

The logo for Pironex is centered on a red background. It consists of a white outline of a horizontal arrow pointing to the right. Inside the arrow, the word "pironex" is written in a bold, lowercase, sans-serif font. Below "pironex", the tagline "electronic and software solutions" is written in a smaller, lowercase, sans-serif font.

pironex
electronic and software solutions



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OUR BRANDS

HELLO FROM ROSTOCK

Our team draws inspiration from the refreshing breeze of the Baltic Sea. Since 2007, we've been pioneering the development of advanced electronics and software in Rostock. Whether working independently or on behalf of clients, our goal remains the same: to deliver innovative solutions. This brochure serves as a window into the world of pironex, showcasing our commitment to driving progress and delivering exceptional results for our clients.



TINO HÜLSENBECK

FOUNDER AND CEO

We have carved out a haven for innovation by the Baltic Sea.

The pironex GmbH specializes in product development, engineering services, and the redesign of electronics and software, crafting intelligent solutions for various industries such as medicine, research, and industry.

I founded the company in Rostock in 2007 with the goal of creating something lasting here. Especially in a region on the rise, we need minds and ideas to drive progress for both society and the economy.

pironex has grown into a strong, international team operating regionally, nationally, and globally. Our team includes experienced professionals as well as up-and-coming talents with fresh ideas. We regularly involve students in our development processes. Our employees work in flexible, interdisciplinary teams, using their talents and expertise to the fullest.

In addition to technical expertise, pironex is known for its flexibility and clear communication structures. When standard solutions aren't enough, we tailor-make solutions for our customers.

We continuously improve and integrate new technologies through agile assessment and evaluation of their market viability. Today, themes like digitization, Industry 4.0, electromobility, Internet of Things, etc., are essential components not only of our service spectrum but also of our entire product portfolio.

We have long-standing relationships with many of our top clients - this confirms our dedication.

With our holistic approach, I'm extremely optimistic about the future and look forward to your inquiries.

Tino Hülsenbeck
CEO



Company video

HELLO FROM ROSTOCK



EMBRACING THE FUTURE WITH PIRONEX

We welcome the challenges of the future.

At pironex, we see tomorrow as today. True to this vision, we provide innovative services like electronic and software products to catalyze digital transformation for our clients. We recognize that anything digitizable will inevitably become digital. With the swift evolution in digitization and automation, the future is already here. Driven by our pursuit of excellence and profound expertise, we spearhead progress. We collaborate in interdisciplinary teams, firmly believing that diversity, flat hierarchies, and optimal working conditions foster creativity and productivity.



FOCAL POINTS OF OUR WORK

- Developing electronics and software for digitizing processes in industry and logistics.
- We pave the way for smart solutions in sustainable mobility and sharing concepts.
- We develop innovative technology for the livable spaces of tomorrow.
- We provide user-centric cloud software and intuitive mobile apps.
- System development and individual product design commissioned by the customer

VALUES



Together, for each other, yet individually.

We work in agile teams, yet our employees are given the freedom to approach tasks unconventionally, allowing existing talents and expertise to be optimally utilized. Cross-functional collaboration fosters understanding of the problems and working methods of adjacent areas. Performance is enhanced by direct information flow.

VISION



Innovative and visionary products for our clients

Our vision is to deliver the finest digitalization solutions for our customers, leveraging state-of-the-art technology, holistic efficiency, and exceptional service to take the field to new heights.

VISION



Our actions tomorrow are shaped by what we do today.

We see ourselves as an innovative partner for the digitalization of products and processes. Innovation is our passion. The pursuit of new paths, pushing boundaries – that's what drives us. We use our knowledge and expertise to help our clients gain a competitive advantage and position themselves at the forefront of the market.

THE PIRONEX JOURNEY



Optimization is for processes, innovation is for people.

2007

Founded as individual business

pironex was founded in 2007 as an individual business. This step received significant regional recognition, leading Mr. Hülsenbeck to be awarded the "Courage to Entrepreneurship" prize for his commitment in Western Pomerania.

