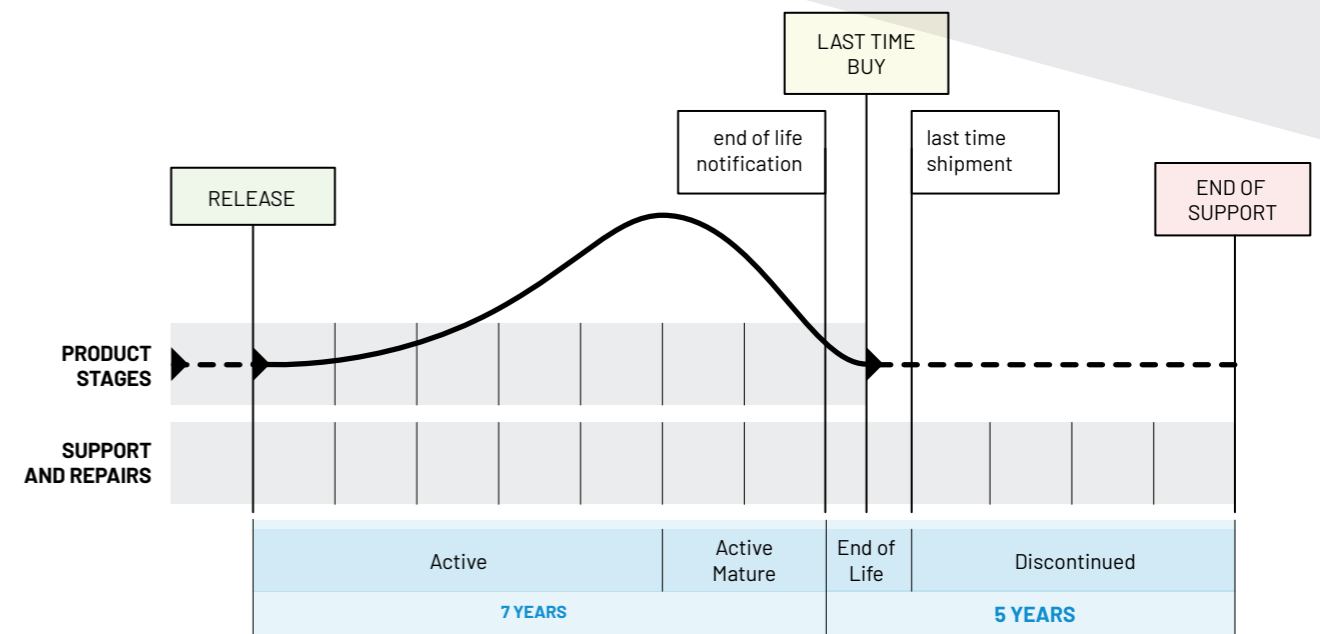
## CONNECTIVITY AND COMMUNICATION

To respond to multiple industrial applications, the need for communication between industrial networks and computer networks, and the most recent needs arising from the Industry 4.0 revolution, with increasingly connected and automated smart factories requiring advanced connections between MES systems, ERPs and production machines, ASEM offers systems equipped with wireless connectivity using combined Wi-Fi 5 and Bluetooth modules and 4G Global modems in addition to traditional connectivity through wired networks. Furthermore, TSN technology is integrated into the systems to ensure ultra-reliable low-latency machine-to-machine communications at Gigabit speeds, significantly contributing to improving the performance and efficiency of real-time processes. Optionally, UNIQO, the Full OPC UA cross-platform software platform, can be integrated into the systems for the developing HMI applications, IIoT and Industry 4.0 solutions capable of communicating with any automation device.



## PRODUCT LIFE CYCLE

The superior design and production processes combined with close collaboration with technological trendsetters allow ASEM to guarantee a life cycle of at least 7 years for systems and repairability, with the availability of spare parts, for at least a further 5 years. End of Life, Last Time Buy and Last Time Shipment procedures are in place 6 months before the end of each product's life cycle.



1 ANNO

- Active** Most current offering within a product category.
- Active Mature** Product is fully supported, but a newer product or family exists. Gain value by migrating.
- End of Life** Discontinued date announced - actively execute migrations and last time buys. Product generally orderable until the discontinued date.
- Discontinued** New product no longer manufactured or procured. Repair/exchange services will be available for a limited period of time.

# DESIGN, ERGONOMICS AND RELIABILITY

The complete control of all stages of the production process, and over 40 years of experience in mechanical design and industrialisation allow ASEM to produce IPCs and industrial monitors with Italian-style design, with attention to every detail, and high reliability and durability. Chassis are generally made of galvanised steel, aluminium or stainless steel and are the result of industrialisation based on perfect integration between electronic boards and mechanical components and accurate thermodynamic and fluid-dynamic analyses.

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## SYSTEM TRACEABILITY

The ASEM systems integrate "ASEM System Identity", a non-volatile memory that contains system identification data in addition to customer data useful for system traceability.

## OPERATING SYSTEMS

Operating systems are continuously updated and ASEM ensures full compatibility of x86 systems with Windows operating systems and Linux distributions. The ASEM Team also supports the implementation of customer-made images and develops customised images to be applied to its systems.



# FRONT PANELS and TOUCHSCREENS



The ASEM IPC panels and monitors are designed to meet all aesthetic, ergonomic and robustness requirements and guarantee a degree of protection up to IP69K, making them the ideal solution for any industrial application, even the most demanding.

LCDs are available with LED-backlit displays in 4:3, 5:4 and wide formats, from 7" to 24", with resolutions including Full HD.

The unique cut-out allows perfect interchangeability between IPC QT/HT panel families and MQ/MH monitors. The QT systems differ from the HT systems in their minimised frame, with a more modern and sophisticated design.



DISPLAY SIZE	Ratio	"HT" Cut-Out		"QT" Cut-Out	
		L	H	L	H
7"W A	15:10	207	159	-	-
7"W B	15:10	197	141	196	140
8.4"	4:3	230	190	-	-
10.1"W	16:10	277	196	256	174
10.4"	4:3	280	225	-	-
12.1"	4:3	315	250	-	-
12.1"W	16:10	313	218	301	203
15"	4:3	370	295	-	-
15.6"W	16:9	410	255	388	238
17"	5:4	435	335	-	-
18.5"W	16:9	480	300	453	275
19"	5:4	470	368	-	-
21.5"W	16:9	559	347	520	312
24"W	16:9	620	382	577	344



### ALUMINUM FRONT PANEL (ALU) AND RESISTIVE TOUCHSCREEN

The front panel is made of anodised aluminium with IP65 protection against dust and water jets. This panel integrates a 5-wire resistive touchscreen offering high shock resistance and the possibility of pressing on the screen not only with the fingers but also with other objects, such as a stylus, achieving a very high degree of precision. Monitors with resistive touchscreens also work in extended temperature ranges, even in very humid environments. The HT systems have a USB interface on the front.



### TRUE FLAT ALUMINIUM FRONT PANELS (TF) AND RESISTIVE TOUCHSCREEN

True Flat technology guarantees a perfectly flat surface, without recesses, completely insulated from external agents and allows for easier cleaning of the panel. This technology also allows the perfect integration of the touchscreen and the frame, making the front panel more pleasing to the touch and in appearance. ASEM manufactures these panels with a special production process inside a cleanroom to avoid environmental contamination such as dust or microbes in the air. The panels are completely dust-tight and protected against water jets with an IP65 rating and incorporate the 5-wire resistive touchscreen.



### TRUE FLAT ALUMINIUM FRONT PANELS (TFM) WITH GLASS PROJECTED CAPACITIVE MULTITOUCH SCREEN.

Wide-format front panel with a sturdy aluminium frame, tempered glass surface with True Flat technology for maximum resistance to environmental conditions and easy cleaning. This front panel integrates the rear-projected capacitive touchscreen.

The glass surface layer gives the screen greater image brilliance and sharpness, greater scratch resistance and less wear and tear. The user experience is more pleasant than with resistive touchscreens due to the high touch sensitivity. The capacitive touchscreen allows interaction with various elements on the screen through gestures typical of the mobile world, such as zooming, swiping and rotating (even with gloves) with high touch sensitivity and a high level of precision.

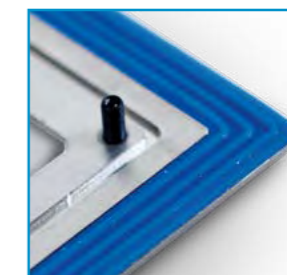
The capacitive touchscreen supports up to 10 simultaneous touches.

In ASEM systems, the capacitive multitouch touchscreen is integrated into the TFM monitors.



### STAINLESS STEEL FRONT PANELS (TFK) AND RESISTIVE TOUCHSCREEN

Front panel in stainless steel (AISI304L) with IP69K degree of protection, particularly suitable for the pharmaceutical and Food & Beverage markets, where maximum protection against high-pressure washing and dust penetration is required. The TFK front panel features a resistive touchscreen.



It also features hygienic silicone seals and the durable front film is specially designed to withstand numerous washing cycles with high-pressure water.

# APPLICATION SOFTWARE

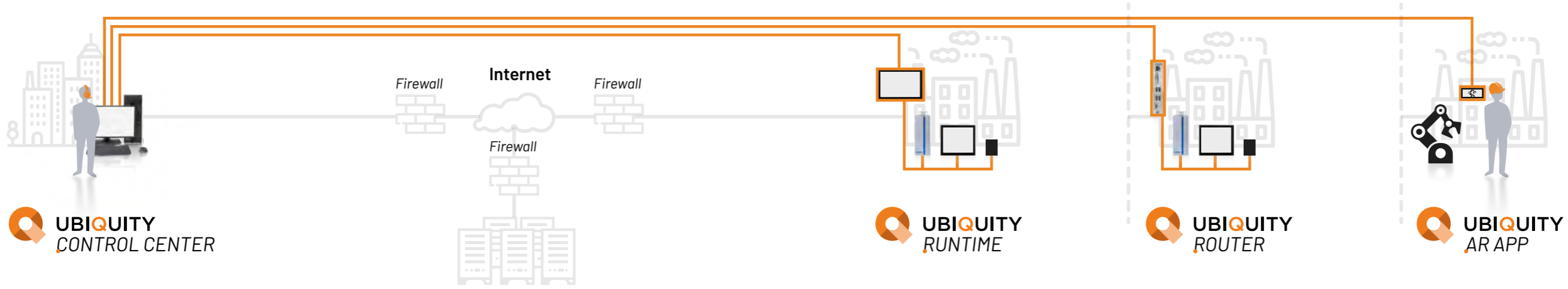
FOR REMOTE ASSISTANCE,  
VISUALISATION, IIOT,  
INDUSTRY 4.0 AND CONTROL





# INTEGRATED REMOTE ASSISTANCE IN ALL IPCS

Comprehensive, secure and certified technology for remote assistance using interactive services and optimised VPN connection for access to the automation subnetwork.



UBIQUNITY Server Infrastructure



Available both as a software solution for WinCE, Win32/64 and Linux systems and as an all-in-one router solution, also with a 4G Global Wi-Fi Modem and 4-port Ethernet switch. Installation does not require IT skills to configure the networks and various firewalls, the use of which is facilitated by a user-friendly interface that allows access to remote systems (PLCs, inverters, drives, etc.) with a simple click using a VPN optimised for industrial communications.

The solution allows the transparent management of remote systems as if they were connected to the customer's corporate network, bypassing the network administrator's intervention on any NATs, proxies, firewalls, public IPs or reserved ports, with the advantage of having all the company's expertise available to solve any arising problems, eliminating distances and the need for on-site travel and drastically slashing after-sales assistance costs. UBIQUNITY is also particularly useful in the installation and commissioning phases of machinery to make changes and updates to application software and for the remote debugging of PLCs or other automation devices.

In recent years, ASEM has expanded the offerings of the UBIQUNITY remote service platform by offering a set of closely related innovative services, called UBIQUNITY X. Cloud-based and seamlessly integrated into the infrastructure, they help automated machine builders and industrial system integrators meet the emerging demands of manufacturing companies committed to transforming traditional factories into digital Smart Factories. The main service of UBIQUNITY X is the possibility of assisting with the aid of augmented reality through the new "UBIQUNITY AR" (Augmented Reality) application, available for iOS and Android devices, which amplifies the experience of both the operators of the automatic machines and the service technicians during remote assistance.

UBIQUNITY has long since been certified as compliant with IEC 62443, which covers the IT security of industrial communications using the Internet as a transport medium, and also includes a two-factor authentication mode using standard apps for iOS and Android



# VISUALISATION, IIOT AND INDUSTRY 4.0

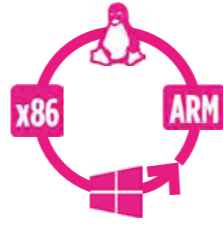
UNIQQO, the universal software platform for all industrial applications with a completely modular and extremely flexible architecture, springs from the analysis of the needs of automated machine manufacturers and industrial system integrators to provide them with innovative, high-performance, yet flexible and easy-to-use programming tools.

- UNIQQO can be used to make:
- Ergonomic and intuitive HMIs with an unprecedented user experience
  - IIoT gateways, Edge Computing applications and general Industry 4.0 solutions

UNIQQO is developed with cross-platform technologies compatible with ARM and x86 architectures, Windows and Linux operating systems and includes support for HTML5 browsers. UNIQQO fully supports the specification of the OPC UA standard and can be defined as a "FULL OPC UA" software platform for making dynamic client/server architectures, in which systems alternate in the role of producers and consumers of the most varied types of information, allowing any application realised with UNIQQO to be able to communicate with any automation device.

- With UNIQQO, the OPC UA can be used for
- data acquisition from the field
  - machine-to-machine (M2M)
  - information exchange interfacing to MES, ERP business management systems
  - interfacing to Cloud infrastructures

A system with UNIQQO can share data and also application functions by allowing an external OPC UA client to actively and dynamically interact with all project functions, such as user configuration, recipes or even the graphic resources of screens, for instance. UNIQQO reduces application development time and ensures fast responses to customers' customisation requests at any point in the machinery life cycle.



### CROSS PLATFORM

UNIQQO fully supports the OPC UA standard specification



## PREMIUM HMI

### SCALABLE, OPEN AND FLEXIBLE OPERATOR INTERFACES

With the Premium HMI software platform, ASEM has been marketing visualisation systems for some time now. The solutions are highly appreciated for the quantity and quality of the functions available and for the transversal nature of the platform allowing any one project to be used indifferently on HMI solutions based on ARM or x86 hardware platforms and with Runtime for WinCE or Win 32/64 operating systems without any need to modify or change settings in the "Premium HMI Studio" development tool. Several releases of this tried and tested platform have been released over the years. Since the 5.1 Premium version, HMI supports OPC UA Server functions for both Windows 32/64 and Windows CE systems. Premium HMI 5.1 is the optimal solution for the realisation of interoperable applications compatible with Industry 4.0 standards. A Premium HMI project can be conveniently configured to acquire field data through PLC communication protocols and the OPC UA client and then share it, through the OPC UA Server, with other systems or machines, to achieve optimal integration in the most heterogeneous scenarios. Premium HMI 5.1 supports the use of Active Directory services to authenticate HMI project users through direct interfacing with Domain Controllers, by simplifying the implementation of CFR 21 Part 11 compliant applications.



With the user-friendly object-oriented design, project debugging tools and the possibility of using a single development environment for any type of application (from the simplest on operator panels to the most complex on IPC panels or the most innovative on intelligent mobile devices), the Premium HMI it is easy to achieve significant time savings in learning, personnel training, maintenance, support and end-user service.

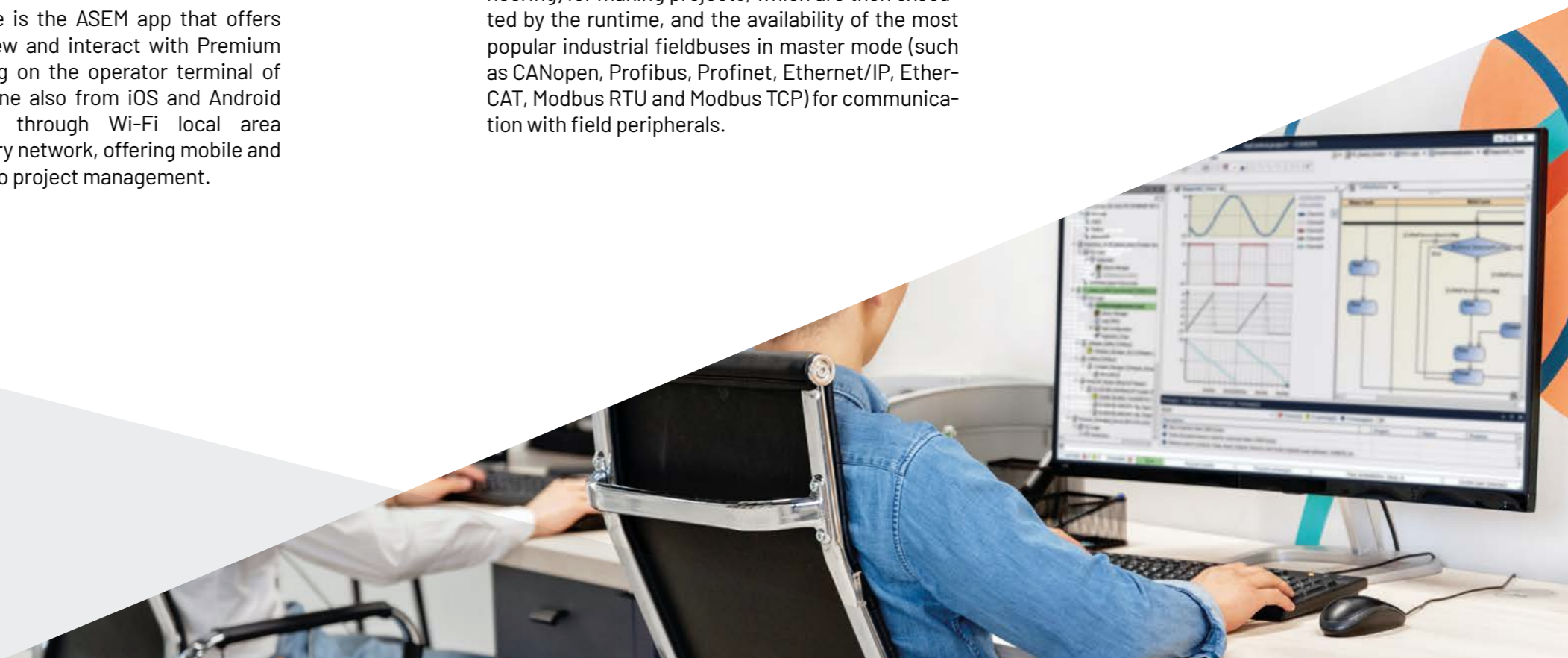
Premium HMI Mobile is the ASEM app that offers the possibility to view and interact with Premium HMI projects running on the operator terminal of the industrial machine also from iOS and Android devices connected through Wi-Fi local area network to the factory network, offering mobile and multitouch support to project management.



### FLEXIBLE CONTROL OF PLC AND MOTION LOGIC IN A SINGLE DEVELOPMENT TOOL

CODESYS is a global standard in industrial automation and the world's number one SoftPLC platform, independent of multinational PLC manufacturers. Integrated into ASEM IPCs, it transforms systems into powerful IEC 61131-3 controllers with a highly efficient implementation of the 3.5 version that guarantees deterministic execution of PLC control logic with Win 32/64 and Linux operating systems and full portability of projects between different operating systems and hardware platforms with no need for intervening on the project code. The CODESYS platform, like all traditional PLCs, provides a development environment (CODESYS Engineering) for making projects, which are then executed by the runtime, and the availability of the most popular industrial fieldbuses in master mode (such as CANopen, Profibus, Profinet, Ethernet/IP, EtherCAT, Modbus RTU and Modbus TCP) for communication with field peripherals.

To ensure data flow traceability and information historisation, the ASEM IPCs optionally include a UPS power supply with integrated electronics and an external battery and 512Kb of MRAM (Magnetoresistive RAM) for storing retentive variables.





# PORTFOLIO OVERVIEW



## PANEL IPCS

P. 34-54

IPC Panels are low-power, high-performance systems, available with a wide choice of TFT LCDs from 7" to 24" and various types of front panels. The wide range of IPCs can meet all performance, configurability and expandability requirements in the industrial environment.

QT2150 & HT2150	<b>p.34</b>	QT2200 & HT2200	<b>p.36</b>	QT2250 & HT2250	<b>p.40</b>
QT3400/3600 & HT3400/3600	<b>p.42</b>	QT3500 & HT3500	<b>p.46</b>	QT5400/5600 & HT5400/5600	<b>p.50</b>



## BOX IPCS

P. 58-78

IPC boxes are systems for wall-mounted and book-mounted installations, which meet all performance and installation space requirements. They offer extensive expandability with a large number of accessories and interface expansion cards.

PB2150 & BM2150	<b>p.58</b>	PB2200 & BM2200	<b>p.60</b>	PB2250 & BM2250	<b>p.62</b>
BM3300	<b>p.64</b>	PB3400/3600 & BM3400/3600	<b>p.66</b>	PB3500 & BM3500	<b>p.70</b>
PB5400/5600	<b>p.74</b>				



## ULTRA-COMPACT IPCS

P. 82-86

Ultra-compact IPCs are extremely ergonomic, robust systems that are ideal for applications in small spaces where high processing capacity is required.

The product range provides a wide configurability to meet the needs required in many IIoT scenarios.

BM1XY FAMILY	<b>p.82</b>
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## PRODUCT RATINGS

All products were evaluated according to three parameters:

PERFORMANCE	EXPANDABILITY	CONFIGURABILITY
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## ARM/VESA MOUNTING IPCS

P. 90

The arm mounting IPCs are fanless, compact, elegant systems that offer excellent performance and can be used in various industrial applications due to their high configurability. They are available with a customisable control area and various accessories that improve ergonomics, providing a wide range of customisation possibilities.

VK3500	<b>p.90</b>
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## RACK MOUNTING IPCS

P. 94

The rack mounting IPC 19" 4U devices offer high computing capacity and high reliability using heavy-duty motherboards for 24/7 industrial applications. They are available in long and short versions.

PR4XXX	<b>p.94</b>
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## INDUSTRIAL MONITORS

P. 100-106

Industrial monitors have the same robust, reliable and aesthetic characteristics as IPC panels. They are available with different installation modes, with the possibility for some systems to integrate a configurable control area and various accessories. All monitors integrate RVL technology for remote DVI-D and USB 2.0 signals up to 100m.