2008

Conversion into a GmbH

One year after its founding, pironex was converted into a GmbH. Additional employees joined the team and organisational structures were put in place to support growth.

2011

Creation of the piA series (IPCs for industry)

Within the scope of a funding project, our first IPC (piA-AM3505) was developed, which served as a foundation for subsequent products and numerous customer projects.

2014

Electric mobility complements the existing portfolio

Our product range is expanded by innovative products for storage facilities, bicycle, e-cargo bike, e-bike, e-scooter manufacturers, as well as providers of fully automated rental and charging systems.

2017

Construction of new company headquarters

A three-storey office complex with its own production and laboratory facilities has been built on a 2,000-square-metre plot in Rostock's Osthafen industrial area, providing plenty of space for new ideas and employees.

2018

Moving into the new building at Stangenland 4

The team now consisted of 27 employees. With the move, optimal working conditions were created for all areas. Especially the customer-specific electronics and software development could be further expanded.

2019

Launch of our own brands: Street-Points, obALu, IDIOS, AIR GOOD

The innovative company philosophy has resulted in many innovative products. Whether it is interactive games for children, IoT solutions for industry, or sharing systems for modern mobility - innovation is a priority.

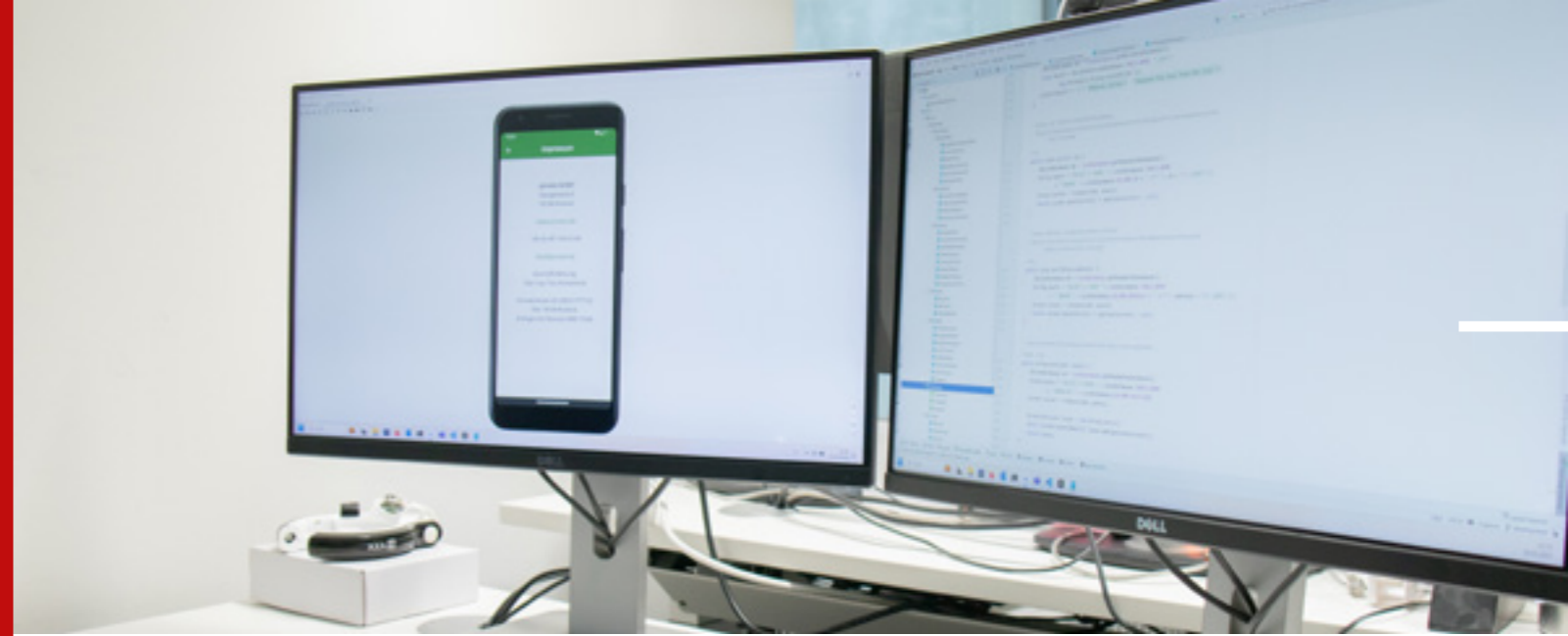
2023

Optimization and further growth

Continuous growth requires adjustments both at the company and product levels. Our products and processes are constantly improved to provide our customers with the best possible solutions.