MQ200 & MH200	<b>p.100</b>	MK200	<b>p.102</b>	MX200	<b>p.104</b>
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# PANEL IPCS

HIGH PERFORMANCES  
LOW CONSUMPTION  
EXTENSIVE CONFIGURABILITY  
AND EXPANDABILITY

010125552  
2513174  
2413  
1531181  
12481212  
1843748  
81982  
345186451



010125552  
2513174  
2413  
1531181  
12481212  
1843748  
81982  
345186451

# QT2150 & HT2150



DOWNLOAD THE PRODUCT SHEET



UBIQUITY INSIDE

UNIQO OPTIONAL

FANLESS

- TFT LCDs in 8.4", 10.4", 12.1", 15" in 4:3 aspect ratio and 7", 10.1", 12.1", 15.6" in Wide aspect ratio
- Aluminum (ALU) and aluminum True Flat (TF) front panels with resistive touchscreen
- Aluminum and glass True Flat panels with multitouch projected capacitive touchscreen (TFM)
- Intel® Celeron® processors of Bay Trail SoC generation
- RAM up to 8GB
- Built-in UPS with external battery pack (optional)
- Available in SL version with reduced depth and S0 version with the possibility to install additional interfaces

## TECHNICAL DATA

	QT2150-ALU	QT2150-TFM	HT2150-ALU	HT2150-TF	HT2150-TFM
<b>LED BACKLIGHT TFT LCD</b>	7" W - 800x480 10.1" W - 1280x800 12.1" W - 1280x800 15.6" W - 1366x768		7" W - 800x480 8.4" - 800x600 10.1" W - 1280x800 10.4" - 800x600 12.1" - 800x600 12.1" - 1024x768 12.1" W - 1280x800 15" - 1024x768 15.6" W - 1366x768		7" W - 800x480 10.1" W - 1280x800 12.1" W - 1280x800 15.6" W - 1366x768
<b>CUT-OUT</b>	QT		HT		
<b>FRONT USB</b>	-		1x USB 2.0 (Type-A), protected		-
<b>TOUCHSCREEN</b>	Resistive 5 wires	P-CAP Multitouch	Resistive 5 wires		P-CAP Multitouch
<b>FRONT PANEL</b>	<b>Material</b>	Aluminum	True Flat Aluminum	Aluminum	True Flat Aluminum
	<b>ASEM Logo</b>	-		Adhesive label	Silk screen printed
<b>PROTECTION GRADE</b>	<b>IP rating</b>	IP65 - frontal			
	<b>NEMA rating</b>	UL Type 1, 4x (indoor only)		UL Type 1, 4x (indoor only) and 12	
<b>CASE</b>	<b>Installation</b>	Panel mounting			
	<b>Material</b>	Zinc-coated skin pass steel			
<b>PROCESSOR (soldered on-board)</b>	Intel® Celeron® J1900 2.00Ghz (2.30GHz Burst) • 4 cores / 4 threads • 2MB L2 cache • 22nm				
<b>CHIPSET</b>	Intel® Bay Trail • Included into processor chip (SoC)				
<b>VIDEO CONTROLLER</b>	Intel® HD Graphics for Intel Atom® processor Z3700 series • 688MHz/854MHz				
<b>SYSTEM MEMORY RAM</b>	1GB or 2GB or 4GB or 8GB SODIMM DDR3L module				
<b>MASS STORAGE</b>	<b>CFast</b>	1x bootable CFast SATA II slot onboard with external access (up to 240GB)			
	<b>SSD mSATA</b>	1x onboard connector for direct insertion of mSATA SSD SATA II (up to 960GB)			
<b>INTERFACES</b>	<b>LAN</b>	2x Gigabit Ethernet (RJ45)			
	<b>USB</b>	1x USB 3.0 (Type-A) • 1x USB 2.0 (Type-A)			
	<b>VIDEO</b>	-			
<b>ADD-ON INTERFACES (optional)</b>	<b>Position A (max 1) only S0 version</b>	1x RS232/422/485 (DB15M) + 1x USB 2.0 (Type-A) 1x RS232/422/485 (DB15M) isolated + 1x USB 2.0 (Type-A) 2x RS232 (DB9M) 1x USB 2.0 (Type-A) 2x USB 2.0 (Type-A) 1x Gigabit Ethernet (RJ45) + 1x USB 2.0 (Type-A) 1x Wi-Fi module (IEEE 802.11 a/b/g/n/ac, 2.4GHz/5GHz • Bluetooth 4.2) and/or 1x Cellular module (worldwide LTE Cat 4, GSM/GPRS, UMTS/HSPA coverage)			
<b>POWER SUPPLY INPUT</b>	24VDC (18-32VDC) isolated				
<b>POWER SUPPLY (optional)</b>	<b>UPS</b>	UPS with external battery pack (Pb • 12V/2.5Ah) (separate mounting)			
	<b>ATX only S0 version</b>	Kit for ATX mode power supply (push button, internal cable and connector for remote control)			
<b>BATTERY</b>	1x CR2032 Internal access				
<b>O.S. CERTIFIED</b>	Microsoft Windows 7 Pro/Ultimate 32/64bit Microsoft Windows Embedded Standard 7E/7P 32/64 bit Microsoft Windows 10 IoT Enterprise 2016/2019 64 bit				
<b>OPERATING TEMPERATURE</b>	0°C ÷ 50°C				
<b>STORAGE TEMPERATURE</b>	-5°C ÷ 60°C				
<b>OPERATING/STORAGE RELATIVE HUMIDITY</b>	20% ÷ 90% RH (non-condensing)				
<b>APPROVALS</b>	CE cULus Listed				

# QT2200 & HT2200



10.1"-24"














































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- TFT LCDs in 10.4", 12.1" and 15" in 4:3 aspect ratio, 17" and 19" in 5:4 aspect ratio and 10.1", 12.1", 15.6", 18.5", 21.5", 24" in Wide aspect ratio
- Aluminum (ALU), aluminum True Flat (TF) and stainless steel True Flat (TFX) front panels with resistive touchscreen
- Aluminum and glass True Flat panels with multitouch projected capacitive touchscreen (TFM)
- Intel® Celeron® processors of Bay Trail SoC generation
- RAM up to 8GB
- Built-in UPS with external battery pack (optional)
- Built-in supercapacitors μUPS, with 512kB MRAM for retentive data management (optional)
- Available in SL version with reduced depth, S0 version with the possibility to install additional interfaces and S1 version with PCI or PCIe expansion slot



UBIQUITY INSIDE

UNIQO OPTIONAL

CODESYS OPTIONAL

FANLESS

## GALLERY



QT2200 & HT2200 - (SL Version)

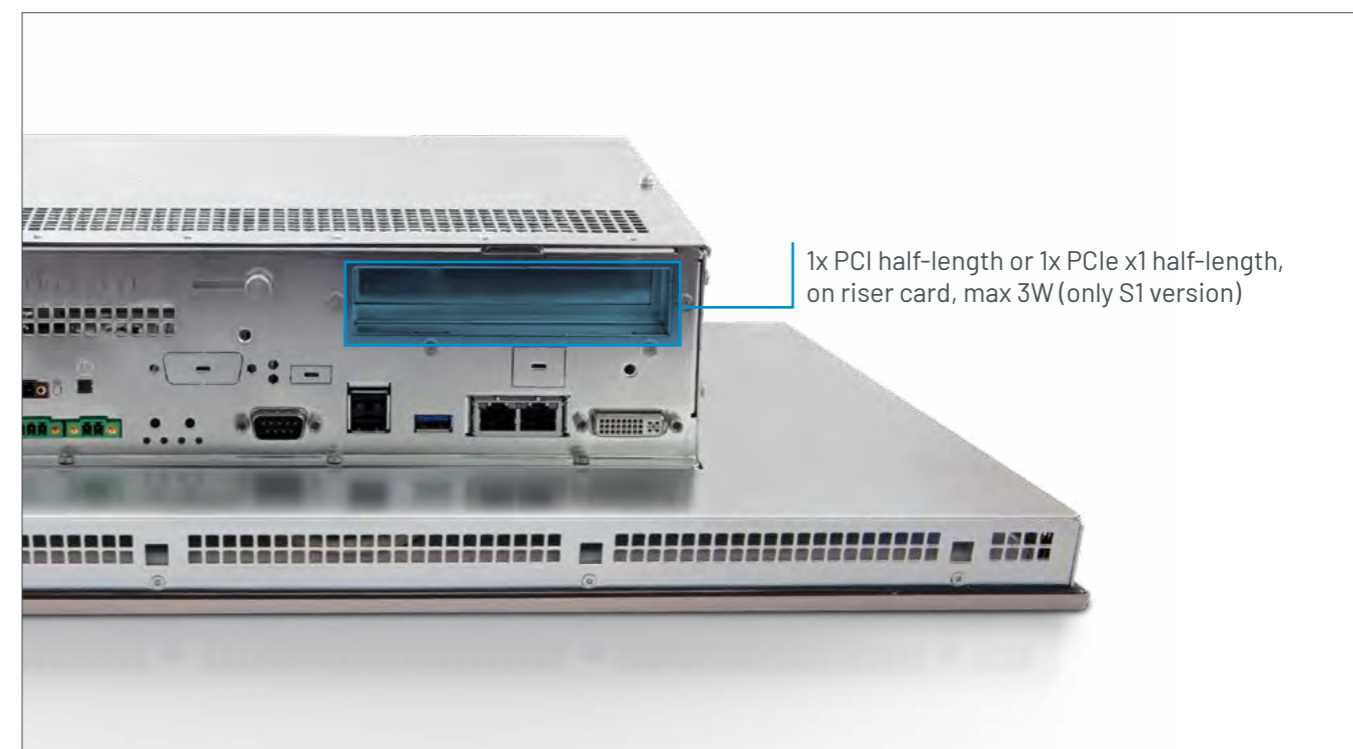


QT2200 & HT2200 - (S0 Version)



QT2200 & HT2200 - (S1 Version)

## DETAIL - EXPANSION SLOTS



TECHNICAL DATA

	QT2200 -ALU	QT2200 -TFM	HT2200 -ALU	HT2200 -TF	HT2200 -TFX	HT2200 -TFM	
<b>LED BACKLIGHT TFT LCD</b>	12.1" W - 1280x800 15.6" W - 1366x768 15.6" W - 1920x1080 18.5" W - 1366x768 18.5" W - 1920x1080 21.5" W - 1920x1080 24"W - 1920x1080		10.1" W - 1280x800 (only SL) 10.4" - 800x600 12.1" - 800x600 12.1" - 1024x768 12.1" W - 1280x800 15.0" - 1024x768 15.6" W - 1366x768 15.6" W - 1920x1080 17" - 1280x1024 18.5" W - 1366x768 18.5" W - 1920x1080 19" - 1280x1024 21.5" W - 1920x1080 24"W - 1920x1080		12.1" - 800x600 12.1" - 1024x768 15.0" - 1024x768 17" - 1280x1024 19" - 1280x1024		10.1" W - 1280x800 (only SL) 12.1" W - 1280x800 15.6" W - 1366x768 15.6" W - 1920x1080 18.5" W - 1366x768 18.5" W - 1920x1080 21.5" W - 1920x1080 24"W - 1920x1080
<b>CUT-OUT</b>	QT		HT				
<b>FRONT USB</b>	-		1x USB 2.0 (Type-A), protected		-		
<b>TOUCHSCREEN</b>	Resistive 5 wires	P-CAP Multitouch	Resistive 5 wires			P-CAP Multitouch	
<b>FRONT PANEL</b>	<b>Material</b>	Aluminum	True Flat Aluminum	Aluminum	True Flat Aluminum	True Flat Stainless Steel	True Flat Aluminum
	<b>ASEM Logo</b>	-		Adhesive label	Silk-screen printed		-
<b>PROTECTION GRADE</b>	<b>IP rating</b>	IP65 - frontal			IP66K - frontal	IP65 - frontal	
	<b>NEMA rating</b>	UL Type 1, 4x (indoor only)		UL Type 1, 4x (indoor only) and 12			
<b>CASE</b>	<b>Installation</b>	Panel mounting					
	<b>Material</b>	Zinc-coated skin pass steel					
<b>PROCESSOR (soldered on-board)</b>	Intel® Celeron® J1900 2.00GHz (2.42GHz Burst) • 64bit • 4 cores / 4 threads • 2MB L2 cache • 22nm						
<b>CHIPSET</b>	Intel® Bay Trail • Included into processor chip (SoC)						
<b>VIDEO CONTROLLER</b>	Intel® HD Graphics for Intel Atom® processor Z3700 series • 688MHz/854MHz						
<b>WATCHDOG</b>	Programmable time period						
<b>TPM</b>	Discrete TPM 2.0 module (optional)						
<b>SYSTEM MEMORY RAM</b>	1GB or 2GB or 4GB or 8GB (1x SODIMM DDR3L module)						
<b>MASS STORAGE (SSD mSATA and SSD/HDD alternative to each other)</b>	<b>CFast</b>	1x bootable CFast SATA II slot onboard with external access (up to 240GB)					
	<b>SSD mSATA</b>	1x onboard connector for direct insertion of SSD mSATA SATA II (up to 960GB)					
	<b>SSD/HDD only S0/S1 versions</b>	1x onboard connectors for SSDs/HDDs 2,5" SATA II with internal installation kit					
<b>INTERFACES</b>	<b>LAN</b>	2x Gigabit Ethernet (RJ45)					
	<b>USB</b>	2x USB 2.0 (Type-A) • 1x USB 3.0 (Type-A)					
	<b>SERIAL</b>	1x RS232 (DB9M)					
	<b>VIDEO</b>	1x DVI-I (Resolution up to 1920x1080 • VGA adapter included)					
<b>ADD-ON INTERFACES (optional) not available for SL version</b>	<b>Position A (max 1)</b>	1x RS232/422/485 (DB15M) + 1x USB 2.0 (Type-A) 1x RS232/422/485 (DB15M) isolated + 1x USB 2.0 (Type-A) 2x RS232 (DB9M) 2x USB 2.0 (Type-A)					
	<b>Position B (max 1)</b>	1x Gigabit Ethernet (RJ45) 1x Wi-Fi module (IEEE 802.11 a/b/g/n/ac, 2.4GHz/5GHz • Bluetooth 4.2) <sup>1</sup> and/or 1x Cellular module (worldwide LTE Cat 4, GSM/GPRS, UMTS/HSPA coverage) <sup>1</sup>					
<b>EXPANSION SLOTS</b>	<b>only S1 version</b>	1x PCI half-length or 1x PCIe x1 half-length, on riser card, max 3W					
<b>POWER SUPPLY INPUT</b>	24VDC (18+32VDC) isolated						
<b>POWER SUPPLY (optional)</b>	<b>UPS</b> Backside mounting not available for SL version	UPS with external battery pack (Pb • 12V/2,5Ah) (backside or separate mounting)					

TECHNICAL DATA

	QT2200 -ALU	QT2200 -TFM	HT2200 -ALU	HT2200 -TF	HT2200 -TFX	HT2200 -TFM
<b>POWER SUPPLY (optional)</b>	<b>UPS + 512kB MRAM</b> Backside mounting not available for SL version		UPS with external battery pack (Pb • 12V/2,5Ah) + 512kB MRAM (backside or separate mounting)			
	<b>μUPS + 512kB MRAM</b>		Supercapacitors μUPS + 512kB MRAM			
	<b>ATX only S0/S1 versions</b>		Kit for ATX mode power supply (push button, internal cable and connector for remote control)			
<b>BATTERY</b>	1x CR2032 Internal access					
<b>O.S. CERTIFIED</b>	Microsoft Windows 7 Pro/Ultimate 32/64bit Microsoft Windows Embedded Standard 7E/7P 32/64 bit Microsoft Windows 10 IoT Enterprise 2016/2019 64bit					
<b>OPERATING TEMPERATURE</b>	0°C ÷ 50°C 0°C ÷ 45°C (24x7 HDD or Intel® Core™ i7 processor) 5°C ÷ 45°C (Standard HDD)					
<b>STORAGE TEMPERATURE</b>	-10°C ÷ 60°C					
<b>OPERATING/STORAGE RELATIVE HUMIDITY</b>	20% + 90% RH (non-condensing)					
<b>APPROVALS</b>	CE UL 508	CE UL 508 ATEX zone 2/22	CE UL 508			CE UL 508

1. Wi-Fi and Cellular modules cannot be used if CODESYS SoftPLC control software is installed on the system.

# QT2250 & HT2250



7"-24"





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UBIQUITY INSIDE

UNIQO OPTIONAL

FANLESS 

IP69K 

- TFT LCDs in 10.4", 12.1", 15" in 4:3 aspect ratio, 17" and 19" in 5:4 aspect ratio and 7", 10.1", 12.1", 15.6", 18.5", 21.5", 24" in Wide aspect ratio
- Aluminum (ALU) and aluminum True Flat (TF) front panels with resistive touchscreen
- Aluminum and glass True Flat panels with multitouch projected capacitive touchscreen (TFM)
- Stainless steel (AISI 304L) True Flat (TFK) front panel with resistive touchscreen
- Intel Atom® x5 and x7 processors of Apollo Lake SoC generation
- RAM up to 8GB
- Available in SL version with reduced depth and S0 version with the possibility to install additional interfaces

## TECHNICAL DATA

	QT2250-ALU	QT2250-TFM	QT2250-TFK	HT2250-ALU	HT2250-TF
LED BACKLIGHT TFT LCD	7" W - 800x480 10.1" W - 1280x800 12.1" W - 1280x800 15.6" W - 1366x768 15.6" W - 1920x1080 18.5" W - 1366x768 18.5" W - 1920x1080 21.5" W - 1920x1080 24" W - 1920x1080			10.4" - 800x600 12.1" - 800x600 12.1" - 1024x768 15" - 1024x768 17" - 1280x1024 19" - 1280x1024	
CUT-OUT	QT			HT	
FRONT USB	-			1x USB 2.0 (Type-A), protected	
TOUCHSCREEN	Resistive 5 wires	P-CAP Multitouch	Resistive 5 wires		
FRONT PANEL	Material	Aluminum	True Flat Aluminum	True Flat Stainless Steel	Aluminum
	ASEM Logo	-			Adhesive label
PROTECTION GRADE	IP rating	IP65 - frontal		IP69K - frontal	IP65 - frontal
	NEMA rating	UL Type 1, 4x (indoor only)			UL Type 1, 4x (indoor only) and 12
CASE	Installation	Panel mounting			
	Material	Zinc-coated skin pass steel			
PROCESSOR (soldered on-board)	Intel Atom® x5-E3930 1.30Ghz (1.80Ghz Burst) • 64bit • 2 cores / 2 threads • 2MB L2 cache • 14nm Intel Atom® x7-E3950 1.60Ghz (2.00Ghz Burst) • 64bit • 4 cores / 4 threads • 2MB L2 cache • 14nm				
CHIPSET	Intel® Apollo Lake • Included into processor chip (SoC)				
VIDEO CONTROLLER	Intel® HD Graphics 500 integrated in x5-E3930 processor • 400MHz/550MHZ Intel® HD Graphics 505 integrated in x7-E3950 processor • 500MHz/650MHZ				
TPM	Intel® PTT (TPM integrated) • Discrete TPM 2.0 module (optional)				
SYSTEM MEMORY RAM	with x5-E3930	4GB LP-DDR4 module			
	with x7-E3950	4GB or 8GB LP-DDR4 module			
MASS STORAGE	CFast	1x bootable CFast SATA III slot onboard with external access (up to 240GB)			
	M.2 SSD	1x onboard connector for direct insertion of M.2 2242 SATA III SSD (up to 480GB)			
INTERFACES	LAN	2x Gigabit Ethernet (RJ45)			
	USB	3x USB 3.0 (Type-A)			
	VIDEO	1x DisplayPort++ V1.2			
ADD-ON INTERFACES (optional)	Position A (max 1) only S0 version and BM	1x RS232/422/485 (DB15M) + 1x USB 2.0 (Type-A) 1x RS232/422/485 (DB15M) isolated + 1x USB 2.0 (Type-A) 2x USB 2.0 (Type-A) 1x Gigabit Ethernet (RJ45) + 1x USB 2.0 (Type-A)			
POWER SUPPLY INPUT	24VDC (18+32VDC) isolated				
POWER SUPPLY (optional)	ATX only S0 version and BM	Kit for ATX mode power supply (push button, internal cable and connector for remote control)			
BATTERY	1x CR2032 Internal access				
O.S. CERTIFIED	Microsoft Windows 10 IoT Enterprise 2019 64 bit				
OPERATING TEMPERATURE	0°C + 50°C				
STORAGE TEMPERATURE	-5°C + 60°C				
OPERATING/STORAGE RELATIVE HUMIDITY	20% + 90% RH (non-condensing)				
APPROVALS	CE cULus Listed				

# QT3400/3600 & HT3400/3600



12.1"-24"



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UBIQUITY INSIDE

UNIQO OPTIONAL

CODESYS OPTIONAL

FANLESS

RVL OPTIONAL

- TFT LCDs in 12.1" and 15" in 4:3 aspect ratio, 17" and 19" in 5:4 aspect ratio and 12.1", 15.6", 18.5", 21.5", 24" in Wide aspect ratio
- Aluminum (ALU) and aluminum True Flat (TF) front panels with resistive touchscreen
- Aluminum and glass True Flat panels with multitouch projected capacitive touchscreen (TFM)
- Stainless steel True Flat (TFX) front panels with resistive touchscreen
- Intel® Celeron®, Core™ i3, i5, i7 processors of Skylake and Kaby Lake generation
- RAM up to 32GB
- Built-in UPS with external battery pack (optional)
- Built-in supercapacitors μUPS, with 512kB MRAM for retentive data management (optional)
- Available in S0, S1 and S2 version, with possibility to install additional interfaces, PCI/PCIe expansion slots and extractable drives slots for 2,5" SSDs/HDDs
- Available with additional RVL (Remote Video Link) interface for remotation of the DVI-D and USB 2.0 signals up to 100m (optional)

## GALLERY



QT3400/3600 & HT3400/3600 - (S0 Version)



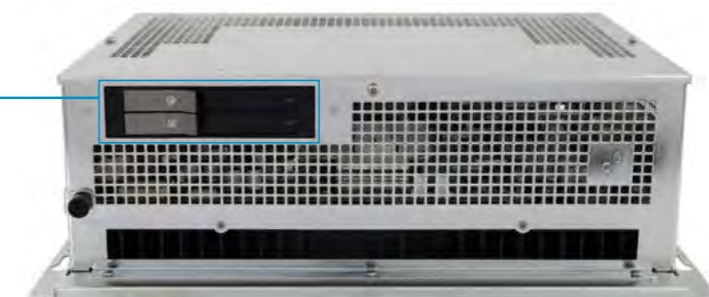
QT3400/3600 & HT3400/3600 - (S1 Version)



QT3400/3600 & HT3400/3600 - (D2 Version)

## DETAIL - EXTRACTABLE DRIVES SLOT

Extractable drives slot available only for D2 Version



## COMPARISON TABLE

	QT3400/3600 & HT3400/3600		
	S0	S1	D2
ADD-ON INTERFACES (optional)	✓	✓	✓
EXPANSION SLOTS PCI/PCIe	✗	1	✗
INTERNAL INSTALLATION KIT for SSDs/HDDs 2,5" SATA III	1	1	✗
EXTRACTABLE DRIVES SLOT for SSDs/HDDs 2,5" SATA III	✗	✗	2

TECHNICAL DATA

	QT3400/3600 -ALU	QT3400/3600 -TFM	HT3400/3600 -ALU	HT3400/3600 -TF	HT3400/3600 -TFX	HT3400/3600 -TFM
<b>LED BACKLIGHT TFT LCD</b>	15.6" W - 1366x768 15.6" W - 1920x1080 18.5" W - 1366x768 18.5" W - 1920x1080 21.5" W - 1920x1080 24"W - 1920x1080		12.1" - 800x600 12.1" - 1024x768 12.1" W - 1280x800 (not for D2 version) 15" - 1024x768 15.6" W - 1366x768 15.6" W - 1920x1080 17" - 1280x1024 18.5" W - 1366x768 18.5" W - 1920x1080 19" - 1280x1024 21.5" W - 1920x1080 24"W - 1920x1080		12.1" - 800x600 12.1" - 1024x768 15.0" - 1024x768 17" - 1280x1024 19" - 1280x1024	12.1" W - 1280x800 (not for D2 version) 15.6" W - 1366x768 15.6" W - 1920x1080 18.5" W - 1366x768 18.5" W - 1920x1080 21.5" W - 1920x1080 24"W - 1920x1080
<b>CUT-OUT</b>	QT		HT			
<b>FRONT USB</b>	-		1x USB 2.0 (Type-A), protected		-	
<b>TOUCHSCREEN</b>	Resistive 5 wires	P-CAP Multitouch	Resistive 5 wires			P-CAP Multitouch
<b>FRONT PANEL</b>	<b>Material</b>	Aluminium	True Flat Aluminium	Aluminium	True Flat Aluminium	True Flat Stainless Steel
	<b>ASEM Logo</b>	-	-	Adhesive label	Silk-screen printed	
<b>PROTECTION GRADE</b>	<b>IP rating</b>	IP65 - frontal			IP66K - frontal	IP65 - frontal
	<b>NEMA rating</b>	UL Type 1, 4x (indoor only)		UL Type 1, 4x (indoor only) and 12		
<b>CASE</b>	<b>Installation</b>	Panel mounting				
	<b>Material</b>	Zinc-coated skin pass steel				
<b>PROCESSOR (soldered on-board)</b>	<b>xx3400</b>	Intel® Celeron® G3900E 2.40GHz 64bit • 2 cores / 2 threads • 2MB Smart cache • 14nm Intel® Core™ i3-6100E 2.70GHz 64bit • 2 cores / 4 threads • 3MB Smart cache • 14nm Intel® Core™ i5-6440EQ 2.70GHz (3.40GHz Turbo) 64bit • 4 cores / 4 threads • 6MB Smart cache • 14nm Intel® Core™ i7-6820EQ 2.80GHz (3.50GHz Turbo) 64bit • 4 cores / 8 threads • 8MB Smart cache • 14nm				
	<b>xx3600</b>	Intel® Core™ i3-7100E 2.90GHz 64bit • 2 cores / 4 threads • 3MB Smart cache • 14nm Intel® Core™ i5-7440EQ 2.90GHz (3.60GHz Turbo) 64bit • 4 cores / 4 threads • 6MB Smart cache • 14nm Intel® Core™ i7-7820EQ 3.00GHz (3.70GHz Turbo) 64bit • 4 cores / 8 threads • 8MB Smart cache • 14nm				
<b>CHIPSET</b>	<b>xx3400</b>	Intel® HM170 PCH (Platform Controller Hub) with integrated RAID controller				
	<b>xx3600</b>	Intel® HM175 PCH (Platform Controller Hub) with integrated RAID controller				
<b>VIDEO CONTROLLER</b>	<b>xx3400</b>	Intel® HD Graphics 510 integrated in Intel® Celeron™ processor • 350MHz/950MHz Intel® HD Graphics 530 integrated in Intel® Core™ i3 processor • 350MHz/950MHz Intel® HD Graphics 530 integrated in Intel® Core™ i5 and i7 processors • 350MHz/1GHz				
	<b>xx3600</b>	Intel® HD Graphics 630 integrated in Intel® Core™ i3 processor • 350MHz/950MHz Intel® HD Graphics 630 integrated in Intel® Core™ i5 and i7 processors • 350MHz/1GHz				
<b>WATCHDOG</b>	Programmable time period					
<b>TPM</b>	Intel® PTT (TPM integrated) • Discrete TPM 2.0 module (optional)					
<b>SYSTEM MEMORY RAM</b>	4GB (1x 4GB SODIMM DDR4 module) 8GB (2x 4GB SODIMM DDR4 module) 16GB (2x 8GB SODIMM DDR4 module) 32GB (2x 16GB SODIMM DDR4 module)					
<b>MASS STORAGE</b>	<b>Cfast</b>	1x bootable CFast SATA III slot onboard with external access (up to 240GB)				
	<b>SSD mSATA</b>	1x onboard connector for direct insertion of SSD mSATA SATA III (up to 960 GB)				
	<b>SSD/HDD</b>	1x onboard connector for SSD/HDD 2.5" SATA III with internal installation kit				
<b>EXTRACTABLE MASS STORAGE</b>	<b>only D2 version</b>	2x extractable SSDs/HDDs 2.5" SATA III units				
<b>RAID</b>	Raid 0, 1					

TECHNICAL DATA

	QT3400/3600 -ALU	QT3400/3600 -TFM	HT3400/3600 -ALU	HT3400/3600 -TF	HT3400/3600 -TFX	HT3400/3600 -TFM
<b>INTERFACES</b>	<b>LAN</b>	4x Gigabit Ethernet (RJ45)				
	<b>USB</b>	3x USB 3.0 (Type-A) • 2x USB 2.0 (Type-A)				
	<b>SERIAL</b>	1x RS232 (DB9M)				
	<b>VIDEO</b>	1x DVI-D (Resolution up to 1920x1080)				
<b>ADD-ON INTERFACES (optional)</b>	<b>Position A (max 1)</b>	1x RS232/422/485 (DB15M) + 1x USB 2.0 (Type-A) 1x RS232/422/485 (DB15M) isolated + 1x USB 2.0 (Type-A) 2x RS232 (DB9M) 2x USB 2.0 (Type-A)				
	<b>Position B (max 1)</b>	1x or 2x RJ45 connectors for RVL 1x Gigabit Ethernet (RJ45) 1x Wi-Fi module (IEEE 802.11 a/b/g/n/ac, 2.4GHz/5GHz • Bluetooth 4.2) <sup>1</sup> and/or 1x Cellular module (worldwide LTE Cat 4, GSM/GPRS, UMTS/HSPA coverage) <sup>1</sup>				
<b>EXPANSION SLOTS</b>	<b>only S1 version</b>	1x PCI half-length or 1x PCIe x4 half-length, on riser card, max 5W				
<b>POWER SUPPLY INPUT</b>	24VDC (18+32VDC) isolated					
<b>POWER SUPPLY (optional)</b>	<b>UPS</b>	UPS with external battery pack (Pb • 12V/2.5Ah) (backside or separate mounting)				
	<b>ATX</b>	Kit for ATX mode power supply (push button, internal cable and connector for remote control)				
<b>BATTERY</b>	1x CR2032 Internal access					
<b>O.S. CERTIFIED</b>	<b>xx3400</b>	Microsoft Windows 10 IoT Enterprise 2019/2016 64 bit Microsoft Windows 7 Pro/Ultimate 32/64 bit Microsoft Windows Embedded Standard 7E/7P 32/64 bit				
	<b>xx3600</b>	Microsoft Windows 10 IoT Enterprise 2019/2016 64 bit				
<b>OPERATING TEMPERATURE</b>	<b>without forced ventilation</b>	0°C + 50°C 0°C + 45°C (24x7 HDD or Intel® Core™ i7 processor) 5°C + 45°C (Standard HDD)				
<b>STORAGE TEMPERATURE</b>	-10°C + 60°C					
<b>OPERATING/STORAGE RELATIVE HUMIDITY</b>	20% + 90% RH (non-condensing)					
<b>APPROVALS</b>	CE cULus Listed	CE cULus Listed ATEX zone 2/22	CE cULus Listed			

1. Wi-Fi and Cellular modules cannot be used if CODESYS SoftPLC control software is installed on the system.



# QT3500 & HT3500



12.1"-24"



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UBIQUITY INSIDE

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RVL OPTIONAL

- TFT LCDs in 12.1" and 15" in 4:3 aspect ratio, 17" and 19" in 5:4 aspect ratio and 12.1", 15.6", 18.5", 21.5", 24" in Wide aspect ratio
- Aluminum (ALU) and aluminum True Flat (TF) front panels with resistive touchscreen
- Aluminum and glass True Flat panels with multitouch projected capacitive touchscreen (TFM)
- Stainless steel True Flat (TFX) front panels with resistive touchscreen
- Intel® Celeron®, Core™ i3, i5, i7 processors of Kaby Lake generation
- RAM up to 16GB
- Built-in UPS with external battery pack (optional)
- Available in SL version with reduced depth, S0 version with the possibility to install additional interfaces and S1 version with one PCI or PCIe expansion slot
- Available with additional RVL (Remote Video Link) interface for remotation of the DVI-D and USB 2.0 signals up to 100m (optional)

## GALLERY



QT3500 & HT3500 - (SL Version)

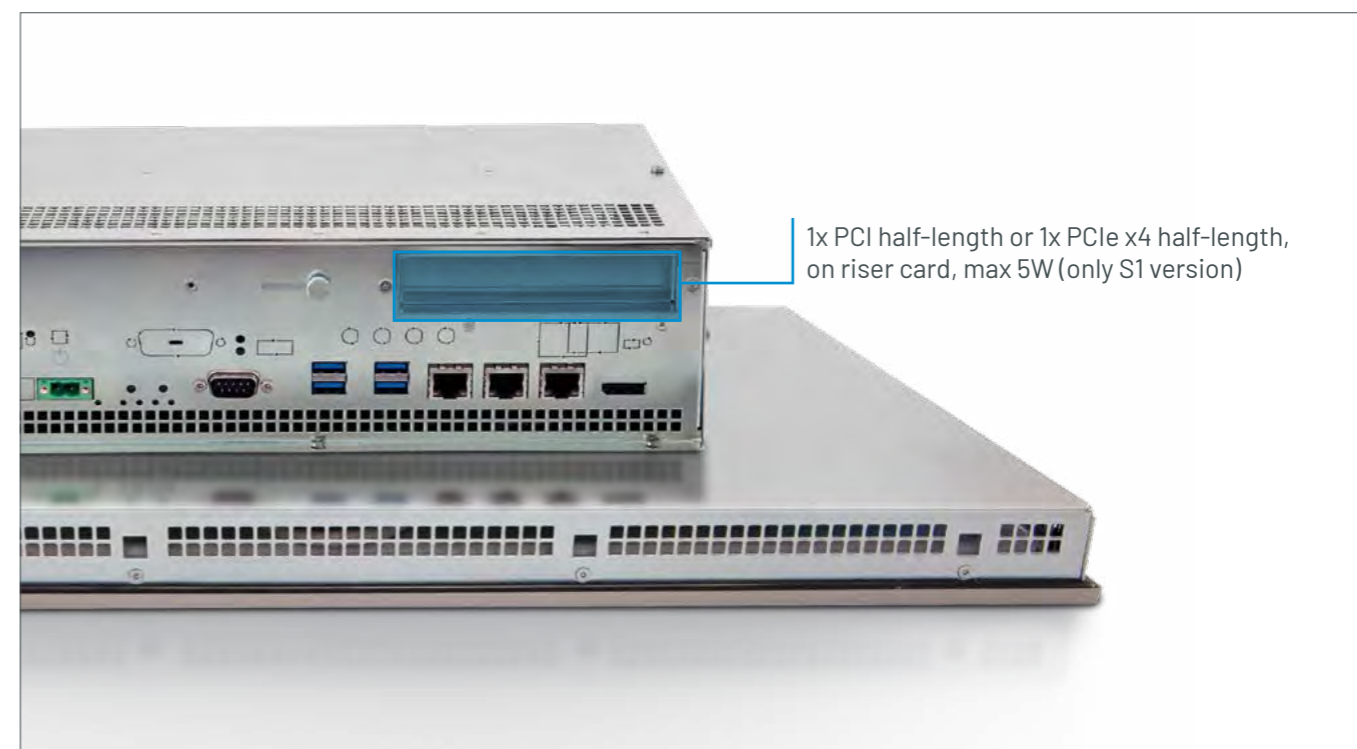


QT3500 & HT3500 - (S0 Version)



QT3500 & HT3500 - (S1 Version)

## DETAIL - EXPANSION SLOTS



TECHNICAL DATA

	QT3500-ALU	QT3500-TFM	HT3500-ALU	HT3500-TF	HT3500-TFM	HT3500-TFX
<b>LED BACKLIGHT TFT LCD</b>	15.6" W - 1366x768 15.6" W - 1920x1080 18.5" W - 1366x768 18.5" W - 1920x1080 21.5" W - 1920x1080 24"W - 1920x1080		12.1" - 800x600 12.1" - 1024x768 12.1" W - 1280x800 15" - 1024x768 15.6" W - 1366x768 15.6" W - 1920x1080 17" - 1280x1024 18.5" W - 1366x768 18.5" W - 1920x1080 19" - 1280x1024 21.5" W - 1920x1080 24"W - 1920x1080		12.1" W - 1280x800 15.6" W - 1366x768 15.6" W - 1920x1080 18.5" W - 1366x768 18.5" W - 1920x1080 21.5" W - 1920x1080 24"W - 1920x1080	12.1" - 800x600 12.1" - 1024x768 15" - 1024x768 17" - 1280x1024 19" - 1280x1024
<b>CUT-OUT</b>	QT		HT			
<b>FRONT USB</b>	-		1x USB 2.0 (Type-A), protected		-	
<b>TOUCHSCREEN</b>	Resistive 5 wires	P-CAP Multitouch	Resistive 5 wires		P-CAP Multitouch	Resistive 5 wires
<b>FRONT PANEL</b>	<b>Material</b>	Aluminum	True Flat Aluminum	Aluminum	True Flat Aluminum	
	<b>ASEM Logo</b>	-		Adhesive label	Silk-screen printed	-
<b>PROTECTION GRADE</b>	<b>IP rating</b>	IP65 - frontal				IP66K - frontal
	<b>NEMA rating</b>	UL Type 1, 4x (indoor only)		UL Type 1, 4x (indoor only) and 12		
<b>CASE</b>	<b>Installation</b>	Panel mounting				
	<b>Material</b>	Zinc coated stainless steel				
<b>PROCESSOR (soldered on-board)</b>	Intel® Celeron® 3965U 2.20GHz 64bit• 2 cores / 2 threads• 2MB Smart cache• 14nm Intel® Core™ i3-7100U 2.40GHz 64bit• 2 cores / 4 threads• 3MB Smart cache• 14nm Intel® Core™ i5-7300U 2.60GHz (3.50GHz Turbo) 64bit• 2 cores / 4 threads• 3MB Smart cache• 14nm Intel® Core™ i7-7600U 2.80GHz (3.90GHz Turbo) 64bit• 2 cores / 4 threads• 4MB Smart cache• 14nm					
<b>CHIPSET</b>	Intel® Kaby Lake U PCH (Platform Controller Hub) • Included into processor chip (SoC)					
<b>VIDEO CONTROLLER</b>	Intel® HD Graphics 610 integrated in Intel® Celeron® processor• 300MHz/900MHz Intel® HD Graphics 620 integrated in Intel® Core™ i3 processor• 300MHz/1GHz Intel® HD Graphics 620 integrated in Intel® Core™ i5 processor• 300MHz/1.10GHz Intel® HD Graphics 620 integrated in Intel® Core™ i7 processor• 300MHz/1.15GHz					
<b>WATCHDOG</b>	Programmable time period					
<b>TPM</b>	<b>Discrete version only for S0/S1 versions and BM</b>	Intel® PTT (TPM integrated) • Discrete TPM 2.0 module (optional)				
<b>SYSTEM MEMORY RAM</b>	4GB or 8GB or 16GB (1x SODIMM DDR4 module)					
<b>MASS STORAGE</b>	<b>Cfast</b>	1x bootable Cfast SATA III slot onboard with external access (up to 240GB)				
	<b>SSD M.2</b>	1x onboard connector for direct insertion of M.2 2280 NVMe PCIe x2 SSD (up to 512GB) or M.2 2280 NVMe PCIe x4 SSD (up to 1TB) <sup>1</sup> or M.2 2242 SATA III SSD (up to 480GB)				
	<b>SSD/HDD only S0/S1 versions and BM</b>	1x onboard connector for SSD/HDD 2.5" SATA III with internal installation kit				
<b>INTERFACES</b>	<b>LAN</b>	3x Gigabit Ethernet (RJ45)				
	<b>USB</b>	4x USB 3.0 (Type-A)				
	<b>SERIAL</b>	1x RS232 (DB9M)				
	<b>VIDEO</b>	1x DisplayPort++ V1.2				
<b>ADD-ON INTERFACES (optional) not available for SL version</b>	<b>Position A (max 1)</b>	1x RS232/422/485 (DB15M) + 1x USB 2.0 (Type-A) 1x RS232/422/485 (DB15M) isolated + 1x USB 2.0 (Type-A) 2x RS232 (DB9M) 2x USB 2.0 (Type-A)				
	<b>Position B (max 1)</b>	1x Gigabit Ethernet (RJ45) 1x DVI-D (Resolution up to 1900x1200) 1x RJ45 connector for RVL 1x Wi-Fi module (IEEE 802.11 a/b/g/n/ac, 2.4GHz/5GHz• Bluetooth 4.2) and/or 1x Cellular module (worldwide LTE Cat 4, GSM/GPRS, UMTS/HSPA coverage)				

TECHNICAL DATA

	QT3500-ALU	QT3500-TFM	HT3500-ALU	HT3500-TF	HT3500-TFM	HT3500-TFX
<b>EXPANSION SLOTS</b>	<b>only S1 version</b>		1x PCI half-length or 1x PCIe x4 half-length, on riser card, max 5W			
<b>POWER SUPPLY INPUT</b>	24VDC (18÷32VDC) isolated					
<b>POWER SUPPLY (optional)</b>	<b>UPS</b>		UPS with external battery pack (Pb• 12V/2.5A) (backside or separate mounting)			
	<b>ATX only S0/S1 versions</b>		Kit for ATX mode power supply (push button, internal cable and connector for remote control)			
<b>BATTERY</b>	1x CR2032 internal access					
<b>O.S. CERTIFIED</b>	Microsoft Windows 10 IoT Enterprise 2019/2016 64 bit					
<b>OPERATING TEMPERATURE</b>	0°C ÷ 50°C 0°C ÷ 45°C (24x7 HDD or Intel® Core™ i7 processor) 5°C ÷ 45°C (Standard HDD)					
<b>STORAGE TEMPERATURE</b>	-10°C ÷ 60°C					
<b>OPERATING/STORAGE RELATIVE HUMIDITY</b>	20% + 90% RH (non-condensing)					
<b>APPROVALS</b>	CE cULus Listed					

1. The M.2 NVMe PCIe x4 SSDs show actual performance that differs from the manufacturer's claims, as they are driven via 2 lanes (socket M.2 PCIe x2). Data transfer rates are about half of the declared value (comparable to M.2 NVMe PCIe x2 SSDs).

# QT5400/5600 & HT5400/5600



15"-24"



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PRODUCT SHEET



UBIQUITY INSIDE

UNIQO OPTIONAL

RVL   OPTIONAL

- TFT LCDs in 15" in 4:3 aspect ratio, 17" and 19" in 5:4 aspect ratio and 15.6", 18.5", 21.5", 24" in Wide aspect ratio
- Aluminum (ALU) and aluminum True Flat (TF) front panels with resistive touchscreen
- Aluminum and glass True Flat panels with multitouch projected capacitive touchscreen (TFM)
- Stainless steel True Flat (TFX) front panels with resistive touchscreen
- Intel® Celeron®, Core™ i3, i5, i7 processors of Skylake and Kaby Lake generation
- RAM up to 32GB
- Available in S0 version with the possibility to install additional interfaces, S1 version with one PCIe expansion slot and S3 version with three PCIe expansion slots
- Available with additional RVL interface for remotation of the DVI-D and USB 2.0 signals up to 100m (optional)
- Available with 115/230VAC power supply (optional)

## GALLERY



QT5400/5600 e HT5400/5600 - (S0 Version) - 24VDC



QT5400/5600 e HT5400/5600 - (S0 Version) - 230VAC



QT5400/5600 e HT5400/5600 - (S1 Version) - 24VDC



QT5400/5600 e HT5400/5600 - (S1 Version) - 230VAC



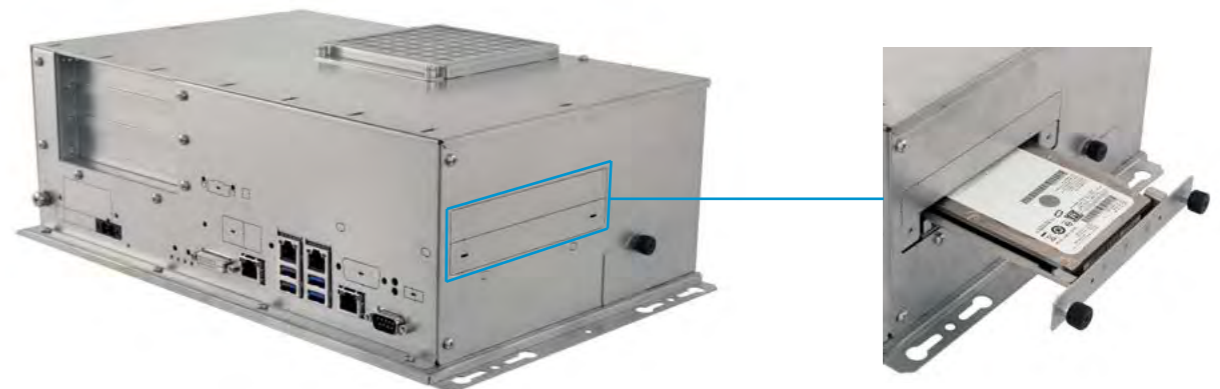
QT5400-5600, HT5400-5600 - (S3 Version) - 24VDC



QT5400-5600, HT5400-5600 - (S3 Version) - 230VAC

## DETAIL - EXTRACTABLE DRIVES SLOT

Extractable drives slot available only for S1 and S3 versions



TECHNICAL DATA

	QT5400/5600 -ALU	QT5400/5600 -TFM	HT5400/5600 -ALU	HT5400/5600 -TF	HT5400/5600 -TFX	HT5400/5600 -TFM
<b>LED BACKLIGHT TFT LCD</b>	15.6" W - 1366x768 15.6" W - 1920x1080 18.5" W - 1366x768 18.5" W - 1920x1080 21.5" W - 1920x1080 24"W - 1920x1080		15" - 1024x768 15.6" W - 1366x768 15.6" W - 1920x1080 17" - 1280x1024 18.5" W - 1366x768 18.5" W - 1920x1080 19" - 1280x1024 21.5" W - 1920x1080 24"W - 1920x1080		15" - 1024x768 17" - 1280x1024 19" - 1280x1024	15.6" W - 1366x768 15.6" W - 1920x1080 18.5" W - 1366x768 18.5" W - 1920x1080 21.5" W - 1920x1080 24"W - 1920x1080
<b>CUT-OUT</b>	QT		HT			
<b>FRONT USB</b>	-		1x USB 2.0 (Type-A), protected		-	
<b>TOUCHSCREEN</b>	Resistive 5 wires	P-CAP Multi-touch	Resistive 5 wires			P-CAP Multitouch
<b>FRONT PANEL</b>	<b>Material</b>	Aluminum	True Flat Aluminum	Aluminum	True Flat Aluminum	True Flat Stainless Steel
	<b>ASEM Logo</b>	-	Adhesive label	Silk screen printed		-
<b>PROTECTION GRADE</b>	<b>IP rating</b>	IP65 - frontal			IP66K - frontal	IP65 - frontal
	<b>NEMA rating</b>	UL Type 1, 4x (indoor only)		UL Type 1, 4x (indoor only) and 12		
<b>CASE</b>	<b>Installation</b>	Panel mounting				
	<b>Material</b>	Zinc-coated skin pass steel				
<b>PROCESSOR (soldered on-board)</b>	<b>xx5400</b>	Intel® Core™ i3-6100 3.70GHz 64bit • 2 cores / 4 threads • 3MB Smart cache • 14nm Intel® Core™ i5-6500 3.20GHz (3.60GHz Turbo) 64bit • 4 cores / 4 threads • 6MB Smart cache • 14nm Intel® Core™ i7-6700 3.40GHz (4.00GHz Turbo) 64bit • 4 cores / 8 threads • 8MB Smart cache • 14nm				
	<b>xx5600</b>	Intel® Celeron® G3930E 2.90GHz 64bit • 2 cores / 2 threads • 2MB Smart cache • 14nm Intel® Core™ i3-7101E 3.90GHz 64bit • 2 cores / 4 threads • 3MB Smart cache • 14nm Intel® Core™ i5-7500 3.40GHz (3.80GHz Turbo) 64bit • 4 cores / 4 threads • 6MB Smart cache • 14nm Intel® Core™ i7-7700 3.60GHz (4.20GHz Turbo) 64bit • 4 cores / 8 threads • 8MB Smart cache • 14nm				
<b>CHIPSET</b>	Intel® C236 PCH (Platform Controller Hub) with integrated RAID controller					
<b>VIDEO CONTROLLER</b>	<b>xx5400</b>	Intel® HD Graphics 530 integrated in Intel® Core® i3 and i5 processors • 350MHz/1.05GHz Intel® HD Graphics 530 integrated in Intel® Core® i7 processor • 350MHz/1.15GHz				
	<b>xx5600</b>	Intel® HD Graphics 610 integrated in Intel® Celeron® processor • 350MHz/1GHz Intel® HD Graphics 630 integrated in Intel® Core® i3 and i5 processors • 350MHz/1.10GHz Intel® HD Graphics 630 integrated in Intel® Core® i7 processor • 350MHz/1.15GHz				
<b>WATCHDOG</b>	Programmable time period					
<b>TPM</b>	Intel® PTT (TPM integrated) • Discrete TPM 2.0 module (optional)					
<b>SYSTEM MEMORY RAM (soldered)</b>	4GB (1x 4GB SODIMM DDR4 module) 8GB (2x 4GB SODIMM DDR4 module) 16GB (2x 8GB SODIMM DDR4 module) 32GB (2x 16GB SODIMM DDR4 module)					
<b>MASS STORAGE</b>	<b>Cfast</b>	1x bootable CFast SATA III slot onboard with external access (up to 240GB)				
	<b>SSD M.2</b>	1x onboard connector for direct insertion of M.2 2280 NVMe PCIe x4 SSD (up to 512GB) or M.2 2242 SATA III SSD (up to 480GB)				
	<b>SSD/HDD</b>	2x onboard connectors for SSDs/HDDs 2.5" SATA III with internal installation kit				
<b>EXTRACTABLE MASS STORAGE</b>	<b>S0/S1/S3 versions</b>	1x extractable SSD/HDD 2.5" SATA III unit				
	<b>only S1/S3 versions</b>	2x extractable SSDs/HDDs 2.5" SATA III units				
<b>RAID</b>	Raid 0, 1					
<b>INTERFACES</b>	<b>LAN</b>	4x Gigabit Ethernet (RJ45)				
	<b>USB</b>	4x USB 3.0 (Type-A)				
	<b>SERIAL</b>	1x RS232 (DB9M)				
	<b>VIDEO</b>	1x DVI-D (Resolution up to 1920x1080)				

TECHNICAL DATA

	QT5400/5600 -ALU	QT5400/5600 -TFM	HT5400/5600 -ALU	HT5400/5600 -TF	HT5400/5600 -TFX	HT5400/5600 -TFM
<b>ADD-ON INTERFACES (optional)</b>	<b>Position A (max 1)</b>	1x RS232/422/485 (DB15M) + 1x USB 2.0 (Type-A) 1x RS232/422/485 (DB15M) isolated + 1x USB 2.0 (Type-A) 2x RS232 (DB9M) 2x USB 2.0 (Type-A)				
	<b>Position B (max 1)</b>	1x Gigabit Ethernet (RJ45) 1x or 2x RJ45 connectors for RVL 2x DisplayPort++ V1.2 1x Wi-Fi module (IEEE 802.11 a/b/g/n/ac, 2.4GHz/5GHz • Bluetooth 4.2) and/or 1x Cellular module (worldwide LTE Cat 4, GSM/GPRS, UMTS/HSPA coverage)				
<b>EXPANSION SLOTS</b>	<b>only S1 version</b>	1x PCIe x16 half-length, on riser card, max 50W				
	<b>only S3 version</b>	1x PCIe x16 half-length + 1x PCIe x4 half-length + 1x PCIe x1 half-length or 2x PCIe x8 half-length + 1x PCIe x4 half-length, on riser card, max 50W total				
<b>POWER SUPPLY INPUT</b>		24VDC (18+32VDC) isolated				
	<b>optional</b>	115V/230VAC (85+264VAC) isolated, autoranging				
<b>POWER SUPPLY (optional)</b>	<b>ATX</b>	Kit for ATX mode power supply (push button, internal cable and connector for remote control)				
<b>BATTERY</b>	1x CR2032 Internal access					
<b>O.S. CERTIFIED</b>	<b>xx5400</b>	Microsoft Windows 10 IoT Enterprise 2019/2016 64 bit Microsoft Windows 7 Pro/Ultimate 64 bit Microsoft Windows Embedded Standard 7E/7P 64 bit Microsoft Windows Server Embedded Standard 2019 R2 64 bit				
	<b>xx5600</b>	Microsoft Windows 10 IoT Enterprise 2019/2016 64 bit Microsoft Windows Server Embedded Standard 2019 R2 64 bit				
<b>OPERATING TEMPERATURE</b>	0°C + 50°C 0°C + 45°C (24x7 HDD or Intel® Core™ i7 processor) 5°C + 45°C (Standard HDD)					
<b>STORAGE TEMPERATURE</b>	-10°C + 60°C					
<b>OPERATING/STORAGE RELATIVE HUMIDITY</b>	20% + 90% RH (non-condensing)					
<b>APPROVALS</b>	CE cULus Listed					