RANGE OF SERVICES

Product development is professionally managed with pironex GmbH. pironex advises and accompanies you through analysis, conception, and product design - from the initial idea to series production. With technical expertise and extensive experience, we ensure that you can develop your product functionally, cost-effectively, and on time.



01 CREATING A CIRCUIT DIAGRAM

Development and redesign of analog and digital circuits considering EMC, ESD, and environmental directives



02 UNRAVELING OF PCB

Unraveling of single-sided, double-sided, and multilayer boards using the CAD layout software Altium Designer



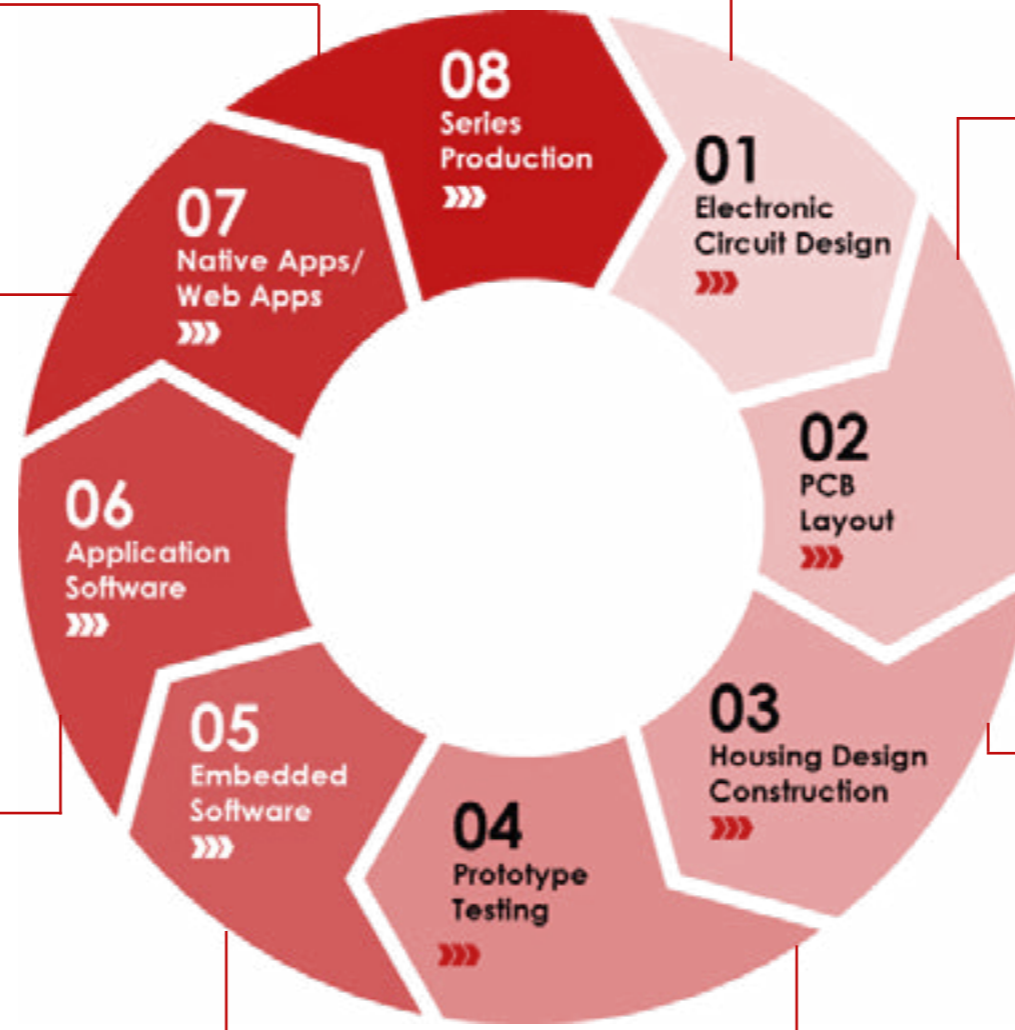
03 DESIGN UND CONSTRUCTION

Starting from the design concept, through prototype construction (mockup), we develop complete enclosure solutions for the products.