# COMPARISON TABLE



	QT2150 & HT2150	QT2200 & HT2200	QT2250 & HT2250	QT3400 & HT3400	QT3500 & HT3500	QT3600 & HT3600	QT5400 & HT5400	QT5600 & HT5600	
<b>FANLESS</b>	✓	✓	✓	✓	✓	✓	✗	✗	
<b>FRONT PANELS</b>	<b>Wide sizes</b>	7", 10,1", 12,1", 15,6"	10,1", 12,1", 15,6", 18,5", 21,5", 24"	7", 10,1", 12,1", 15,6", 18,5", 21,5", 24"	12,1", 15,6", 18,5", 21,5", 24"	12,1", 15,6", 18,5", 21,5", 24"	15,6", 18,5", 21,5", 24"	15,6", 18,5", 21,5", 24"	
	<b>Narrow sizes</b>	8,4", 10,4", 12,1", 15"	10,4", 12,1", 15", 17", 19"	10,4", 12,1", 15", 17", 19"	10,4", 12,1", 15", 17", 19"	10,4", 12,1", 15", 17", 19"	10,4", 12,1", 15", 17", 19"	10,4", 12,1", 15", 17", 19"	
	<b>Types</b>	ALU, TF, TFM	ALU, TF, TFM, TFX	ALU, TF, TFM, TFK	ALU, TF, TFM, TFX	ALU, TF, TFM, TFX	ALU, TF, TFM, TFX	ALU, TF, TFM, TFX	ALU, TF, TFM, TFX
	<b>Touchscreen technology</b>	Resistive Multitouch	Resistive Multitouch	Resistive Multitouch	Resistive Multitouch	Resistive Multitouch	Resistive Multitouch	Resistive Multitouch	Resistive Multitouch
<b>PROCESSORS</b>	<b>Model</b>	Intel® Celeron® J1900	Intel® Celeron® J1900	Intel Atom® x5-E3930 Intel Atom® x7-E3950	Intel® Celeron® G3900E Intel® Core™ i3-6100E Intel® Core™ i5-6440EQ Intel® Core™ i7-6820EQ	Intel® Celeron® 3965U Intel® Core™ i3-7100U Intel® Core™ i5-7300U Intel® Core™ i7-7600U	Intel® Core™ i3-7100E Intel® Core™ i5-7440EQ Intel® Core™ i7-7820EQ	Intel® Celeron® G3930E Intel® Core™ i3-7101E Intel® Core™ i3-7101E Intel® Core™ i7-7700	
	<b>Generation</b>	Intel® Bay Trail	Intel® Bay Trail	Intel® Apollo Lake	Intel® Skylake	Intel® Kaby Lake U	Intel® Kaby Lake	Intel® Skylake	Intel® Kaby Lake
<b>SYSTEM MEMORY</b>	Up to 8GB	Up to 8GB	Up to 8GB	Up to 32GB	Up to 16GB	Up to 32GB	Up to 32GB	Up to 32GB	
<b>INTERFACES</b>	<b>LAN</b>	2x RJ45	2x RJ45	2x RJ45	4x RJ45	3x RJ45	4x RJ45	4x RJ45	
	<b>USB</b>	1x USB 3.0 • 1x USB 2.0	2x USB 2.0 • 1x USB 3.0	3x USB 3.0	3x USB 3.0 • 2x USB 2.0	4x USB 3.0	3x USB 3.0 • 2x USB 2.0	4x USB 3.0	4x USB 3.0
	<b>Serial</b>	-	1x RS232 (DB9M)	-	1x RS232 (DB9M)	1x RS232 (DB9M)	1x RS232 (DB9M)	1x RS232 (DB9M)	1x RS232 (DB9M)
	<b>Video</b>	-	1x DVI-D	1x DisplayPort++ V1.2	1x DVI-D	1x DisplayPort++ V1.2	1x DVI-D	1x DVI-D	1x DVI-D
<b>EXPANSION SLOTS PCI/PCIe</b>	-	Up to 1	-	Up to 1	Up to 1	Up to 1	Up to 3	Up to 3	
<b>INTERNAL SSD/HDD</b>	-	Up to 1	-	Up to 1	Up to 1	Up to 1	Up to 3	Up to 3	
<b>EXTRACTABLE SSD/HDD</b>	-	-	-	Up to 2	-	Up to 2	Up to 2	Up to 2	
<b>POWER SUPPLY INPUT</b>	24VDC	24VDC	24VDC	24VDC	24VDC	24VDC	24VDC 115V/230VAC	24VDC 115V/230VAC	
<b>OPERATING SYSTEMS</b>	Microsoft Windows 7 Microsoft Windows Embedded Standard 7 Microsoft Windows 10 IoT Enterprise LTSC	Microsoft Windows 7 Microsoft Windows Embedded Standard 7 Microsoft Windows 10 IoT Enterprise LTSC	Microsoft Windows 10 IoT Enterprise LTSC	Microsoft Windows 7 Microsoft Windows Embedded Standard 7 Microsoft Windows 10 IoT Enterprise LTSC	Microsoft Windows 10 IoT Enterprise LTSC	Microsoft Windows 10 IoT Enterprise LTSC	Microsoft Windows 7 Microsoft Windows Embedded Standard 7 Microsoft Windows 10 IoT Enterprise LTSC Microsoft Windows Server Embedded Standard	Microsoft Windows 10 IoT Enterprise LTSC Microsoft Windows Server Embedded Standard	
<b>PAC VERSION *</b>	✗	✓	✗	✓	✗	✓	✗	✗	
<b>CERTIFICATIONS</b>	CE cUL US LISTED	CE cUL US LISTED EX**	CE cUL US LISTED	CE cUL US LISTED EX**	CE cUL US LISTED	CE cUL US LISTED EX**	CE cUL US LISTED	CE cUL US LISTED	

\* with UPS + 512kB MRAM for retentive data management and Codesys software  
 \*\* only for QT-TFM

# BOX IPCS

HIGH PERFORMANCE  
WIDE CONFIGURABILITY  
ERGONOMIC DESIGN  
ROBUST DESIGN



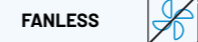
# PB2150 & BM2150



DOWNLOAD THE PRODUCT SHEET



- Intel® Celeron® processor of SoC Bay Trail generation
- RAM up to 8GB
- DIN rail mounting available (only BM2150)
- Built-in UPS with external battery pack (optional)
- Available in SL version with reduced depth and S0 version with the possibility to install additional interfaces (only PB2150)



## TECHNICAL DATA

		PB2150	BM2150
PROTECTION GRADE	IP rating	IP20	
	NEMA rating	-	
CASE	Installation	Wall mounting	Book/DIN mounting
	Material	Zinc-coated skin pass steel	Aluminum alloy
PROCESSOR (soldered on-board)		Intel® Celeron® J1900 2.00Ghz (2.30GHz Burst) • 4 cores / 4 threads • 2MB L2 cache • 22nm	
CHIPSET		Intel® Bay Trail • Included into processor chip (SoC)	
VIDEO CONTROLLER		Intel® HD Graphics for Intel Atom® processor Z3700 series • 688MHz/854MHZ	
SYSTEM MEMORY RAM		1GB or 2GB or 4GB or 8GB SODIMM DDR3L module	
MASS STORAGE	CFast	1x bootable CFast SATA II slot onboard with external access (up to 240GB)	
	SSD mSATA	1 x onboard connector for direct insertion of mSATA SSD SATA II (up to 960GB)	
INTERFACES	LAN	2x Gigabit Ethernet (RJ45)	
	USB	1x USB 3.0 (Type-A) • 1x USB 2.0 (Type-A)	
	VIDEO	1 x DVI-D (Resolution up to 1920x1080)	
ADD-ON INTERFACES (optional)	Position A (max 1) only S0 version and BM	1x RS232/422/485 (DB15M) + 1x USB 2.0 (Type-A) 1x RS232/422/485 (DB15M) isolated + 1x USB 2.0 (Type-A) 2x RS232 (DB9M) 1x USB 2.0 (Type-A) 2x USB 2.0 (Type-A) 1x Gigabit Ethernet (RJ45) + 1x USB 2.0 (Type-A) 1x Wi-Fi module (IEEE 802.11 a/b/g/n/ac, 2.4GHz/5GHz • Bluetooth 4.2) and/or 1x Cellular module (worldwide LTE Cat 4, GSM/GPRS, UMTS/HSPA coverage)	
POWER SUPPLY INPUT		24VDC (18-32VDC) isolated	
POWER SUPPLY (optional)	UPS	UPS with external battery pack (Pb • 12V/2,5Ah) (separate mounting)	
	ATX only S0 version and BM w/o UPS	Kit for ATX mode power supply (push button, internal cable and connector for remote control)	
	ATX only BM w/ UPS	-	Kit for ATX mode power supply (connector for remote control)
BATTERY		1x CR2032 Internal access	
O.S. CERTIFIED		Microsoft Windows 7 Pro/Ultimate 32/64bit Microsoft Windows Embedded Standard 7E/7P 32/64 bit Microsoft Windows 10 IoT Enterprise 2016/2019 64 bit	
OPERATING TEMPERATURE		0°C + 50°C	
STORAGE TEMPERATURE		-5°C + 60°C	
OPERATING/STORAGE RELATIVE HUMIDITY		20% + 90% RH (non-condensing)	
APPROVALS		CE cULus Listed	

# PB2200 & BM2200




DOWNLOAD THE  
PRODUCT SHEET



UBIQUITY INSIDE

UNIQO OPTIONAL

CODESYS OPTIONAL

FANLESS 

REMOTE VIDEO LINK 

- Intel® Celeron® processors of SoC Bay Trail generation
- RAM up to 8GB
- Built-in UPS with external battery pack (optional)
- Available in SL version with reduced depth, S0 version with the possibility to install additional interfaces and S1 version with PCI or PCIe expansion slot (only PB2200)
- Available in RVL version (BM2200 RVL) for the remotation of the DVI-D and USB 2.0 signals up to 100m

## TECHNICAL DATA

		PB2200	BM2200
PROTECTION GRADE	IP rating	IP20	
	NEMA rating	-	
CASE	Installation	Wall mounting	Book mounting
	Material	Zinc-coated skin pass steel	Aluminum alloy
PROCESSOR (soldered on-board)		Intel® Celeron® J1900 2.00GHz (2.42GHz Burst) • 64bit • 4 cores / 4 threads • 2MB L2 cache • 22nm	
CHIPSET		Intel® Bay Trail • Included into processor chip (SoC)	
VIDEO CONTROLLER		Intel® HD Graphics for Intel Atom® processor Z3700 series • 688MHz/854MHz	
WATCHDOG		Programmable time period	
TPM		Discrete TPM 2.0 module (optional)	
SYSTEM MEMORY RAM		1GB or 2GB or 4GB or 8GB (1x SODIMM DDR3L module)	2GB or 4GB or 8GB (1x SODIMM DDR3L module)
MASS STORAGE (SSD mSATA and SSD/HDD alternative to each other)	Cfast	1x bootable CFast SATA II slot onboard with external access (up to 240GB)	
	SSD mSATA	1x onboard connector for direct insertion of SSD mSATA SATA II (up to 960GB)	
	SSD/HDD only S0/S1 versions	1x onboard connectors for SSDs/HDDs 2,5" SATA II with internal installation kit	
INTERFACES	LAN	2x Gigabit Ethernet (RJ45)	
	USB	2x USB 2.0 (Type-A) • 1x USB 3.0 (Type-A)	2x USB 2.0 (Type-A) • 1x USB 3.0 (Type-A) front
	SERIAL	1x RS232 (DB9M)	-
	VIDEO	1x DVI-I (Resolution up to 1920x1080 • VGA adapter included)	1x DVI-I (Resolution up to 1920x1080 • VGA adapter included) or 1x RJ45 connector for RVL
ADD-ON INTERFACES (optional) not available for SL version	Position A (max 1)	1x RS232/422/485 (DB15M) + 1x USB 2.0 (Type-A) 1x RS232/422/485 (DB15M) isolated + 1x USB 2.0 (Type-A) 2x RS232 (DB9M) 2x USB 2.0 (Type-A)	1x RS232/422/485 (DB15M) isolated + 2x RS232 (DB9M) 1x RS232/422/485 (DB15M) isolated + 1x Gigabit Ethernet (RJ45)
	Position B (max 1)	1x Gigabit Ethernet (RJ45) 1x Wi-Fi module (IEEE 802.11 a/b/g/n/ac, 2.4GHz/5GHz • Bluetooth 4.2) <sup>1</sup> and/or 1x Cellular module (worldwide LTE Cat 4, GSM/GPRS, UMTS/HSPA coverage) <sup>1</sup>	-
EXPANSION SLOTS	only S1 version	1x PCI half-length or 1x PCIe x1 half-length, on riser card, max 3W	-
POWER SUPPLY INPUT		24VDC (18÷32VDC) isolated	
POWER SUPPLY (optional)	UPS Backside mounting not available for SL version	UPS with external battery pack (Pb • 12V/2,5Ah) (backside or separate mounting)	UPS with external battery pack (Pb • 12V/2,5Ah) (separate mounting)
	UPS + 512kB MRAM Backside mounting not available for SL version	Kit for ATX mode power supply (push button, internal cable and connector for remote control)	-
	µUPS + 512kB MRAM	Supercapacitors µUPS + 512kB MRAM	
	ATX only S0/S1 versions	Kit for ATX mode power supply (push button, internal cable and connector for remote control)	-
BATTERY		1x CR2032 Internal access	1x CR2032 Removable front access
O.S. CERTIFIED		Microsoft Windows 7 Pro/Ultimate 32/64bit Microsoft Windows Embedded Standard 7E/7P 32/64 bit Microsoft Windows 10 IoT Enterprise 2016/2019 64bit	
OPERATING TEMPERATURE		0°C ÷ 50°C 0°C ÷ 45°C (24x7 HDD or Intel® Core™ i7 processor) 5°C ÷ 45°C (Standard HDD)	
STORAGE TEMPERATURE		-10°C ÷ 60°C	
OPERATING/STORAGE RELATIVE HUMIDITY		20% ÷ 90% RH (non-condensing)	
APPROVALS		CE UL 508	CE cULus Listed

1. Wi-Fi and Cellular modules cannot be used if CODESYS SoftPLC control software is installed on the system.



# PB2250 & BM2250



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PRODUCT SHEET



UBIQUITY INSIDE

UNIQO OPTIONAL

FANLESS



- Intel Atom® x5 e x7 processor of SoC Apollo Lake generation
- RAM up to 8GB
- DIN rail mounting available (only BM2250)
- Available in SL version with reduced depth and S0 version with the possibility to install additional interfaces (only PB2250)

## TECHNICAL DATA

	PB2250	BM2250
PROTECTION GRADE	IP20	
CASE	Installation	Wall mounting
	Material	Zinc-coated skin pass steel
PROCESSOR (soldered on-board)	Intel Atom® x5-E3930 1.30Ghz (1.80Ghz Burst) • 64bit • 2 cores / 2 threads • 2MB L2 cache • 14nm Intel Atom® x7-E3950 1.60Ghz (2.00Ghz Burst) • 64bit • 4 cores / 4 threads • 2MB L2 cache • 14nm	
CHIPSET	Intel® Apollo Lake • Included into processor chip (SoC)	
VIDEO CONTROLLER	Intel® HD Graphics 500 integrated in x5-E3930 processor • 400MHz/550MHZ Intel® HD Graphics 505 integrated in x7-E3950 processor • 500MHz/650MHZ	
TPM	Intel® PTT (TPM integrated) • Discrete TPM 2.0 module (optional)	
SYSTEM MEMORY RAM	with x5-E3930	4GB LP-DDR4 module
	with x7-E3950	4GB or 8GB LP-DDR4 module
MASS STORAGE	CFast	1x bootable CFast SATA III slot onboard with external access (up to 240GB)
	M.2 SSD	1x onboard connector for direct insertion of M.2 2242 SATA III SSD (up to 480GB)
INTERFACES	LAN	2x Gigabit Ethernet (RJ45)
	USB	3x USB 3.0 (Type-A)
	VIDEO	1x DisplayPort++ V1.2
ADD-ON INTERFACES (optional)	Position A (max 1) only S0 version and BM	1x RS232/422/485 (DB15M) + 1x USB 2.0 (Type-A) 1x RS232/422/485 (DB15M) isolated + 1x USB 2.0 (Type-A) 2x USB 2.0 (Type-A) 1x Gigabit Ethernet (RJ45) + 1x USB 2.0 (Type-A)
POWER SUPPLY INPUT	24VDC (18+32VDC) isolated	
POWER SUPPLY (optional)	ATX only S0 version and BM	Kit for ATX mode power supply (push button, internal cable and connector for remote control)
BATTERY	1x CR2032 Internal access	
O.S. CERTIFIED	Microsoft Windows 10 IoT Enterprise 2019 64 bit	
OPERATING TEMPERATURE	0°C + 50°C	
STORAGE TEMPERATURE	-5°C + 60°C	
OPERATING/STORAGE RELATIVE HUMIDITY	20% + 90% RH (non-condensing)	
APPROVALS	CE cULus Listed	

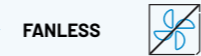
# BM3300



[DOWNLOAD THE PRODUCT SHEET](#)



- Intel® Celeron®, Core™ i3, i5, i7 processors of Skylake generation
- RAM up to 16GB
- Built-in UPS with external battery pack (optional)
- Available in RVL version (BM3300 RVL) for the remotation of the DVI-D and USB 2.0 signals up to 100m



## TECHNICAL DATA

		BM3300
PROTECTION GRADE		IP20
CASE	Installation	Book mounting
	Material	Aluminum alloy
PROCESSOR (soldered on-board)		Intel® Celeron® 3955U 2.00GHz 64bit • 2 cores / 2 threads • 2MB Smart cache • 14nm Intel® Core™ i3-6100U 2.30GHz 64bit • 2 cores / 4 threads • 3MB Smart cache • 14nm Intel® Core™ i5-6300U 2.40GHz (3.00GHz Turbo) 64bit • 2 cores / 4 threads • 3MB Smart cache • 14nm Intel® Core™ i7-6600U 2.60GHz (3.40GHz Turbo) 64bit • 2 cores / 4 threads • 4MB Smart cache • 14nm
CHIPSET		Intel® Skylake U PCH (Platform Controller Hub) • Included into processor chip (Soc)
VIDEO CONTROLLER		Intel® HD Graphics 510 integrated in Intel® Celeron® processor • 300MHz/900MHz Intel® HD Graphics 520 integrated in Intel® Core™ i3 and i5 processors • 300MHz/1GHz Intel® HD Graphics 520 integrated in Intel® Core™ i7 processor • 300MHz/1,05GHz
WATCHDOG		Programmable time period
TPM		Intel® PTT (TPM integrated) • Discrete TPM 2.0 module (optional)
SYSTEM MEMORY RAM		4GB or 8GB or 16GB (1x SODIMM DDR4 module)
MASS STORAGE	CFast	1x bootable CFast SATA III slot onboard with external access (up to 240GB)
	SSD mSATA	1x onboard connector for direct insertion of SSD mSATA SATA III
	SSD/HDD	1x onboard connector for SSD/HDD 2.5" SATA III with internal installation kit
INTERFACES	LAN	3x Gigabit Ethernet (RJ45)
	USB	1x USB 3.0 (Type-A) front • 2x USB 3.0 (Type-A)
	VIDEO	1x DVI-D (Resolution up to 1920x1200) or 1x RJ45 connector for RVL
ADD-ON INTERFACES (optional)	Position A (max 1)	1x RS232/422/485 (DB15M) + 1x USB 2.0 (Type-A) 1x RS232/422/485 (DB15M) isolated + 1x USB 2.0 (Type-A) 2x RS232 (DB9M) 2x USB 2.0 (Type-A)
POWER SUPPLY INPUT		24VDC (18+32VDC) isolated
POWER SUPPLY (optional)	UPS	UPS with external battery pack (Pb• 12V/2,5Ah) (separate mounting)
BATTERY		1x CR2032 Removable front access
O.S. CERTIFIED		Microsoft Windows 10 IoT Enterprise 2019/2016 64 bit Microsoft Windows 7 Pro/Ultimate 32/64 bit Microsoft Windows Embedded Standard 7E/7P 32/64 bit
OPERATING TEMPERATURE		0°C ÷ 50°C 0°C ÷ 45°C (24x7 HDD or Intel® Core™ i7 processor) 5°C ÷ 45°C (Standard HDD)
STORAGE TEMPERATURE		-10°C ÷ 60°C
OPERATING/STORAGE RELATIVE HUMIDITY		20% ÷ 90% RH (non-condensing)
APPROVALS		CE cULus Listed

# PB3400/3600 & BM3400/3600



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UBIQUITY INSIDE

UNIQO OPTIONAL

CODESYS OPTIONAL

FANLESS

RVL OPTIONAL

- Intel® Celeron®, Core™ i3, i5, i7 processors of Skylake and Kaby Lake generation
- RAM up to 32GB
- Built-in UPS with external battery pack (optional)
- Built-in superscapacitors  $\mu$ UPS, with 512kB MRAM for retentive data management (optional)
- PB3400/3600 available in S0, S1 and D2 version, with possibility to install additional interfaces, PCI/PCIe expansion slots and extractable drives slots for 2,5" SSDs/HDDs
- BM3400/3600 available in S0 and S2 versions, with the possibility to install additional interfaces and PCI/PCIe expansion slots, both with predisposition for extractable drawer kit for SSD/HDD: D0 (no kit), D1 (one kit) and D2 (two kits)
- Available with additional RVL (Remote Video Link) interface for remotation of the DVI-D and USB 2.0 signals up to 100m (optional)

## GALLERY



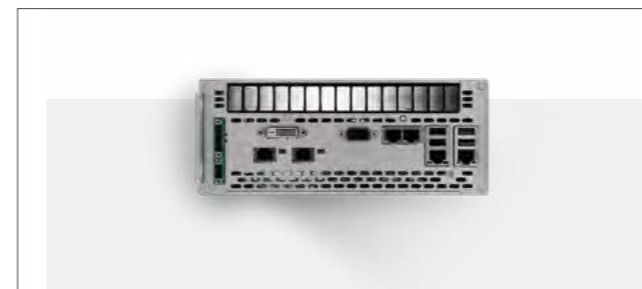
PB3400/3600 - (S0 Version)



PB3400/3600 - (S1 Version)



PB3400/3600 - (D2 Version)



BM3400/3600 - (S0 Version)



BM3400/3600 - (S2 Version)

## COMPARISON TABLE

	BM 3400/3600					
	S0			S2		
	D0	D1	D2	D0	D1	D2
ADD-ON INTERFACES (optional)	✓	✓	✓	✓	✓	✓
EXPANSION SLOTS PCI/PCIe	✗	✗	✗	2	2	2
INTERNAL INSTALLATION KIT for SSDs/HDDs 2,5" SATA III	1	1	1	1,2	1,2	1,2
EXTRACTABLE DRAWER KIT for SSDs/HDDs 2.5" SATA III	✗	1	2	✗	1	2

TECHNICAL DATA

	PB3400/3600	BM3400/3600	
<b>PROTECTION GRADE</b>	IP20		
<b>CASE</b>	<b>Installation</b>	Wall mounting	Book mounting
	<b>Material</b>	Zinc-coated skin pass steel	Aluminum alloy
<b>PROCESSOR (soldered on-board)</b>	<b>xx3400</b>	Intel® Celeron® G3900E 2.40GHz 64bit • 2 cores / 2 threads • 2MB Smart cache • 14nm Intel® Core™ i3-6100E 2.70GHz 64bit • 2 cores / 4 threads • 3MB Smart cache • 14nm Intel® Core™ i5-6440EQ 2.70GHz (3.40GHz Turbo) 64bit • 4 cores / 4 threads • 6MB Smart cache • 14nm Intel® Core™ i7-6820EQ 2.80GHz (3.50GHz Turbo) 64bit • 4 cores / 8 threads • 8MB Smart cache • 14nm	
	<b>xx3600</b>	Intel® Core™ i3-7100E 2.90GHz 64bit • 2 cores / 4 threads • 3MB Smart cache Intel® Core™ i5-7440EQ 2.90GHz (3.60GHz Turbo) 64bit • 4 cores / 4 threads • 6MB Smart cache Intel® Core™ i7-7820EQ 3.00GHz (3.70GHz Turbo) 64bit • 4 cores / 8 threads • 8MB Smart cache	
<b>CHIPSET</b>	<b>xx3400</b>	Intel® HM170 PCH (Platform Controller Hub) with integrated RAID controller	
	<b>xx3600</b>	Intel® HM175 PCH (Platform Controller Hub) with integrated RAID controller	
	<b>S2 version with 2x PCIe x4</b>	-	Intel® CM236 PCH (Platform Controller Hub) with integrated RAID controller
<b>VIDEO CONTROLLER</b>	<b>xx3400</b>	Intel® HD Graphics 510 integrated in Intel® Celeron™ processor • 350MHz/950MHz Intel® HD Graphics 530 integrated in Intel® Core™ i3 processor • 350MHz/950MHz Intel® HD Graphics 530 integrated in Intel® Core™ i5 and i7 processors • 350MHz/1GHz	
	<b>xx3600</b>	Intel® HD Graphics 630 integrated in Intel® Core™ i3 processor • 350MHz/950MHz Intel® HD Graphics 630 integrated in Intel® Core™ i5 and i7 processors • 350MHz/1GHz	
<b>WATCHDOG</b>	Programmable time period		
<b>TPM</b>	Intel® PTT (TPM integrated) • Discrete TPM 2.0 module (optional)		
<b>SYSTEM MEMORY RAM</b>	4GB (1x 4GB SODIMM DDR4 module) 8GB (2x 4GB SODIMM DDR4 module) 16GB (2x 8GB SODIMM DDR4 module) 32GB (2x 16GB SODIMM DDR4 module)		
<b>MASS STORAGE</b>	<b>Cfast</b>	1x bootable CFast SATA III slot onboard with external access (up to 240GB)	
	<b>SSD mSATA</b>	1x onboard connector for direct insertion of SSD mSATA SATA III (up to 960 GB)	
	<b>SSD/HDD</b>	1x onboard connector for SSD/HDD 2.5" SATA III with internal installation kit	1x or 2x onboard connectors for SSDs/HDDs 2.5" SATA III with internal installation kit (2x not available for S0 version)
<b>EXTRACTABLE MASS STORAGE</b>	<b>only D1 version</b>	-	1x extractable SSD/HDD 2.5" SATA III unit
	<b>only D2 version</b>	2x extractable SSDs/HDDs 2.5" SATA III units	
<b>RAID</b>	Raid 0, 1		
<b>INTERFACES</b>	<b>LAN</b>	4x Gigabit Ethernet (RJ45)	
	<b>USB</b>	3x USB 3.0 (Type-A) • 2x USB 2.0 (Type-A)	2x USB 3.0 (Type-A) • 2x USB 2.0 (Type-A) • 1x USB 3.0 (Type-A) front
	<b>SERIAL</b>	1x RS232 (DB9M)	
	<b>VIDEO</b>	1x DVI-D (Resolution up to 1920x1080)	
<b>ADD-ON INTERFACES (optional)</b>	<b>Position A (max 1)</b>	1x RS232/422/485 (DB15M) + 1x USB 2.0 (Type-A) 1x RS232/422/485 (DB15M) isolated + 1x USB 2.0 (Type-A) 2x RS232 (DB9M) 2x USB 2.0 (Type-A)	
	<b>Position B (max 1)</b>	1x or 2x RJ45 connectors for RVL 1x Gigabit Ethernet (RJ45) 1x Wi-Fi module (IEEE 802.11 a/b/g/n/ac, 2.4GHz/5GHz • Bluetooth 4.2) <sup>1</sup> and/or 1x Cellular module (worldwide LTE Cat 4, GSM/GPRS, UMTS/HSPA coverage) <sup>1</sup>	1x or 2x RJ45 connectors for RVL (2x not available for S0 D2 version) 2x DisplayPort++ V1.2
<b>EXPANSION SLOTS</b>	<b>only S1 version</b>	1x PCI half-length or 1x PCIe x4 half-length, on riser card, max 5W	-
	<b>only S2 version</b>	-	1x PCIe x4 half-length + 1x PCI half-length or 2x PCIe x4 half-length, on riser card, max 10W total
<b>POWER SUPPLY INPUT</b>	24VDC (18÷32VDC) isolated		

TECHNICAL DATA

	PB3400/3600	BM3400/3600	
<b>POWER SUPPLY (optional)</b>	<b>UPS</b>	UPS with external battery pack (Pb • 12V/2.5Ah) (backside or separate mounting)	UPS with external battery pack (Pb • 12V/2.5Ah) (separate mounting)
	<b>UPS + 512kB MRAM</b>	-	UPS with external battery pack (Pb • 12V/2.5Ah) + 512kB MRAM (separate mounting)
	<b>µUPS + 512kB MRAM</b>	Supercapacitors µUPS + 512kB MRAM	
	<b>ATX</b>	Kit for ATX mode power supply (push button, internal cable and connector for remote control)	-
<b>BATTERY</b>	1x CR2032 Internal access		1x CR2032 Removable front access
<b>O.S. CERTIFIED</b>	<b>xx3400</b>	Microsoft Windows 10 IoT Enterprise 2019/2016 64 bit Microsoft Windows 7 Pro/Ultimate 32/64 bit Microsoft Windows Embedded Standard 7E/7P 32/64 bit	
	<b>xx3600</b>	Microsoft Windows 10 IoT Enterprise 2019/2016 64 bit	
<b>OPERATING TEMPERATURE</b>	<b>without forced ventilation</b>	0°C ÷ 50°C 0°C ÷ 45°C (24x7 HDD or Core i7 processor) 5°C ÷ 45°C (Standard HDD)	
	<b>with forced ventilation (only S2 version)</b>	-	0°C ÷ 50°C 0°C ÷ 50°C (24x7 HDD or Core i7 processor) 5°C ÷ 45°C (Standard HDD)
<b>STORAGE TEMPERATURE</b>	-10°C ÷ 60°C		
<b>OPERATING/STORAGE RELATIVE HUMIDITY</b>	20% ÷ 90% RH (non-condensing)		
<b>FORCED VENTILATION (optional)</b>	-	Forced ventilation (2x tachometric fans 40x40x20 mm), required to ensure: - operating temperature 0°C ÷ 50°C (24x7 HDD or Core i7 processor) - use of expansion cards, max 20W total	
<b>APPROVALS</b>	CE cULus Listed		

1. Wi-Fi and Cellular modules cannot be used if CODESYS SoftPLC control software is installed on the system.

# PB3500 & BM3500



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- Intel® Celeron®, Core™ i3, i5, i7 processor of Kaby Lake generation
- RAM up to 16GB
- Built-in UPS with external battery pack (optional)
- Built-in supercapacitors μUPS, with 512kB MRAM for retentive data management (optional)
- Available in SL version with reduced depth, S0 version with the possibility to install additional interfaces and S1 version with one PCI or PCIe expansion slot
- Available in RVL version (BM3500 RVL) or with additional RVL (Remote Video Link) interface (PB3500) for the remotation of the DVI-D and USB 2.0 signals up to 100m



UBIQUITY INSIDE

UNICO OPTIONAL

CODESYS OPTIONAL

FANLESS

RVL OPTIONAL

## GALLERY



PB3500 - (SL Version)



PB3500 - (S0 Version)

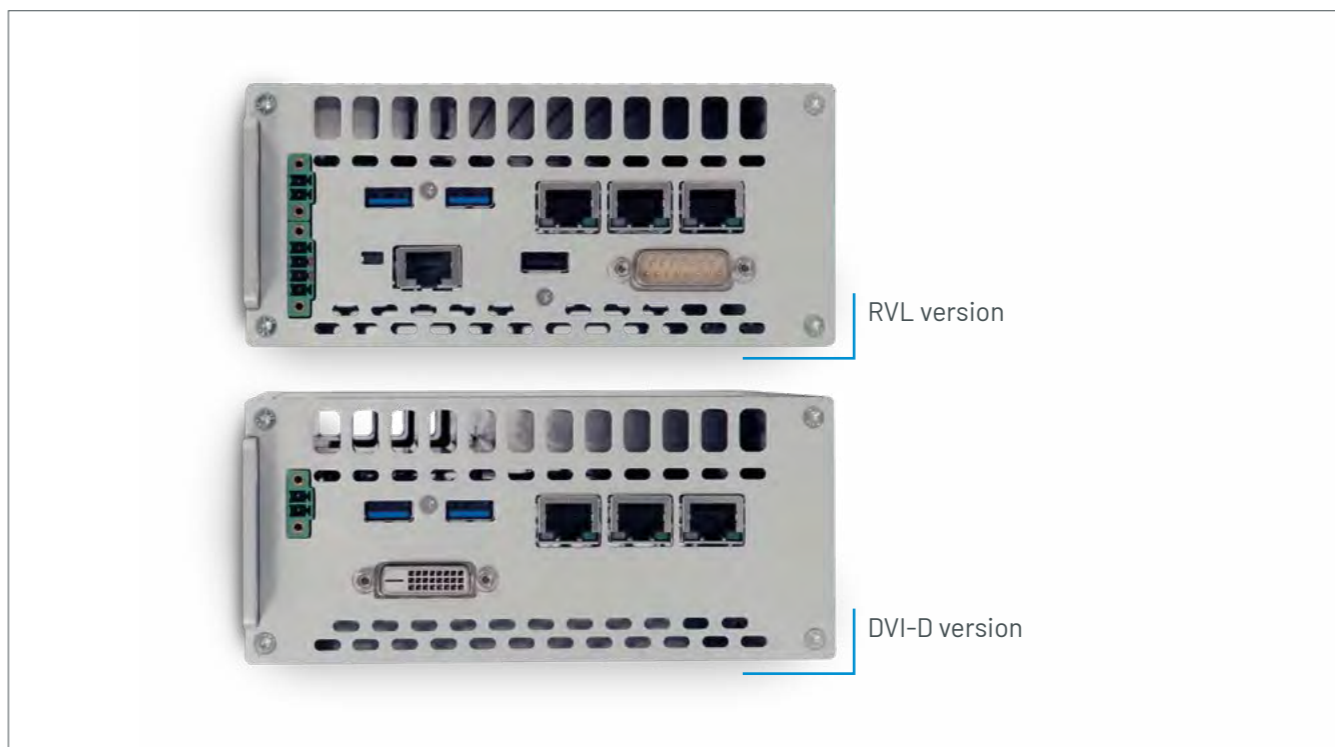


PB3500 - (S1 Version)



BM3500

## VERSIONS



RVL version

DVI-D version

TECHNICAL DATA

	PB3500	BM3500	
<b>PROTECTION GRADE</b>	IP20		
<b>CASE</b>	<b>Installation</b>	Wall mounting	Book mounting
	<b>Material</b>	Zinc coated stainless steel	Aluminum alloy
<b>PROCESSOR (soldered on-board)</b>	Intel® Celeron® 3965U 2.20GHz 64bit • 2 cores / 2 threads • 2MB Smart cache • 14nm Intel® Core™ i3-7100U 2.40GHz 64bit • 2 cores / 4 threads • 3MB Smart cache • 14nm Intel® Core™ i5-7300U 2.60GHz (3.50GHz Turbo) 64bit • 2 cores / 4 threads • 3MB Smart cache • 14nm Intel® Core™ i7-7600U 2.80GHz (3.90GHz Turbo) 64bit • 2 cores / 4 threads • 4MB Smart cache • 14nm		
<b>CHIPSET</b>	Intel® Kaby Lake U PCH (Platform Controller Hub) • Included into processor chip (SoC)		
<b>VIDEO CONTROLLER</b>	Intel® HD Graphics 610 integrated in Intel® Celeron® processor • 300MHz/900MHz Intel® HD Graphics 620 integrated in Intel® Core™ i3 processor • 300MHz/1GHz Intel® HD Graphics 620 integrated in Intel® Core™ i5 processor • 300MHz/1.10GHz Intel® HD Graphics 620 integrated in Intel® Core™ i7 processor • 300MHz/1.15GHz		
<b>WATCHDOG</b>	Programmable time period		
<b>TPM</b>	Discrete version only for S0/S1 versions and BM Intel® PTT (TPM integrated) • Discrete TPM 2.0 module (optional)		
<b>SYSTEM MEMORY RAM</b>	4GB or 8GB or 16GB (1x SODIMM DDR4 module)		
<b>MASS STORAGE</b>	<b>Cfast</b>	1x bootable CFast SATA III slot onboard with external access (up to 240GB)	
	<b>SSD mSATA</b>	-	1x onboard connector for direct insertion of SSD mSATA SATA III
	<b>SSD M.2</b>	1x onboard connector for direct insertion of M.2 2280 NVMe PCIe x2 SSD (up to 512GB) or M.2 2280 NVMe PCIe x4 SSD (up to 1TB) <sup>1</sup> or M.2 2242 SATA III SSD (up to 480GB)	-
	<b>SSD/HDD only S0/S1 versions and BM</b>	1x onboard connector for SSD/HDD 2.5" SATA III with internal installation kit	
<b>INTERFACES</b>	<b>LAN</b>	3x Gigabit Ethernet (RJ45)	
	<b>USB</b>	4x USB 3.0 (Type-A)	1x USB 3.0 (Type-A) front • 2x USB 3.0 (Type-A) top
	<b>SERIAL</b>	1x RS232 (DB9M)	-
	<b>VIDEO</b>	1x DisplayPort++ V1.2	1x DVI-D (Resolution up to 1920x1200) or 1x RJ45 connector for RVL
<b>ADD-ON INTERFACES (optional) not available for SL version</b>	<b>Position A (max 1)</b>	1x RS232/422/485 (DB15M) + 1x USB 2.0 (Type-A) 1x RS232/422/485 (DB15M) isolated + 1x USB 2.0 (Type-A) 2x RS232 (DB9M) 2x USB 2.0 (Type-A)	
	<b>Position B (max 1)</b>	1x Gigabit Ethernet (RJ45) 1x DVI-D (Resolution up to 1900x1200) 1x RJ45 connector for RVL 1x Wi-Fi module (IEEE 802.11 a/b/g/n/ac, 2.4GHz/5GHz • Bluetooth 4.2) and/or 1x Cellular module (worldwide LTE Cat 4, GSM/GPRS, UMTS/HSPA coverage)	-
<b>EXPANSION SLOTS</b>	<b>only S1 version</b>	1x PCI half-length or 1x PCIe x4 half-length, on riser card, max 5W	-
<b>POWER SUPPLY INPUT</b>	24VDC (18+32VDC) isolated		
<b>POWER SUPPLY (optional)</b>	<b>UPS</b>	UPS with external battery pack (Pb • 12V/2.5A) (backside or separate mounting)	UPS with external battery pack (Pb • 12V/2.5Ah) (separate mounting)
	<b>UPS + 512kB MRAM</b>	-	UPS with external battery pack (Pb • 12V/2.5Ah) + 512kB MRAM (separate mounting)
	<b>μUPS + 512kB MRAM</b>	-	Supercapacitors μUPS + 512kB MRAM
	<b>ATX only S0/S1 versions</b>	Kit for ATX mode power supply (push button, internal cable and connector for remote control)	

TECHNICAL DATA

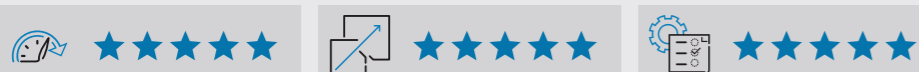
	PB3500	BM3500
<b>BATTERY</b>	1x CR2032 internal access	1x CR2032 removable front access
<b>O.S. CERTIFIED</b>	Microsoft Windows 10 IoT Enterprise 2019/2016 64 bit	
<b>OPERATING TEMPERATURE</b>	0°C + 50°C 0°C + 45°C (24x7 HDD or Intel® Core™ i7 processor) 5°C + 45°C (Standard HDD)	
<b>STORAGE TEMPERATURE</b>	-10°C + 60°C	
<b>OPERATING/STORAGE RELATIVE HUMIDITY</b>	20% + 90% RH (non-condensing)	
<b>APPROVALS</b>	CE cULus Listed	

1. The M.2 NVMe PCIe x4 SSDs show actual performance that differs from the manufacturer's claims, as they are driven via 2 lanes (socket M.2 PCIe x2). Data transfer rates are about half of the declared value (comparable to M.2 NVMe PCIe x2 SSDs).

# PB5400/5600



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- Intel® Celeron®, Core™ i3, i5, i7 processors of Skylake and Kaby Lake generation
- RAM up to 32GB
- Available in S0 version with the possibility to install additional interfaces, S1 version with one PCIe expansion slot and S3 version with three PCIe expansion slots
- Available with additional RVL interface for remotation of the DVI-D and USB 2.0 signals up to 100m (optional)
- Available with 115/230VAC power supply (optional)

## GALLERY



PB5400/5600 - (S0 Version) - 24VDC



PB5400/5600 - (S0 Version) - 230VAC



PB5400/5600 - (S1 Version) - 24VDC



PB5400/5600 - (S1 Version) - 230VAC



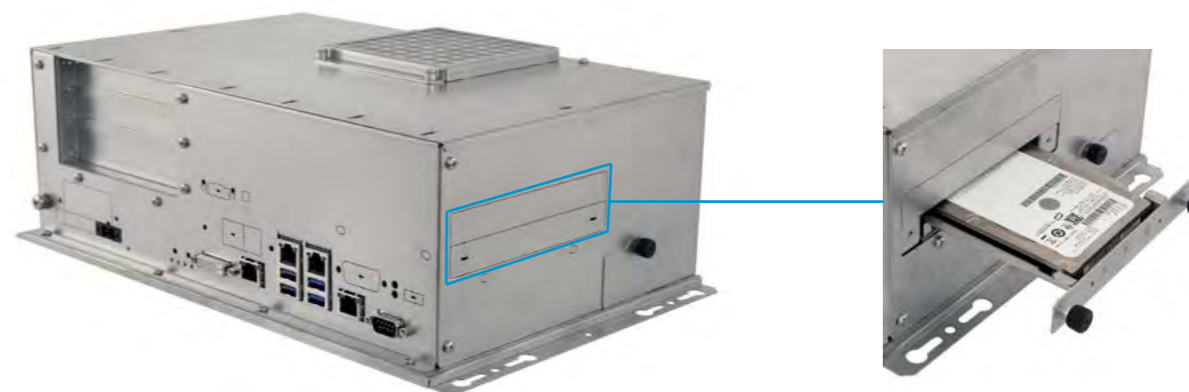
PB5400-5600 - (S3 Version) - 24VDC



PB5400-5600 - (S3 Version) - 230VAC

## DETAIL - EXTRACTABLE DRIVES SLOT

Extractable drives slot available only for S1 and S3 versions



TECHNICAL DATA

		PB5400/5600
<b>PROTECTION GRADE</b>		IP20
<b>CASE</b>	<b>Installation</b>	Wall mounting
	<b>Material</b>	Zinc-coated skin pass steel
<b>PROCESSOR (soldered on-board)</b>	<b>PB5400</b>	Intel® Core™ i3-6100 3.70GHz 64bit • 2 cores / 4 threads • 3MB Smart cache • 14nm Intel® Core™ i5-6500 3.20GHz (3.60GHz Turbo) 64bit • 4 cores / 4 threads • 6MB Smart cache • 14nm Intel® Core™ i7-6700 3.40GHz (4.00GHz Turbo) 64bit • 4 cores / 8 threads • 8MB Smart cache • 14nm
	<b>PB5600</b>	Intel® Celeron® G3930E 2.90GHz 64bit • 2 cores / 2 threads • 2MB Smart cache • 14nm Intel® Core™ i3-7101E 3.90GHz 64bit • 2 cores / 4 threads • 3MB Smart cache • 14nm Intel® Core™ i5-7500 3.40GHz (3.80GHz Turbo) 64bit • 4 cores / 4 threads • 6MB Smart cache • 14nm Intel® Core™ i7-7700 3.60GHz (4.20GHz Turbo) 64bit • 4 cores / 8 threads • 8MB Smart cache • 14nm
<b>CHIPSET</b>		Intel® C236 PCH (Platform Controller Hub) with integrated RAID controller
<b>VIDEO CONTROLLER</b>	<b>PB5400</b>	Intel® HD Graphics 530 integrated in Intel® Core® i3 and i5 processors • 350MHz/1.05GHz Intel® HD Graphics 530 integrated in Intel® Core® i7 processor • 350MHz/1.15GHz
	<b>PB5600</b>	Intel® HD Graphics 610 integrated in Intel® Celeron® processor • 350MHz/1GHz Intel® HD Graphics 630 integrated in Intel® Core® i3 and i5 processors • 350MHz/1.10GHz Intel® HD Graphics 630 integrated in Intel® Core® i7 processor • 350MHz/1.15GHz
<b>WATCHDOG</b>		Programmable time period
<b>TPM</b>		Intel® PTT (TPM integrated) • Discrete TPM 2.0 module (optional)
<b>SYSTEM MEMORY RAM (soldered)</b>		4GB (1x 4GB SODIMM DDR4 module) 8GB (2x 4GB SODIMM DDR4 module) 16GB (2x 8GB SODIMM DDR4 module) 32GB (2x 16GB SODIMM DDR4 module)
<b>MASS STORAGE</b>	<b>Cfast</b>	1x bootable CFast SATA III slot onboard with external access (up to 240GB)
	<b>SSD M.2</b>	1x onboard connector for direct insertion of M.2 2280 NVMe PCIe x4 SSD (up to 512GB) or M.2 2242 SATA III SSD (up to 480GB)
	<b>SSD/HDD</b>	2x onboard connectors for SSDs/HDDs 2.5" SATA III with internal installation kit
<b>EXTRACTABLE MASS STORAGE</b>	<b>S0/S1/S3 versions</b>	1x extractable SSD/HDD 2.5" SATA III unit
	<b>only S1/S3 versions</b>	2x extractable SSDs/HDDs 2.5" SATA III units
<b>RAID</b>		Raid 0, 1
<b>INTERFACES</b>	<b>LAN</b>	4x Gigabit Ethernet (RJ45)
	<b>USB</b>	4x USB 3.0 (Type-A)
	<b>SERIAL</b>	1x RS232 (DB9M)
	<b>VIDEO</b>	1x DVI-D (Resolution up to 1920x1080)
<b>ADD-ON INTERFACES (optional)</b>	<b>Position A (max 1)</b>	1x RS232/422/485 (DB15M) + 1x USB 2.0 (Type-A) 1x RS232/422/485 (DB15M) isolated + 1x USB 2.0 (Type-A) 2x RS232 (DB9M) 2x USB 2.0 (Type-A)
	<b>Position B (max 1)</b>	1x Gigabit Ethernet (RJ45) 1x or 2x RJ45 connectors for RVL 2x DisplayPort++ V1.2 1x Wi-Fi module (IEEE 802.11 a/b/g/n/ac, 2.4GHz/5GHz • Bluetooth 4.2) and/or 1x Cellular module (worldwide LTE Cat 4, GSM/GPRS, UMTS/HSPA coverage)
<b>EXPANSION SLOTS</b>	<b>only S1 version</b>	1x PCIe x16 half-length, on riser card, max 50W
	<b>only S3 version</b>	1x PCIe x16 half-length + 1x PCIe x4 half-length + 1x PCIe x1 half-length or 2x PCIe x8 half-length + 1x PCIe x4 half-length, on riser card, max 50W total
<b>POWER SUPPLY INPUT</b>		24VDC (18+32VDC) isolated
	<b>optional</b>	115V/230VAC (85+264VAC) isolated, autoranging
<b>POWER SUPPLY (optional)</b>	<b>ATX</b>	Kit for ATX mode power supply (push button, internal cable and connector for remote control)
<b>BATTERY</b>		1x CR2032 Internal access

TECHNICAL DATA

		PB5400/5600
<b>O.S. CERTIFIED</b>	<b>PB5400</b>	Microsoft Windows 10 IoT Enterprise 2019/2016 64 bit Microsoft Windows 7 Pro/Ultimate 64 bit Microsoft Windows Embedded Standard 7E/7P 64 bit Microsoft Windows Server Embedded Standard 2019 R2 64 bit
	<b>PB5600</b>	Microsoft Windows 10 IoT Enterprise 2019/2016 64 bit Microsoft Windows Server Embedded Standard 2019 R2 64 bit
<b>OPERATING TEMPERATURE</b>		0°C + 50°C 0°C ÷ 45°C (24x7 HDD or Intel® Core™ i7 processor) 5°C ÷ 45°C (Standard HDD)
<b>STORAGE TEMPERATURE</b>		-10°C ÷ 60°C
<b>OPERATING/STORAGE RELATIVE HUMIDITY</b>		20% + 90% RH (non-condensing)
<b>APPROVALS</b>		CE cULus Listed



# COMPARISON TABLE



	PB2150 & BM2150	PB2200 & BM2200	PB2250 & BM2250	BM3300	PB3400 & BM3400	PB3500 & BM3500	PB3600 & BM3600	PB5400	PB5600
<b>FANLESS</b>	✓	✓	✓	✓	✓	✓	✓	✗	✗
<b>INSTALLATION</b>	PB - Wall mounting BM - Book/DIN mounting	PB - Wall mounting BM - Book mounting	PB - Wall mounting BM - Book/DIN mounting	Book mounting	PB - Wall mounting BM - Book mounting	PB - Wall mounting BM - Book mounting	PB - Wall mounting BM - Book mounting	Wall mounting	Wall mounting
<b>PROCESSORS</b>	<b>Model</b>	Intel® Celeron® J1900	Intel® Celeron® J1900	Intel Atom® x5-E3930 Intel Atom® x7-E3950	Intel® Celeron® 3955U Intel® Core™ i3-6100U Intel® Core™ i5-6300U Intel® Core™ i7-6600U	Intel® Celeron® G3900E Intel® Core™ i3-6100E Intel® Core™ i5-6440EQ Intel® Core™ i7-6820EQ	Intel® Celeron® 3965U Intel® Core™ i3-7100U Intel® Core™ i5-7300U Intel® Core™ i7-7600U	Intel® Core™ i3-6100 Intel® Core™ i5-6500 Intel® Core™ i7-6700	Intel® Celeron® G3930E Intel® Core™ i3-7101E Intel® Core™ i3-7101E Intel® Core™ i7-7700
	<b>Generation</b>	Intel® Bay Trail	Intel® Bay Trail	Intel® Apollo Lake	Intel® Skylake	Intel® Skylake	Intel® Kaby Lake U	Intel® Kaby Lake	Intel® Skylake
<b>SYSTEM MEMORY</b>	Up to 8GB	Up to 8GB	Up to 8GB	Up to 16GB	Up to 32GB	Up to 16GB	Up to 32GB	Up to 32GB	Up to 32GB
<b>INTERFACES</b>	<b>LAN</b>	2x RJ45	2x RJ45	2x RJ45	3x RJ45	4x RJ45	3x RJ45	4x RJ45	4x RJ45
	<b>USB</b>	1x USB 3.0 • 1x USB 2.0	2x USB 2.0 • 1x USB 3.0	3x USB 3.0	1x USB 3.0 • 2x USB 3.0	3x USB 3.0 • 2x USB 2.0	4x USB 3.0	3x USB 3.0 • 2x USB 2.0	4x USB 3.0
	<b>Serial</b>	-	1x RS232 (DB9M) (PB only)	-	-	1x RS232 (DB9M)	1x RS232 (DB9M) (PB only)	1x RS232 (DB9M)	1x RS232 (DB9M)
	<b>Video</b>	1x DVI-D	1x DVI-I	1x DisplayPort++ V1.2	1x DVI-D	1x DVI-D	1x DisplayPort++ V1.2	1x DVI-D	1x DVI-D
<b>EXPANSION SLOTS PCI/PCIe</b>	-	Up to 1 (PB only)	-	-	PB - Up to 1 BM - Up to 2	Up to 1 (PB only)	PB - Up to 1 BM - Up to 2	Up to 3	Up to 3
<b>INTERNAL SSD/HDD</b>	-	Up to 1	-	Up to 1	PB - Up to 1 BM - Up to 2	Up to 1	PB - Up to 1 BM - Up to 2	Up to 2	Up to 2
<b>EXTRACTABLE SSD/HDD</b>	-	-	-	-	Up to 2	-	Up to 2	Up to 3	Up to 3
<b>POWER SUPPLY INPUT</b>	24VDC	24VDC	24VDC	24VDC	24VDC	24VDC	24VDC	24VDC 115V/230VAC	24VDC 115V/230VAC
<b>OPERATING SYSTEMS</b>	Microsoft Windows 7 Microsoft Windows Embedded Standard 7 Microsoft Windows 10 IoT Enterprise LTSC	Microsoft Windows 7 Microsoft Windows Embedded Standard 7 Microsoft Windows 10 IoT Enterprise LTSC	Microsoft Windows 10 IoT Enterprise LTSC	Microsoft Windows 7 Microsoft Windows Embedded Standard 7 Microsoft Windows 10 IoT Enterprise LTSC	Microsoft Windows 7 Microsoft Windows Embedded Standard 7 Microsoft Windows 10 IoT Enterprise LTSC	Microsoft Windows 10 IoT Enterprise LTSC	Microsoft Windows 10 IoT Enterprise LTSC	Microsoft Windows 7 Microsoft Windows Embedded Standard 7 Microsoft Windows Server Embedded Standard Microsoft Windows 10 IoT Enterprise LTSC	Microsoft Windows 10 IoT Enterprise LTSC Microsoft Windows Server Embedded Standard
<b>PAC VERSION *</b>	✗	✓	✗	✗	✓	✗	✓	✗	✗
<b>CERTIFICATIONS</b>									

\* with UPS + 512kB MRAM for retentive data management and Codesys software



# ULTRA-COMPACT IPCS

HIGH CAPACITIES OF PROCESSING  
COMPACTNESS  
ERGONOMIC DESIGN



# BM1XY FAMILY



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UBIQUITY INSIDE

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FANLESS



- Ultra-compact design and anodized aluminum chassis
- Intel® Atom™ x5, x7 processors of SoC Apollo Lake generation
- RAM up to 8GB
- Available with 4 ports Gigabit Ethernet switch (only BM121 and BM131)
- Available with Wi-Fi/Bluetooth interfaces and 4G Global modem (only BM122, BM130 and BM131)
- DIN rail mounting available
- Wall mounting available (only BM100)
- Built-in UPS with external battery pack (optional)

## VERSIONS



BM100



BM110



BM120



BM121



BM122



BM130



BM131

TECHNICAL DATA

		BM100	BM110	BM120	BM121	BM122	BM130	BM131	
<b>PROTECTION GRADE</b>	<b>IP rating</b>	IP20							
<b>CASE</b>	<b>Installation</b>	Book / DIN rail / Wall Mounting	Book / DIN rail Mounting						
	<b>Material</b>	Anodized aluminum alloy							
	<b>Dimensions (w/o mounting)</b>	100x100x39,4mm	100x100x58,4mm	100x100x79mm		100x100x100mm			
<b>PROCESSOR (soldered on-board)</b>		Intel Atom® x5-E3930 1.3GHz (1.8 GHz Burst) • 2 cores / 2 threads • 2MB L2 cache • 14nm Intel Atom® x7-E3950 1.6GHz (2.0 GHz Burst) • 4 cores / 4 threads • 2MB L2 cache • 14nm							
<b>CHIPSET</b>		Intel® Apollo Lake • Included into processor chip (SoC)							
<b>VIDEO CONTROLLER</b>		Intel® HD Graphics 500 integrated in Intel Atom® x5-E3930 processor • 400MHz/550MHz Intel® HD Graphics 505 integrated in Intel Atom® x7-E3950 processor • 500MHz/650MHz							
<b>TPM</b>		Intel® PTT (TPM integrated)							
<b>SYSTEM MEMORY RAM (soldered)</b>	<b>with x5-E3930</b>	2GB or 4GB SO-DIMM LP-DDR4 module	4GB SODIMM LP-DDR4 module						
	<b>with x7-E3950</b>	4GB or 8GB SO-DIMM LP-DDR4 module	4GB or 8GB SODIMM LP-DDR4 module						
<b>MASS STORAGE</b>	<b>SSD M.2</b>	1x onboard connector for direct insertion of M.2 2242 SATA III SSD (up to 480GB)							
<b>INTERFACES</b>	<b>LAN</b>	2x Gigabit Ethernet (RJ45)	4x Gigabit Ethernet (RJ45)	2x Gigabit Ethernet (RJ45)	4x Gigabit Ethernet (RJ45)	2x Gigabit Ethernet (RJ45)			
	<b>LAN Switch</b>	-		1x Unmanaged Gigabit Switch (4x RJ45)	-		1x Unmanaged Gigabit Switch (4x RJ45)		
	<b>USB</b>	2x USB 3.0 (Type-A)		4x USB 3.0 (Type-A)	2x USB 3.0 (Type-A)	4x USB 3.0 (Type-A)			
	<b>SERIAL</b>	-		1x RS232/422/485 (DB9M)	-		1x RS232/422/485 (DB9M)	-	
	<b>VIDEO</b>	1x DisplayPort++ V1.2							
	<b>DIGITAL INPUT</b>	-	2x Digital Input (0÷24V isolation 500V)						
	<b>DIGITAL OUTPUT</b>	-	2x Digital Output (N.O. max 200mA 24VDC)						
	<b>Wi-Fi Module</b>	<b>Model</b>	-		Bointec DPE109A (mPCIe interface)				
<b>Standard</b>		-		IEEE 802.11 a/b/g/n/ac, 2.4GHz/5GHz • Bluetooth 4.2					
<b>Security</b>		-		WEP 64/128bit, WPA, WPA2, WPS, 802.1x					
<b>RF Output Power</b>		-		2.4GHz (802.11b): 18 dBm ± 2dB 2.4GHz (802.11n): 14 dBm ± 2dB 5GHz (802.11a): 13 dBm ± 2dB 5GHz (802.11ac): 10 dBm ± 2dB					
<b>RF sensitivity</b>		-		11a, 20MHz: - MCS=0 PER @ -90 dBm, typical 11n, 20MHz: - MCS=0 PER @ -90 dBm, typical 11b, 20MHz@8%PER: - 11Mbps PER @ -91 dBm, typical <0,1% BER at -70dBm (Bluetooth)					
<b>Feature</b>		-		Client mode / Access point mode					
<b>Antenna</b>		-		2x RP-SMA Female connector					

TECHNICAL DATA

		BM100	BM110	BM120	BM121	BM122	BM130	BM131
<b>Cellulare Module</b>	<b>Model</b>	-		SIMCom SIM7600G-H (mPCIe interface)				
	<b>Frequency Bands</b>	-		FDD-LTE: B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28/B66 TDD-LTE: B38/B39/B40/B41 UMTS/HSDPA/HSPA+: B1/B2/B4/B5/B6/B8/B19 GSM/GPRS/EDGE: B2/B3/B5/B8				
	<b>Data Transfer</b>	-		up to 150Mbps (Download) / 50Mbps (Upload)				
	<b>SIM</b>	-		1x Micro SIM card socket, push-push type				
	<b>Antenna</b>	-		2x SMA Female connector				
<b>POWER SUPPLY INPUT</b>		24VDC (18÷32VDC) isolated						
<b>POWER SUPPLY (optional)</b>	<b>UPS</b>	-	UPS with external battery pack (NiMH • 12V/2,5Ah) (separate mounting)					
<b>BATTERY</b>		1x CR2032 Internal access						
<b>O.S. CERTIFIED</b>		Microsoft Windows 10 IoT Enterprise 2016/2019 64 bit						
<b>OPERATING TEMPERATURE</b>	<b>with x5-E3930</b>	0°C ÷ 55°C		0°C ÷ 50°C				
	<b>with x7-E3950</b>	0°C ÷ 50°C						
<b>STORAGE TEMPERATURE</b>		-10°C ÷ 60°C						
<b>OPERATING/STORAGE RELATIVE HUMIDITY</b>		20% ÷ 90% RH (non-condensing)						
<b>APPROVALS</b>		CE cULus Listed						



# ARM/VESA MOUNTING IPCS

HIGH PERFORMANCE  
WIDE CONFIGURABILITY AND  
EXPANDABILITY  
ELEGANT DESIGN  
EASE OF INSTALLATION



# VK3500 SERIES



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PRODUCT SHEET



UBIQUITY INSIDE

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RVL OPTIONAL

**BUTTON AREA**  
PAG. 118

**ACCESSORI**  
PAG. 122

- VESA 75/100 or top/bottom arm mounting
- Available in landscape and portrait version
- Powder coated die-cast aluminum chassis with anti-scratch treatment
- 15.6", 18.5", 21.5" and 24" TFT LCDs in Wide aspect ratio for landscape version (VK3500 and VK3500-BA)
- 21,5" and 24" TFT LCDs in Wide aspect ratio for portrait version (VK3500P-BA)
- Front panels with minimized aluminum and glass True Flat (TFM) frame with multitouch projected capacitive touchscreen
- Full IP65 protection grade
- Available with configurable Button Area for the installation of Ø22 hard-wired elements (VK3500-BA and VK3500P-BA)
- Celeron®, Core™ processors of Kaby Lake generation
- Available with RVL technology for the remotation of the DVI-D and USB 2.0 signals up to 100m (optional)

## TECHNICAL DATA

	VK3500-BA-TFM	VK3500-TFM	VK3500P-BA-TFM
<b>LED BACKLIGHT TFT LCD</b>	15.6" W - 1366x768 15.6" W - 1920x1080 18.5" W - 1366x768 18.5" W - 1920x1080 21.5" W - 1920x1080 24"W - 1920x1080		21.5" W - 1920x1080 24"W - 1920x1080
<b>ORIENTATION</b>	Landscape		Portrait
<b>TOUCHSCREEN</b>	P-CAP Multitouch		
<b>FRONT PANEL</b>	<b>Material</b> True Flat Aluminum		
<b>PROTECTION GRADE</b>	Full IP65		
<b>CASE</b>	<b>Installation</b> VESA 75/100 or pole/suspension arm mounting system compatible with RITTAL CP40/ROLEC TARAPLUS/HASEKE ULT KUPPLUNG 48		
	<b>Material</b> Aluminum alloy AN AB46400		
	<b>Color</b> Anti-scratchable painted - RAL 9006		
	<b>Accessories</b> Side handles, perimetral handle, keyboard holder kit		
<b>BUTTON AREA (optional)</b>	See dedicated section	-	See dedicated section
<b>PROCESSOR (soldered on-board)</b>	Intel® Celeron™ 3965U 2.20GHz • 64bit • 2 cores / 2 threads • 2MB Smart cache • 14nm Intel® Core™ i3-7100U 2.40GHz • 64bit • 2 cores / 4 threads • 3MB Smart cache • 14nm Intel® Core™ i5-7300U 2.60GHz (3.50GHz Turbo) • 64bit • 2 cores / 4 threads • 3MB Smart cache • 14nm Intel® Core™ i7-7600U 2.80GHz (3.90GHz Turbo) • 64bit • 2 cores / 4 threads • 4MB Smart cache • 14nm		
<b>CHIPSET</b>	Intel® Kaby Lake PCH-LP (Platform Controller Hub - Low Power) • Included into processor chip (SoC)		
<b>VIDEO CONTROLLER</b>	Intel® HD Graphics 610 integrated in Celeron™ 3965U • 300MHz/900MHz Intel® HD Graphics 620 integrated in Core™ i3 processors • 300MHz/1.00GHz Intel® HD Graphics 620 integrated in Core™ i5 processors • 300MHz/1.10GHz Intel® HD Graphics 620 integrated in Core™ i7 processor • 300MHz/1.15GHz DirectX 12 and OpenGL 4.5 support		
<b>WATCHDOG</b>	Programmable time period		
<b>TPM</b>	Intel® PTT (TPM integrated)		
<b>SYSTEM MEMORY RAM</b>	4GB or 8GB or 16GB (1 x SODIMM DDR4 module)		
<b>MASS STORAGE</b>	<b>CFast</b>	1x bootable CFast SATA III slot onboard with external access (up to 240GB)	
	<b>M.2 SSD</b>	1x onboard connector for direct insertion of M.2 2280 NVMe PCIe x2 SSD (up to 512GB) or M.2 2280 NVMe PCIe x4 SSD (up to 1TB) <sup>1</sup>	
<b>INTERFACES</b>	<b>LAN</b>	3x Gigabit Ethernet (RJ45)	
	<b>USB</b>	3x USB 3.0 (Type-A) • 1x USB 3.0 (Type-A) rear access with protection cap	
	<b>VIDEO (optional)</b>	1x DisplayPort++ V1.2 or 1x RJ45 connector for RVL	
<b>ADD-ON INTERFACES (optional)</b>	<b>Position A (max 1)</b>	1 x RS232/422/485 (DB15M) 1 x RS232/422/485 (DB15M) isolated 1 x Gigabit Ethernet (RJ45)	
<b>CONNECTIVITY (optional)</b>	1x Wi-Fi module (IEEE 802.11 a/b/g/n/ac, 2.4GHz/5GHz • Bluetooth 5.1)		
<b>POWER SUPPLY INPUT</b>	24VDC (18+32VDC) isolated		
<b>POWER SUPPLY (optional)</b>	<b>ATX</b>	Kit for ATX mode power supply (internal cable and push button on button area)	
<b>BATTERY</b>	1x CR2032 Removable front access		
<b>O.S. CERTIFIED</b>	Microsoft Windows 10 IoT Enterprise 2016/2019 64bit		
<b>OPERATING TEMPERATURE</b>	0°C + 50°C		
<b>STORAGE TEMPERATURE</b>	-10°C + 60°C		
<b>OPERATING/STORAGE RELATIVE HUMIDITY</b>	20% + 90% RH (non-condensing)		
<b>APPROVALS</b>	CE cULus Listed		

1. The M.2 NVMe PCIe x4 SSDs show actual performance that differs from the manufacturer's claims, as they are driven via 2 lanes (socket M.2 PCIe x2). Data transfer rates are about half of the declared value (comparable to M.2 NVMe PCIe x2 SSDs).

## RACK MOUNTING IPCS

HIGH PERFORMANCE  
HIGH CONFIGURABILITY  
HIGH RELIABILITY  
MULTIPLICITY OF USE



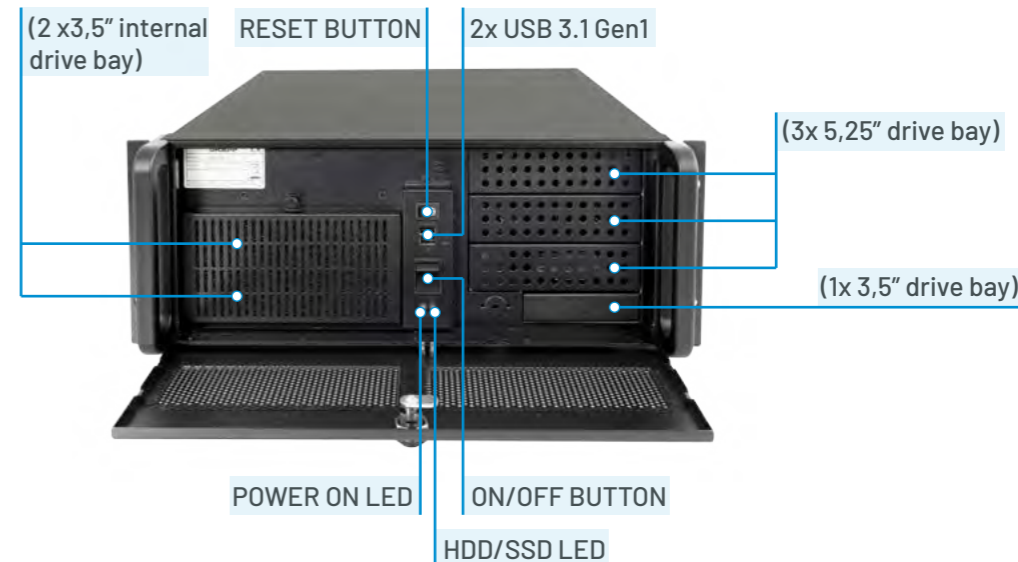
# PR4XX SERIES



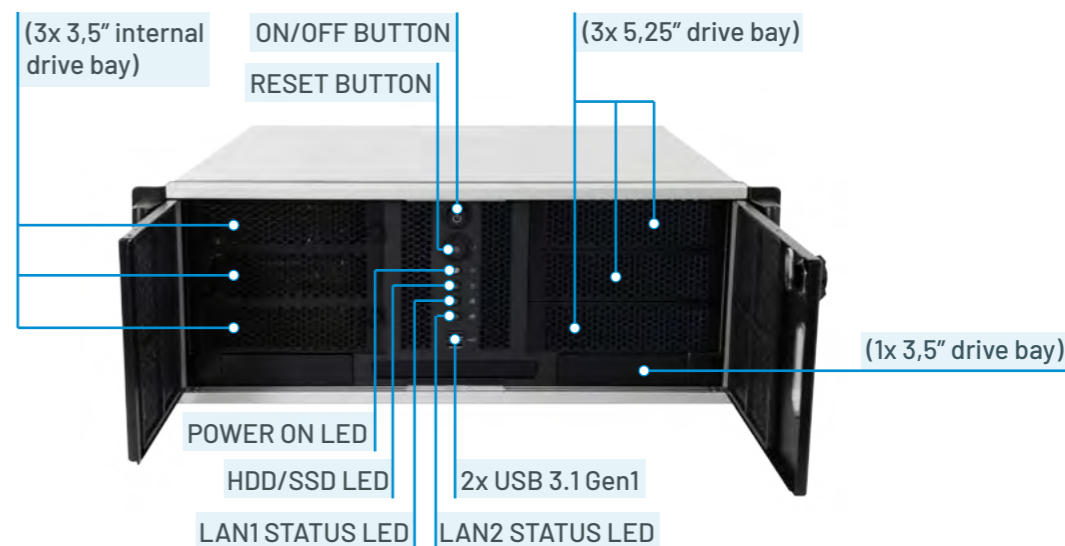
- Available in long (PR40XX) and short versions (PR41XX)
- 24/7 operation
- High processing capacity
- High reliability
- Multiplicity of use
- Intel® Core™ i3, i5, i7 processors of Skylake, Kaby Lake and Coffee Lake generation

## DETAIL - FRONT ACCESS

PR40XX - Long version



PR41XX - Short version



Front access

5.25"	• DVD • HDD + KH • HDD + BH
5.25"	• DVD • HDD + KH • HDD + BH
5.25"	• DVD • HDD + KH • HDD + BH
3.5"	• HDD • 2xSSD + KS • 2xSSD + BS

Internal access - PR40XX

3.5"	• HDD
3.5"	• HDD

Internal access - PR41XX

3.5"	• HDD • 2xSSD + KS
3.5"	• HDD • 2xSSD + KS
3.5"	• HDD • 2xSSD + KS

- DVD: DVD-RW SATA optical drive
- HDD: 3,5" SATA HDD
- KH: 1x3,5" HDD on 5,25" drive bay installation kit
- BH: Extractable drawer for 1x3,5" HDD on 5,25" drive bay
- SSD: 2,5" SATA SSD
- KS: 2x2,5" SSD on 3,5" drive bay installation kit
- BS: Extractable drawers for 2x2,5" SSD on 3,5" drive bay

TECHNICAL DATA

	PR4048	PR4148	PR4049	PR4149	PR4050	PR4150	PR4051	PR4151	
<b>CASE</b>	Cabinet rackmount 19" 4U								
<b>ASEM Logo</b>	Adhesive label								
<b>Material</b>	Electro galvanized Steel	Hot dip galvanized Steel	Electro galvanized Steel	Hot dip galvanized Steel	Electro galvanized Steel	Hot dip galvanized Steel	Electro galvanized Steel	Hot dip galvanized Steel	
<b>CABINET FORMAT</b>	Long	Short	Long	Short	Long	Short	Long	Short	
<b>MOTHERBOARD</b>	ATX format, D3446-S2 (Fujitsu)				ATX format, D3646-S (Fujitsu)				
<b>PROCESSOR (soldered on-board)</b>	Intel® Core™ i3-6100 3.70GHz 64bit • 2 cores / 4 threads • 3MB Smart cache • 14nm • Socket LGA1151 Intel® Core™ i5-6400 2.70GHz (3.30GHz Turbo) 64bit • 4 cores / 4 threads • 3MB Smart cache • 14nm • Socket LGA1151 Intel® Core™ i7-6700 3.40GHz (4.00GHz Turbo) 64bit • 4 cores / 8 threads • 8MB Smart Cache • 14nm • Socket LGA1151	Intel® Core™ i5-7500 3.40GHz (3.80GHz Turbo) 64bit • 4 cores / 4 threads • 6MB Smart cache • 14nm • Socket LGA1151 Intel® Core™ i7-7700 3.60GHz (4.20GHz Turbo) 64bit • 4 cores / 8 threads • 8MB Smart cache • 14nm • Socket LGA1151	Intel® Core™ i3-8100 3.60GHz 64bit • 4 cores / 4 threads • 6MB Smart cache • 14nm • Socket LGA1151 Intel® Core™ i5-8400 2.80GHz (4.00GHz Turbo) 64bit • 6 cores / 6 threads • 9MB Smart cache • 14nm • Socket LGA1151 Intel® Core™ i7-8700 3.20GHz (4.60GHz Turbo) 64bit • 6 cores / 12 threads • 12MB Smart cache • 14nm • Socket LGA1151 Intel® Xeon™ E-2176G 3.70GHz (4.70GHz Turbo) 64bit • 6 cores / 12 threads • 12MB Smart cache • 14nm • Socket LGA1151	Intel® Core™ i3-9100 3.60GHz (4.20GHz Turbo) 64bit • 4 cores / 4 threads • 6MB Smart cache • 14nm • Socket LGA1151 Intel® Core™ i5-9400 2.90GHz (4.10GHz Turbo) 64bit • 6 cores / 6 threads • 9MB Smart cache • 14nm • Socket LGA1151 Intel® Core™ i7-9700 3.00GHz (4.70GHz Turbo) 64bit • 8 cores / 8 threads • 12MB Smart cache • 14nm • Socket LGA1151					
<b>CHIPSET</b>	Intel® C236 Express Chipset with integrated RAID controller				Intel® C246 Express Chipset with integrated RAID controller				
<b>VIDEO CONTROLLER</b>	Intel® HD Graphics 530 integrated Intel® Core™ i3 processor • 350MHz/1.05GHz Intel® HD Graphics 530 integrated Intel® Core™ i5 processor • 350MHz/950MHz Intel® HD Graphics 530 integrated Intel® Core™ i7 processor • 350MHz/1.15GHz Multi Display supported (up to 3)	Intel® HD Graphics 630 integrated Intel® Core™ i5 processor • 350MHz/1.10GHz Intel® HD Graphics 630 integrated Intel® Core™ i7 processor • 350MHz/1.15GHz Multi Display supported (up to 3)	Intel® UHD Graphics 630 integrated Intel® Core™ i3 processor • 350MHz/1.10GHz Intel® UHD Graphics 630 integrated Intel® Core™ i5 processor • 350MHz/1.05GHz Intel® UHD Graphics 630 integrated Intel® Core™ i7 processor • 350MHz/1.20GHz Intel® UHD Graphics P630 integrated Intel® Xeon™ processor • 350MHz/1.20GHz Multi Display supported (up to 3)	Intel® UHD Graphics 630 integrated Intel® Core™ i3 processor • 350MHz/1.10GHz Intel® UHD Graphics 630 integrated Intel® Core™ i5 processor • 350MHz/1.05GHz Intel® UHD Graphics 630 integrated Intel® Core™ i3 processor • 350MHz/1.20GHz Multi Display supported (up to 3)					
<b>GRAPHICS LIBRARY</b>	DirectX 12 • OpenGL 4.4 supported				DirectX 12 • OpenGL 4.5 supported				
<b>AUDIO</b>	Realtek® ALC671 5.1-channel High Definition Audio CODEC								
<b>ETHERNET CONTROLLER</b>	Intel® I210AT and Intel® I219LM with support of Intel® AMT 11, WoL and Magic Packet™								
<b>TPM</b>	Discrete TPM 2.0 module								
<b>SYSTEM MEMORY RAM</b>	4GB (1x 4GB SODIMM DDR4 module) 8GB (2x 4GB SODIMM DDR4 module) 16GB (2x 8GB SODIMM DDR4 module) 32GB (2x 16GB SODIMM DDR4 module) 64GB (4x 16GB SODIMM DDR4 module)								
<b>MASS STORAGE</b>	<b>M.2 SSD</b>	-						1x onboard connector for direct insertion of M.2 2280 NVMe PCIe SSD (up to 1TB)	
	<b>SSD mSATA</b>	1x onboard connector for direct insertion of SSD mSATA SATA III (up to 960GB)						-	
	<b>SSD/HDD</b>	6x SATA 6Gb/s ports for SSD 2.5"/HDD 3.5" SATA III							
<b>RAID</b>	Raid 0, 1, 5, 10 <sup>1</sup>								

TECHNICAL DATA

	PR4048	PR4148	PR4049	PR4149	PR4050	PR4150	PR4051	PR4151
<b>DRIVE BAY</b>	<b>External</b> 3x 5.25" (h=1.65") 1x 3.5" (H=1.00") <b>Internal</b> 2x 3.5" (H=1.00") 3x 3.5" (H=1.00") 2x 3.5" (H=1.00") 3x 3.5" (H=1.00") 2x 3.5" (H=1.00") 3x 3.5" (H=1.00") 2x 3.5" (H=1.00") 3x 3.5" (H=1.00")							
<b>INTERFACES</b>	<b>LAN</b> 2x Gigabit Ethernet (RJ45) <b>USB</b> 4x USB 3.1 Gen1 (Type-A) • 4x USB 2.0 (Type-A) 2x USB 3.1 Gen1 (Type-A) front access 2x USB 2.0 internal connector 1x USB 2.0 Stick (Type-A) internal 2x USB 3.1 Gen2 (Type-A) • 2x USB 3.1 Gen1 (Type-A) • 4x USB 2.0 (Type-A) 2x USB 3.1 Gen1 (Type-A) front access 2x USB 2.0 internal connector 1x USB 3.1 Gen2 Stick (Type-A) internal <b>SERIAL</b> 1x RS232 (DB9M) 1x RS232 (DB9M) 3x RS232 internal connector <b>PERIPHERAL DEVICES</b> 1x PS/2 Keyboard port (purple) • 1x PS/2 mouse port (green) <b>VIDEO</b> 1x DVI-D • 2x DisplayPort V1.2 <b>AUDIO</b> 1x Line In • 1x Line Out • 1x Microphone							
<b>INTERFACES w/ SLOT BRACKET</b>	1x RS232 (DB9M) rear				-			
<b>EXPANSION SLOTS</b>	2x PCI full size (32 bit, 33MHz, Rev 2.3) 1x PCIe x16 (16 Lanes, Gen3) • 1x PCIe x16 (4 Lanes, Gen3) 1x PCIe x8 (1 Lane, Gen3) 1x PCIe x4 (4 Lanes, Gen3) • 1x PCIe x4 (1 Lane, Gen3)				2x PCI full size (32 bit, 33MHz, Rev 2.3) 1x PCIe x16 (16 Lanes, Gen3) • 1x PCIe x16 (4 Lanes, Gen3) 2x PCIe x8 (1 Lane, Gen3) 1x PCIe x1 (Gen3)			
<b>POWER SUPPLY</b>	Inpute voltage 110/230VAC • 400W or 650W, auto-ranging Inpute voltage 110/230VAC • 2x 500W, auto-ranging, redundant	Inpute voltage 110/230VAC • 400W or 650W, auto-ranging	Inpute voltage 110/230VAC • 400W or 650W, auto-ranging Inpute voltage 110/230VAC • 2x 500W, auto-ranging, redundant	Inpute voltage 110/230VAC • 400W or 650W, auto-ranging	Inpute voltage 110/230VAC • 400W or 650W, auto-ranging Inpute voltage 110/230VAC • 2x 500W, auto-ranging, redundant	Inpute voltage 110/230VAC • 400W or 650W, auto-ranging	Inpute voltage 110/230VAC • 400W or 650W, auto-ranging Inpute voltage 110/230VAC • 2x 500W, auto-ranging, redundant	Inpute voltage 110/230VAC • 400W or 650W, auto-ranging
<b>O.S. CERTIFIED</b>	Microsoft Windows 10 IoT Enterprise 2019/2016 64 bit Microsoft Windows 7 Pro/ Ultimate 32/64 bit Microsoft Windows Embedded Standard 7E/7P 32/64 bit		Microsoft Windows 10 IoT Enterprise 2019/2016 64 bit					
<b>SPECIAL FEATURES</b>	24/7 operation							
<b>OPERATING TEMPERATURE</b>	0°- 40°C with 24x7 HDD 5°- 40°C with standard HDD							
<b>STORAGE TEMPERATURE</b>	-10°C ÷ 60°							
<b>OPERATING/STORAGE RELATIVE HUMIDITY</b>	20 ÷ 90% RH (non-condensing)							
<b>APPROVALS</b>	CE							

1. For RAID 0, 1 configurations at least 2x HDDs 3,5" or 2x SSDs 2,5" are required  
For RAID 5 configuration a minimum of 3x HDDs 3,5" (no SSDs) are required  
For RAID 10 configuration, 4x HDDs 3,5" (no SSDs) are required.

# INDUSTRIAL MONITORS

ROBUSTNESS  
GREAT RELIABILITY  
INTEGRATED RVL TECHNOLOGY



0.8.8.7-7-7.1.0



DATA ANALYSIS

8888	3125	18	53	545108	87014	818
18807	1881	42	811088	87808	8531	81
87088	8188	87	703884	78888	7888	81

GPS DATA - 024

18778	1088	18	811	288088	88001	888
88788	8888	48	881108	18888	8881	88

125:48

125:37

125:48



SECTOR: 89  
71

SECTOR: 70  
70

# MQ200 & MH200



DOWNLOAD THE  
PRODUCT SHEET



REMOTE  
VIDEO LINK

IP69K

- TFT LCDs in 12.1" and 15" in 4:3 aspect ratio, 17" and 19" in 5:4 aspect ratio, 12.1", 15.6", 18.5",
- 21.5" and 24" in Wide aspect ratio
- Resolution up to Full HD
- Aluminum (ALU) e aluminum True Flat (TF) front panels with resistive touchscreen
- Aluminum and glass True Flat front panels with multitouch projected capacitive touchscreen (TFM)
- Stainless steel True Flat (TFK) front panels with resistive touchscreen
- MQ family with the new minimized frame
- Front IP65 protection grade
- Video input: 1x DVI-D and 1x DisplayPort
- ATEX certification for QT-TFM version (optional)
- Available in RVL version (MQR200 & MHR200) for the remotation of the DVI-D and USB 2.0 signals up to 100m
- Available with 110/230VAC power supply

## TECHNICAL DATA

	MQ200-ALU	MQ200-TFM	MQ200-TFK	MH200-ALU	MH200-TF
<b>LED BACKLIGHT TFT LCD</b>		12.1" W - 1280x800 15.6" W - 1366x768 15.6" W - 1920x1080 18.5" W - 1366x768 18.5" W - 1920x1080 21.5" W - 1920x1080 24" W - 1920x1080		12.1" - 800x600 12.1" - 1024x768 15" - 1024x768 17" - 1280x1024 19" - 1280x1024	
<b>CUT-OUT</b>		QT		HT	
<b>TOUCHSCREEN</b>	Resistive 5 wires	P-CAP Multitouch	Resistive 5 wires		
<b>FRONT PANEL</b>	Aluminum	True Flat Aluminum	True Flat Stainless Steel	Aluminum	True Flat Aluminum
<b>FRONT USB</b>	-			1x USB 2.0 (Type-A), protected	
<b>PROTECTION GRADE</b>	<b>IP rating</b>	IP65 - frontal	IP69K - frontal	IP65 - frontal	
	<b>NEMA rating</b>	UL Type 1, 4x (indoor only)	UL Type 1, 4x (indoor only) and 12	UL Type 1, 4x (indoor only) and 12	
<b>CASE</b>	<b>Installation</b>	Panel mounting			
	<b>Material</b>	Zinc-coated skin pass steel			
<b>VIDEO INPUT</b>	<b>MQ/MH</b>	1x DisplayPort 1x DVI-D			
	<b>MQR/MHR</b>	1x RJ45 connector for remotation of DVI-D <sup>1</sup>			
<b>USB INPUT</b>	<b>MQ/MH</b>	1x USB 2.0 HUB input (Type-B)			
	<b>MQR/MHR</b>	1x RJ45 connector for remotation of USB 2.0 <sup>1</sup>			
<b>USB OUTPUT</b>		3x USB 2.0 (Type-A)			
	<b>Optional</b>	1x USB 2.0 (Type-A) rear			
<b>POWER SUPPLY INPUT</b>		24VDC (18÷32VDC) isolated			
		110V/230VAC (90÷264VAC) isolated, autoranging			
<b>OPERATING TEMPERATURE</b>	0° ÷ +50°C				
<b>STORAGE TEMPERATURE</b>	-5° ÷ +60°C				
<b>OPERATION/STORAGE RELATIVE HUMIDITY</b>	20% ÷ 90% RH (non-condensing)				
<b>APPROVALS</b>	CE cULus Listed	CE cULus Listed ATEX zone 2/22	CE cULus Listed		

1. The same RJ45 connector is used for remotation of DVI-D and USB 2.0 signals

# MK200 SERIES



DOWNLOAD THE  
PRODUCT SHEET



REMOTE  
VIDEO LINK 

 **BUTTON AREA**  
PAG. 118

 **ACCESSORI**  
PAG. 122

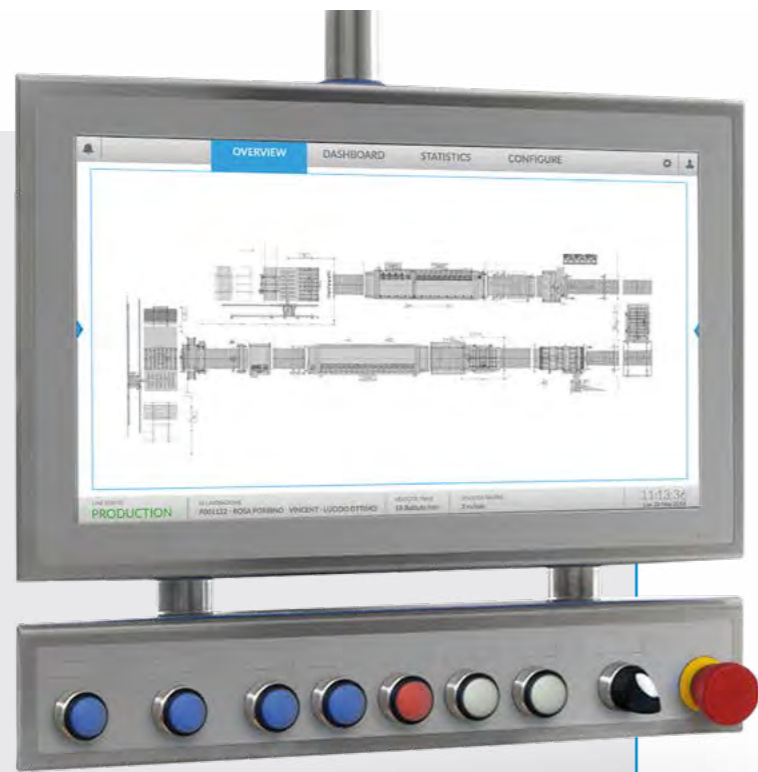
- VESA 75/100 or top/bottom arm mounting
- Available in landscape and portrait version
- Powder coated die-cast aluminum chassis with anti-scratch treatment
- 15.6", 18.5", 21.5" and 24" TFT LCDs in Wide aspect ratio for landscape version (MK200-TFM and MK200-BA-TFM)
- 21,5" and 24" TFT LCDs in Wide aspect ratio for portrait version (MK200P-BA-TFM)
- Resolution up to Full HD
- New front panels with minimized aluminum and glass True Flat frame with multitouch projected capacitive touchscreen
- Full IP65 protection grade
- Video input: 1x DVI-D and 1x DisplayPort
- Available with configurable Button Area for the installation of Ø22 hard-wired elements (MK200-BA-TFM and MK200P-BA-TFM)
- Available in RVL version (MKR version) for the remotation of the DVI-D and USB 2.0 signals up to 100m

## TECHNICAL DATA

	MK200-TFM	MK200-BA-TFM	MK200P-BA-TFM
<b>LED BACKLIGHT TFT LCD</b>	15.6" W - 1366x768 15.6" W - 1920x1080 18.5" W - 1366x768 18.5" W - 1920x1080 21.5" W - 1920x1080 24" W - 1920x1080		21.5" W - 1920x1080 24" W - 1920x1080
<b>ORIENTATION</b>	Landscape		Portrait
<b>TOUCHSCREEN</b>	P-CAP multitouch		
<b>FRONT PANEL</b>	True Flat Aluminum		
<b>PROTECTION GRADE</b>	Full IP65		
<b>CASE</b>	<b>Installation</b>	VESA 75/100 or pole/suspension arm mounting system compatible with RITTAL CP40/ROLEC TARAPLUS/HASEKE ULT KUPPLUNG 48	
	<b>Material</b>	Aluminum alloy AN AB46400	
	<b>Colour</b>	Anti-scratchable painted - RAL 9006	
	<b>Accessories</b>	Side handles, perimetral handle, keyboard holder kit	
<b>BUTTON AREA (optional)</b>	-	See dedicated section	
<b>VIDEO INPUT</b>	1x DisplayPort 1x DVI-D		
	<b>Remote version MKR</b>	1x RJ45 connector for remotation of DVI-D <sup>1</sup>	
<b>USB INPUT</b>	1x USB 2.0 HUB input (Type-B)		
	<b>Remote version MKR</b>	1x RJ45 connector for remotation of USB 2.0 <sup>1</sup>	
<b>USB OUTPUT</b>	3x USB 2.0 (Type-A)		
	<b>Rear access</b>	1x USB 2.0 (Type-A) with protection cap	
<b>POWER SUPPLY INPUT</b>	24VDC (18+32VDC) isolated		
<b>OPERATING TEMPERATURE</b>	0° + 50°C		
<b>STORAGE TEMPERATURE</b>	-5° + 60°C		
<b>OPERATION/STORAGE RELATIVE HUMIDITY</b>	20% + 90% RH (non-condensing)		
<b>APPROVALS</b>	CE cULus Listed		

1. The same RJ45 connector is used for remotation of DVI-D and USB 2.0 signals


# MX200




DOWNLOAD THE  
PRODUCT SHEET



REMOTE  
VIDEO LINK 

STAINLESS  
STEEL 

IP69K  
food and beverage  
industry compliant 

BUTTON AREA  
PAG. 120 

- Monitors specifically developed for Food&Beverage and chemical/pharma applications
- Stainless steel (AISI 304L) chassis with sloping surfaces to avoid dust accumulation
- Stainless steel (AISI 304L) hygienic screws with under-head gasket
- Fully cleanable blue silicone gaskets
- 18.5" TFT LCDs in Wide aspect ratio
- Resolution up to Full HD
- Stainless steel (AISI 304L) True Flat front panels with resistive touchscreen
- Top/bottom arm mounting
- Up to full IP69K protection grade
- Video input: 1x DVI-D and 1x DisplayPort
- Available with configurable Button Area for the installation of hard-wired elements: Ø22 cleanable silicon elements, or Ø30 low profile stainless steel elements
- Available in RVL version (MXR200) for the remotation of the DVI-D and USB 2.0 signals up to 100m

## GALLERY



## TECHNICAL DATA

	MX200	MX200-BA
LED BACKLIGHT TFT LCD	18.5" W - 1366x768 18.5" W - 1920x1080	
TOUCHSCREEN	Resistive 5 Wires	
FRONT PANEL	True Flat Stainless Steel	
PROTECTION GRADE	Full IP69K	Full IP65
BUTTON AREA	-	See dedicated section
CASE	Installation	6x M5 screws + gasket + technical drawing to build your own fixing flange (included) or Top/bottom arm mounting with customized flange for Ø48mm tubes (optional)
	Material	Stainless Steel AISI 304L
VIDEO INPUT		1x DisplayPort 1x DVI-D
	Remote version MXR	1x RJ45 connector for remotation of DVI-D <sup>1</sup>
USB INPUT		1x USB 2.0 HUB input (Type-B)
	Remote version MXR	1x RJ45 connector for remotation of USB 2.0 <sup>1</sup>
USB OUTPUT		3x USB 2.0 (Type-A)
	Optional	2x USB 2.0 (Type-A) rear access with protection cap
POWER SUPPLY INPUT	24VDC (18+32VDC) isolated	
OPERATING TEMPERATURE	0° ÷ +50°C	
STORAGE TEMPERATURE	-5° ÷ +60°C	
OPERATION/STORAGE RELATIVE HUMIDITY	20% ÷ 90% RH (non-condensing)	
APPROVALS	CE cULus Listed	

1. The same RJ45 connector is used for remotation of DVI-D and USB 2.0 signals

# COMPARISON TABLE







MK200



MX200

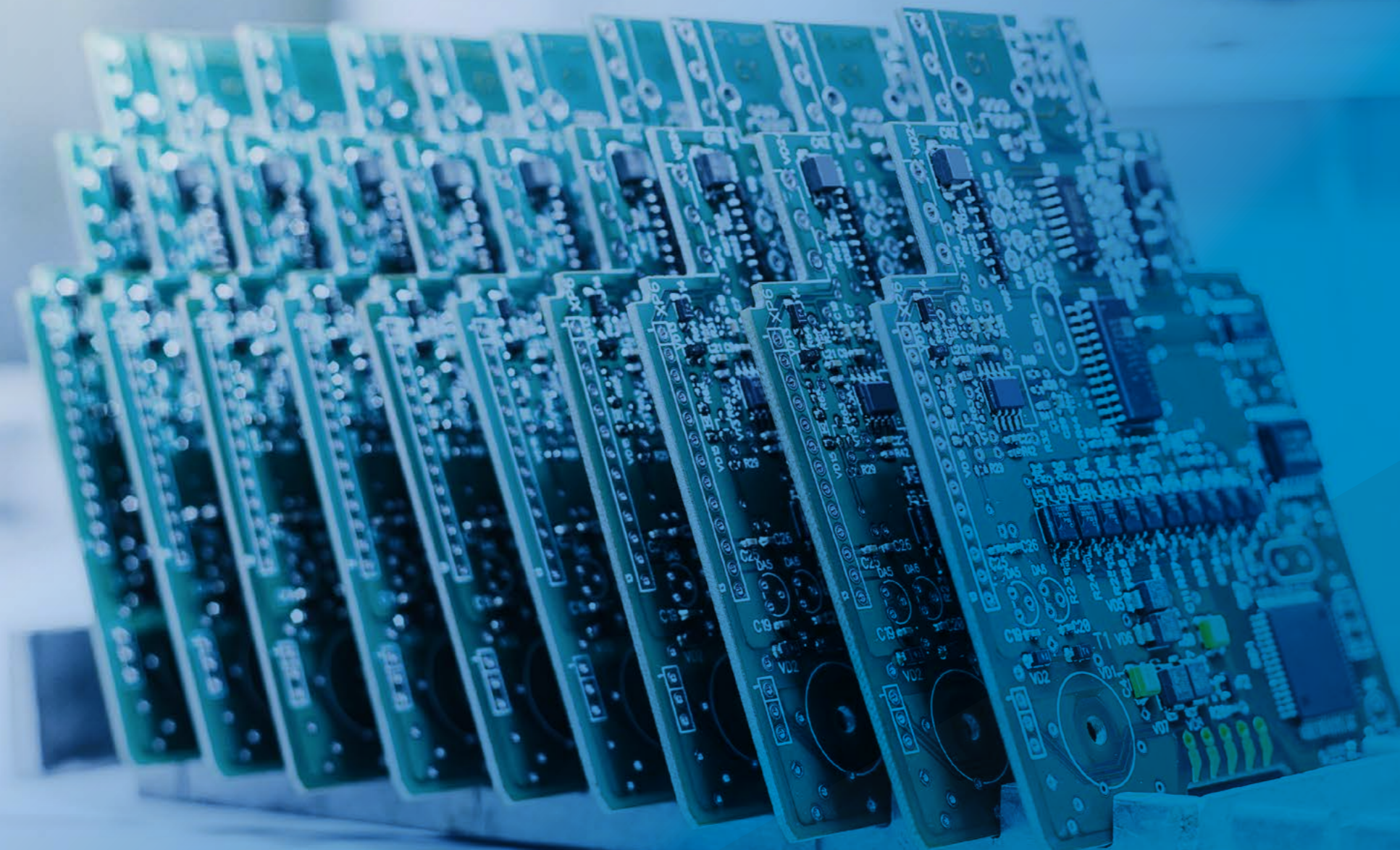


MQ200 &amp; MH200

		MK200	MX200	MQ200 & MH200
<b>FRONT PANELS</b>	<b>Wide sizes</b>	15,6", 18,5", 21,5" and 24"	18,5"	12,1", 15,6", 18,5", 21,5" and 24"
	<b>Narrow sizes</b>	-	-	12,1", 15", 17", 19"
	<b>Types</b>	ALU	TFK	ALU, TF, TFM, TFK
	<b>Touchscreen technology</b>	Multitouch	Resistive	Resistive Multitouch
<b>PROTECTION GRADE</b>		Up to Full IP65	Up to Full IP69K	Up to Full IP69K
<b>CASE MATERIAL</b>		Aluminum alloy AN AB46400	Stainless Steel AISI 304L	Zinc-coated skin pass steel
<b>INSTALLATION</b>		VESA 75/100 or pole/suspension arm mounting	Top/bottom arm mounting with customized flange	Panel mounting
<b>ACCESSORIES (optional)</b>		Side handles Perimetral handle Keyboard holder kit	-	-
<b>BUTTON AREA (optional)</b>		✓	✓	✗
<b>POWER SUPPLY INPUT</b>		24VDC	24VDC	24VDC 110V/230VAC
<b>CERTIFICATIONS</b>		CE  	CE 	CE 

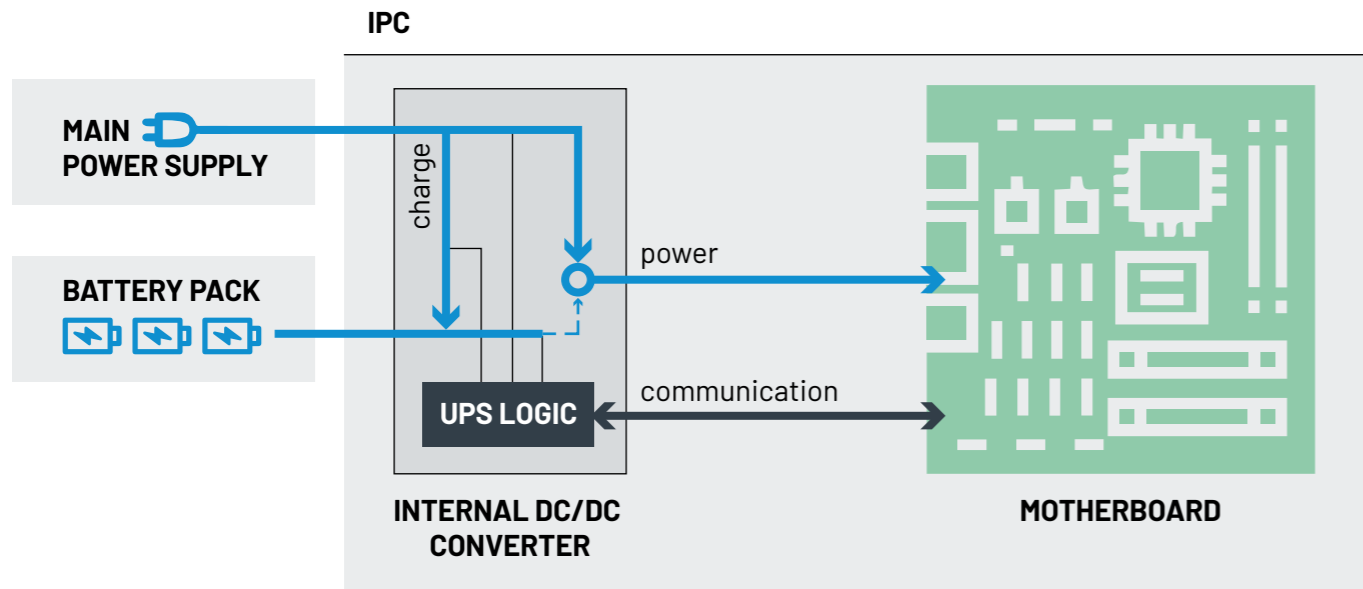
\* only for QT-TFM

# ASEM TECHNOLOGIES





# INTEGRATED UPS



ASEM has developed an integrated UPS (Uninterruptable Power Supply) system for its IPCs to prevent sudden shutdowns with consequent data loss or damage due to unexpected primary power supply failures. The control electronics are integrated into the power supply module to ensure maximum reliability and noise immunity to maintain the IPC and UPS communication interfaces within the system.

The control logic, organised on several levels, is entirely designed and developed by the ASEM R&D Team and includes:

- a hardware section capable of switching the power source of the primary voltage to the battery and vice versa in just microseconds
- a configurable hardware section for monitoring battery status and managing the charging and discharging phases
- a microcontroller-based control section for managing system states and interfaces with the IPC
- a high-level, Windows-based, user-configurable software section for diagnosing the system and battery pack status and managing shutdowns

The architecture is common to all systems and is customised by configuring specific parameters according to the type of use and consumption to optimise battery life

## SOFTWARE

The UPS system operation is managed by high-level software, developed for Windows, divided into two parts:

- a service for monitoring the supply voltage and battery status and managing potential shutdowns
- a graphic application for configuring the behaviour in the event of a primary power failure and checking diagnostics

Furthermore, a regular system shutdown is commanded irrespective of the set parameters if a voltage below the minimum is measured to protect the battery from abnormal decay and avoid unexpected shutdowns



**CONFIGURABLE SWITCH-OFF INTERVAL FROM 10 SECONDS TO 10 MINUTES**

**INDICATION OF REMAINING AUTONOMY CALCULATED ON ACTUAL SYSTEM CONSUMPTION**

**REAL-TIME BATTERY STATUS DIAGNOSTICS**

**LOG FUNCTIONS WITH DATA HISTORICISATION**

**INTEGRATION WITH THE USER APPLICATION**

## BATTERY PACK TYPES

### 1) LEAD-ACID BATTERY

Lead-acid cell battery packs, compared to more modern technologies, are larger and bulkier but they can supply high peak currents and operate over a wide temperature range (well above the 0-50°C guaranteed for systems). They consist of six elements for a nominal voltage of 12 V and can deliver a maximum of 100 W for approximately 2 minutes. They also integrate a temperature sensor and a protection circuit that cuts off the connection if the current is too high or the voltage is too low.

### 2) NICKEL-METAL-HYDRIDE (NIMH) BATTERIES

Battery packs with Ni-MH cells are characterised by a smaller size compared to lead-acid batteries and lower self-discharge during storage. They consist of 10 elements for a nominal voltage of 12V and can output a maximum of 60W for about 10 minutes. They also integrate a temperature sensor, a protection circuit that cuts off the connection if the current is too high or the voltage too low, and a switch for disconnecting the battery during transport.

## INSTALLATION OF BATTERY PACKS

ASEM offers several installation options to choose the best location, facilitating wiring and/or replacement operations.

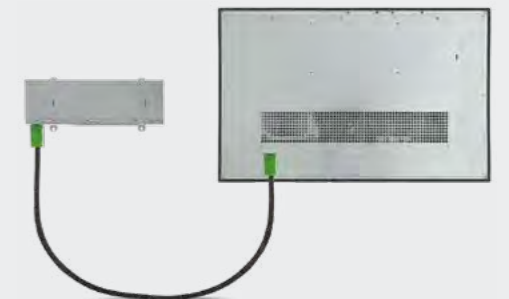
SEPARATED FROM THE SYSTEM



DIRECT ON THE SYSTEM



SEPARATED FROM THE SYSTEM, UP TO A DISTANCE OF 3M



# MASS STORAGE DEVICES

ASEM provides a wide choice of mass storage devices for expanding the various IPCs according to customer requirements. All mass storage devices are tried and tested to guarantee correct operation in all working environments.



## LIST OF MASS STORAGE DEVICES:

- CFAST: available in ET (Extended Temperature) version
- SSDs: available in SATA, NVMe PCIe and ET (Extended Temperature) versions
- HDDs: available in 2.5", 3.5" SATA III and 24x7 versions



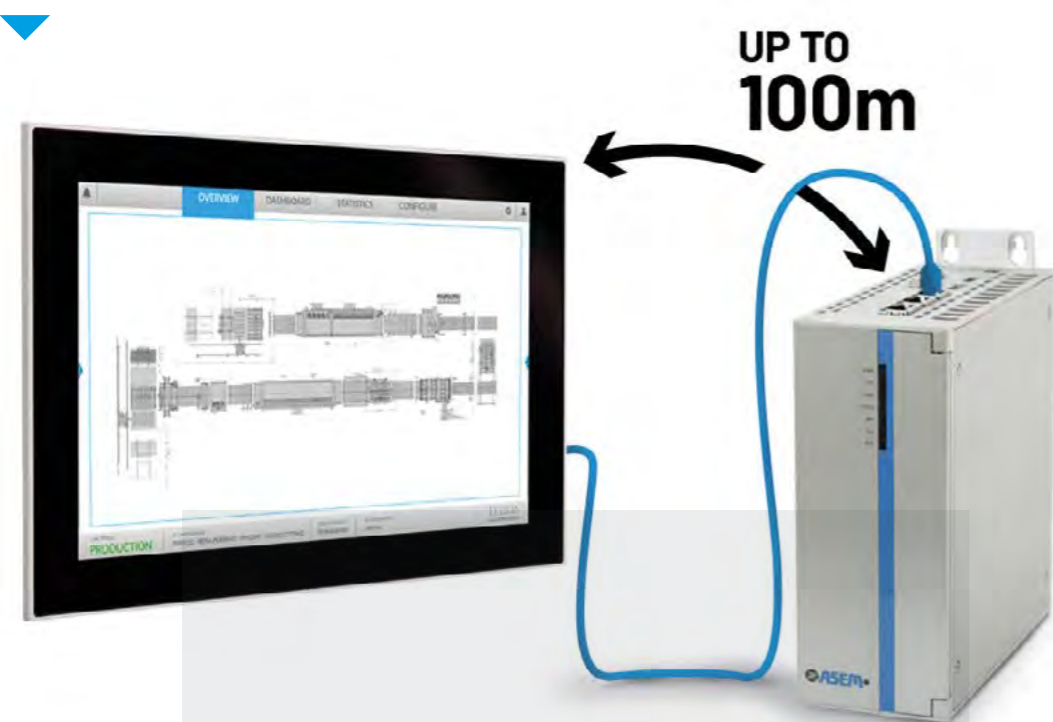
## SSD COMPARISON TABLE

	SSD 2,5" SATA III	SSD mSATA SATA III	SSD M.2 2242 SATA III	SSD M.2 2280 NVMe PCIe x4
BM1XY FAMILY	X	X	✓	X
xx2150	X	✓	X	X
xx2200	✓	✓	X	X
xx2250	X	X	✓	X
BM3300 & BM3500	✓	✓	X	X
xx3400 & xx3600	✓	✓	X	X
QT-HT-PB 3500	✓	X	✓	✓
xx5400 & xx5600	✓	X	✓	✓
VK3500	X	X	X	✓
PR4x48	✓	✓	X	X
PR4x49	✓	✓	X	X
PR4x50	✓	X	X	✓
PR4x51	✓	X	X	✓

## HDD COMPARISON TABLE

	HDD 2,5" SATA III	HDD 3,6" SATA III
BM1XY FAMILY	X	X
xx2150	X	X
xx2200	✓	X
xx2250	X	X
BM3300 & BM3500	✓	X
xx3400 & xx3600	✓	X
QT-HT-PB3500	✓	X
xx5400 & xx5600	✓	X
VK3500	X	X
PR4x48	X	✓
PR4x49	X	✓
PR4x50	X	✓
PR4x51	X	✓

# RVL (REMOTE VIDEO LINK)



## VIDEO REMOTE CONTROL SOLUTIONS

The ASEM Remote Video Link is an innovative technology for connecting industrial monitors up to 100 metres apart from the IPC using a single cable, through which DVI-D and USB 2.0 signals are sent using the HDBaseT standard.

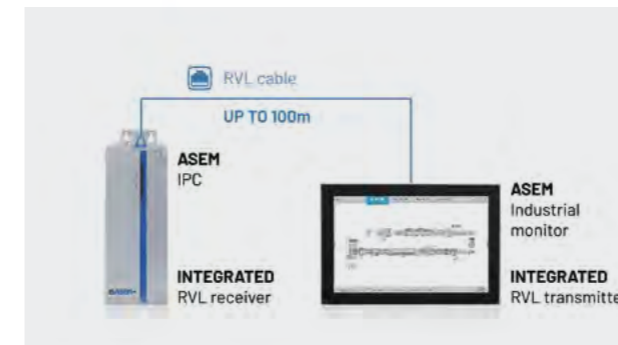
Signals are remoted up to 50 metres away using a Cat 5e SF/FTP cable or up to 100 metres away using a Cat 6A S/FTP cable.

The use of an industrial standard Ethernet cable and the RJ45 connector allows easy cabling in tight spaces and in presence of mobile systems (e.g. Arm Mounting systems).

ASEM can also supply an external RVL transmitter and/or receiver to remote video signals using third-party IPCs or monitors.

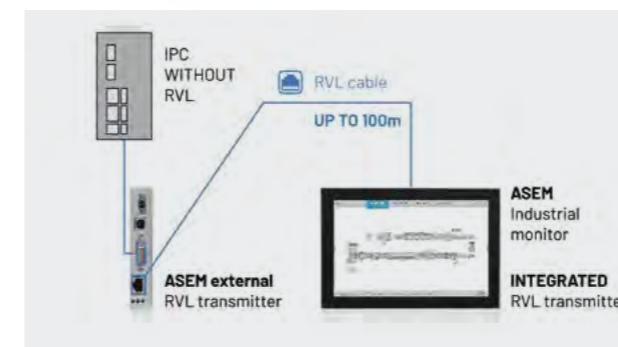
Both are powered at 24VDC. The ASEM RVL technology can create connections at long distances between any industrial device and in any specific application.

Here are the various cases of use:



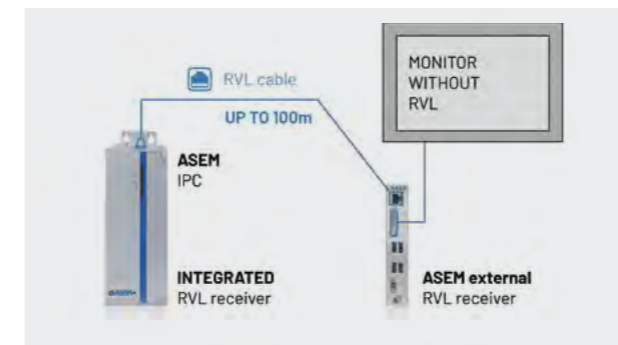
### 1) IPC AND ASEM INDUSTRIAL MONITORS

ASEM integrates RVL technology in its IPCs and industrial monitors. No additional external systems are required to connect the proprietary systems.



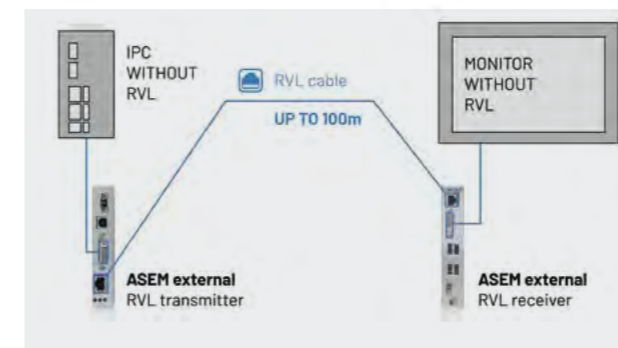
### 2) ASEM INDUSTRIAL MONITORS

ASEM provides external RVL transmitters for easily connecting a third-party IPC (or ASEM IPC not equipped with an integrated RVL transmitter) to the integrated RVL technology of a proprietary monitor.



### 3) ASEM IPC

ASEM provides external RVL receivers for easily connecting a third-party industrial monitor to the integrated RVL technology of a proprietary IPC.



### 4) IPC AND INDUSTRIAL MONITORS NOT EQUIPPED WITH INTEGRATED RVL

ASEM provides external RVL receivers and transmitters for easily connecting an industrial monitor to IPCs not equipped with integrated RVL transmitters.



# TPM

## TRUSTED PLATFORM MODULE

What is TPM? It is a technology designed to offer hardware and software security features. The Trusted Computing Group (TCG) is the organisation that publishes and maintains the TPM specifications according to the international standard 11889 ISO/ IEC.

The TPM is useful for generating, storing and restricting the use of cryptographic keys, passwords and certificates. The dTPM (Discrete Trusted Platform Module) is a dedicated microcontroller designed to protect the hardware. It integrates cryptographic keys into devices and is used for secure cryptographic processes and secure storage of critical data.

Integrated TPM has been recently introduced on x86-based machines. In this form, the TPM is integrated into a chipset component of the existing platform. For instance, the integrated x86-based TPM function is a security and management engine module and is logically isolated from the other engine modules.

- The TPM is an endpoint security technology (\*)
- IEC 62443-4-2 cites TPM as the gold standard for meeting the requirements of SL3 and SL4
- It checks that the operating system and firmware of the device are not tampered with
- It stores digital credentials in a secure hardware-based repository
- It sets passwords and manages keys
- It expands the number of smart cards, fingerprint readers and remote controls for multi-factor authentication
- It encrypts files and folders to control access
- It establishes status information to enable endpoint integrity
- It enables more secure wireless, remote, and VPN access
- For Windows® 11, TPM 2.0 is a requirement (PC must have TPM enabled)

(\*) Industrial Internet Security Framework (<https://www.iiconsortium.org/IISF.htm>)

### ASEM PRODUCTS TPM

	iTPM	dTPM
BM1XY FAMILY	✓	✗
QT/HT/PB/BM 2150	✗	✗
QT/HT/PB/BM 2200	✗	✓
QT/HT/PB/BM 2250	✓	✓
QT/HT/PB 3200	✗	✓
BM 3300	✓	✓
QT/HT/PB/BM 3400	✓	✓
QT/HT/PB/BM 3500	✓	✓
QT/HT/PB/BM 3600	✓	✗
QT/HT/PB/BM 5400	✓	✓
QT/HT/PB/BM 5600	✓	✓
HMI 100	✓	✗
VK 3500 SERIES	✓	✗

# CONNECTIVITY



ASEM offers products with technologies that support the latest data communication interfaces and Internet connections.

Wi-Fi and Bluetooth, Cellular modules are available that can also be installed in combination with each other to provide multiple modes of use according to the specific needs of each automation environment, according to the requirements of Industry 4.0.

The technologies adopted offer intrinsic reliability, connection robustness and speed, which, using the recent 5G band present on the latest and future products, is combined with the guarantee of low latency and high capacity for data processing and simultaneous connections.

The MIMO and Diversity functions achieved through the dual antenna mounted directly on the product or remotely can be exploited to optimise connection stability and performance.

### WIRELESS & BLUETOOTH CONNECTION TABLE

	Wi-Fi connection	Cellular connection
BM122	✓	✓
BM130	✓	✓
BM131	✓	✓
QT-HT-PB-BM 2150	✓	✓
QT-HT-PB 2200	✓	✓
QT-HT-PB 3400/3600	✓	✓
QT-HT-PB 3500	✓	✓
QT-HT-PB 5400/5600	✓	✓
VK3500	✓	✗

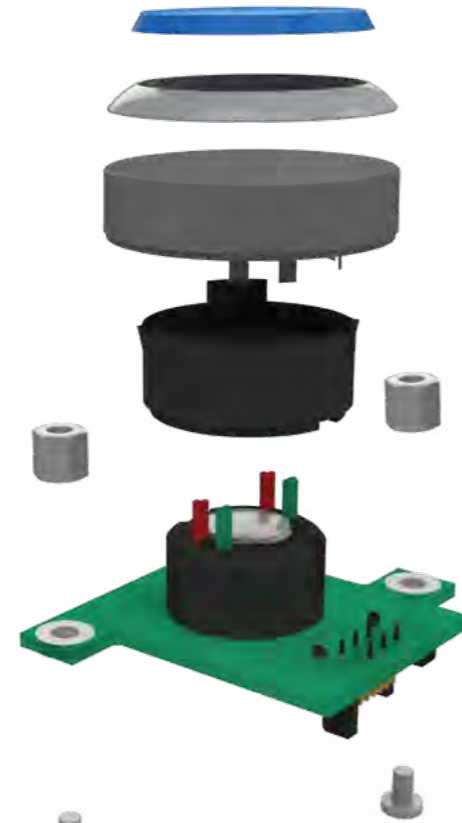


# CONFIGURABLE CONTROL AREA

## VK3500/MK200 SERIES



- Maximum configuration flexibility to customer specifications
- Frontally accessible for later configuration changes and/or additions
- Hard-wired connection modes
- The number of elements that can be installed depends on the size of the display: up to 13 elements on the landscape version and up to 8 elements on the portrait version with a 24" LCD (of which a maximum of 8 with hard-wired connection)
- The SIL3 emergency button has a separate hard-wired connection
- The elements are wired to two rear-access terminal blocks



### Ø22 IP65 ELEMENTS



#### INDICATOR LIGHTS

- available in 5 colours (red, yellow, green, blue, white)



#### BUTTONS

- opaque version in 2 colours (grey and black)
- translucent version in 5 colours (red, yellow, green, blue, white)
- also with a customisable insert



#### EMERGENCY STOP BUTTON SIL3

- rotary or pull release, with or without LED indicator



#### SELECTORS

- with key
- light keyless
- 1 (90°) or 2 (±40°, ±60°) positions (toggle or stable actuation)



#### ADDITIONAL INTERFACES

- Gigabit Ethernet (RJ45)
- Transponder RFID reader/writer LF (125 kHz) and HF (13,56 MHz)
- USB 2.0 (Type-A)
- knob with incremental encoder
- buzzer



#### ELEMENTS FOR MANAGING ATX MODE

- opaque version
- translucent version
- with key



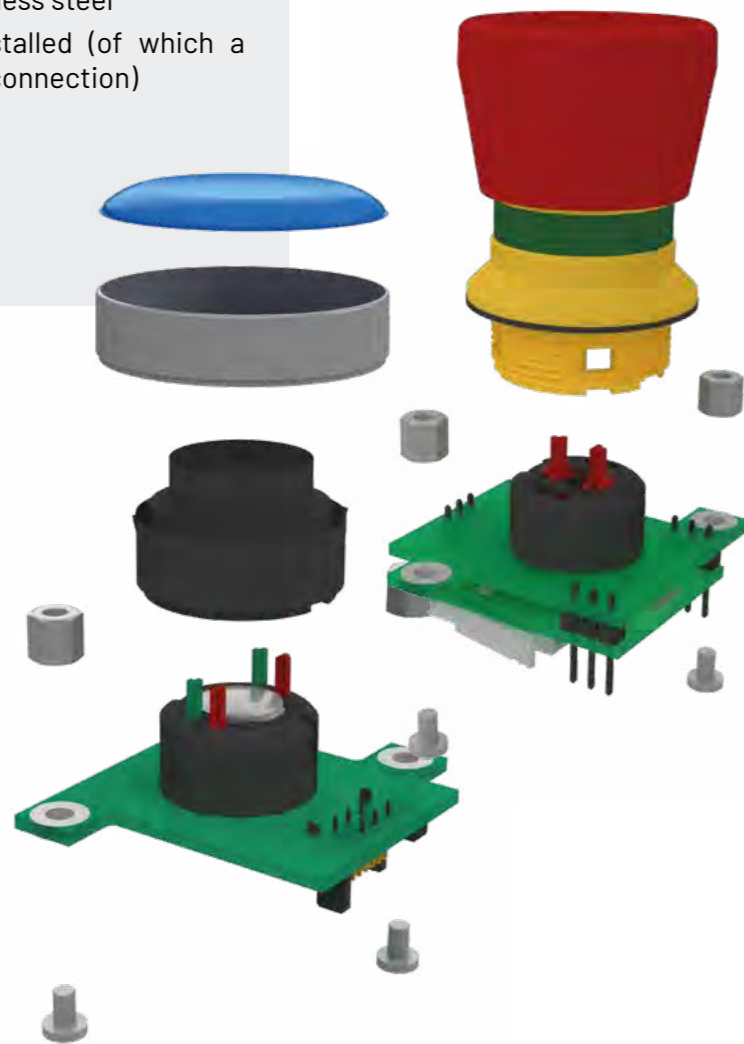
**FRONTALLY ACCESSIBLE  
FOR LATER CONFIGURATION  
CHANGES AND/OR ADDITIONS**

# CONFIGURABLE CONTROL AREA

## MX200



- Maximum configuration flexibility to customer specifications
- Frontally accessible for later configuration changes and/or additions
- Hard-wired connection modes
- Customer-selected elements can be Ø22 washable silicone or Ø30 low-profile stainless steel
- Up to 9 elements can be installed (of which a maximum of 8 with hard-wired connection)



## Ø22 SILICONE ELEMENTS



### INDICATOR LIGHTS

- available in 5 colours (red, yellow, green, blue, white)



### BUTTONS

- translucent version in 5 colours (red, yellow, green, blue, white)
- grey opaque version



### SELECTORS

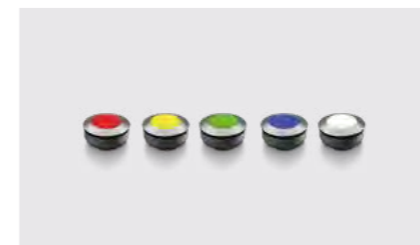
- with key
- light keyless
- 1 (90°) or 2 (±40°, ±60°) positions (toggle or stable actuation)



### EMERGENCY STOP BUTTON

- rotary or pull release, with or without LED indicator

## Ø30 STAINLESS STEEL, LOW-PROFILE ELEMENTS



### INDICATOR LIGHTS

- available in 5 colours (red, yellow, green, blue, white)



### BUTTONS

- translucent version in 5 colours (red, yellow, green, blue, white)
- grey opaque version
- with ring lighting



### SELECTORS

- with key
- light keyless
- 1 (90°) or 2 (±40°, ±60°) positions (toggle or stable actuation)

## MECHANICAL ACCESSORIES

VK3500/MK200 SERIES

### SIDE HANDLES



A set of two anodised aluminium side handles is available to facilitate system positioning

### PERIMETER HANDLE



An anodised aluminium perimeter handle is available for easy positioning of the system and to protect the operator from accidental impacts

### KEYBOARD HOLDER KIT



An aluminium keyboard holder kit painted RAL 9006 is available for the permanent installation of a keyboard and/or mouse of the customer's choice

## TYPES OF ASSEMBLY

### ARM/VESA Mounting IPC & Monitor

#### VK3500/MK200 SERIES

##### VESA MOUNTING

The VK3500 and MK200 systems are available with chassis having an attachment compatible with VESA 75/100 standards



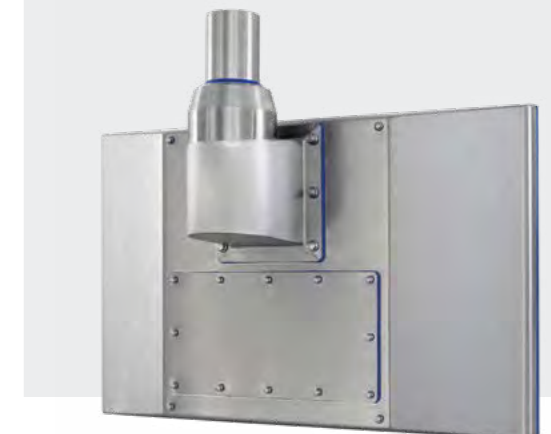
##### ARM ASSEMBLY

VK3500 and MK200 systems are available with arm-mounted chassis compatible with RITTAL CP40/ROLEC TARAPLUS/ HASEKE ULT KUPPLUNG 48



#### MX200 SERIES

The MX200 systems have a chassis with a specific attachment with six M5-type screws arranged with a 100mm centre distance. ASEM provides its customers with all the technical specifications for creating their own attachment flange. An arm-mounting flange for Ø48mm tubes is optionally supplied.



# SERVICES AND SUPPORT



## CUSTOMER-ORIENTED PHILOSOPHY

The ASEM customer-oriented philosophy means constant attention and care for the customer's needs and a comprehensive and qualified pre- and after-sales service. All company processes are designed and organised to ensure maximum customer satisfaction with excellent product quality and operational flexibility to respond promptly to changing market demands. ASEM ensures the quality of products and processes by systematically and rigorously applying its quality system according to UNI EN ISO 9001:2015. The quality system, introduced in 1999, is certified by Intertek and is constantly updated to improve the business operation effectiveness and efficiency.



## ASSISTANCE AND REPAIRS

ASEM offers its customers excellent assistance and consulting services for hardware and software, in addition to a timely repair service for products and systems.

ASEM guarantees service through a team of specialised technicians to optimise service activities and minimise response times in the following ways:

### PHONE HELP DESK SERVICE

- For hardware and systems, dial +39 0432 967250, from Mondays to Fridays from 9 a.m. to 12:30 noon and from 2 to 5:30 p.m.
- For software, dial +39 0362 859124, from Mondays to Fridays from 9 a.m. to 12:30 noon and from 2 to 5:30 p.m.

### ONLINE HELP DESK SERVICE

Available for hardware and software, it allows access to the ASEM customer care directly online on the company website at:

[www.aseutomation.com](http://www.aseutomation.com).

With this quick and simple tool you can request service and technical support independently and RMA for any repair service and you can monitor the status of your request in real-time

### E-MAIL SERVICE

Please send requests for hardware and software support to the following e-mail addresses:

- For hardware and systems: [suptec@asem.it](mailto:suptec@asem.it);
- For software: [supportsw@asem.it](mailto:supportsw@asem.it)

For software support, the "Asem Remote Support Tool" is also available at:

<http://get.teamviewer.com/asemsup>