04 BUILDING AND TESTING PROTOTYPES

Manufacturing of PCBs and THT / SMT assembly of assemblies, followed by testing according to specifications and requirements.



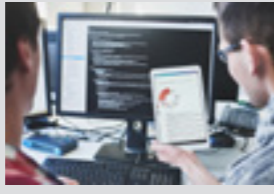
08 SERIES PRODUCTION

Delivery of necessary documents and documentation for series production, as well as support during certification processes.



07 MOBILE APP / WEB APP

Design and development of web-based applications and native iOS and Android apps for system interaction and in the cloud.



06 APPLICATION SOFTWARE

Development of custom, project-specific software as desktop/PC or server applications for Windows or Linux.



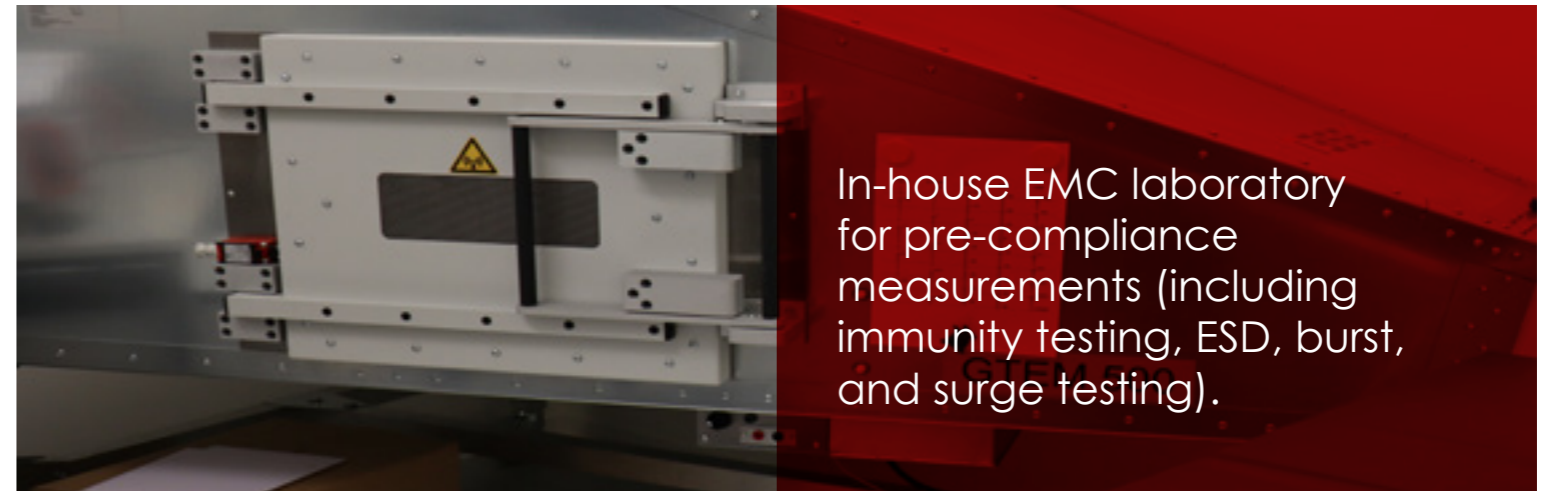
05 EMBEDDED SOFTWARE

Close-to-hardware programming of microcontrollers and drivers, VHDL core design, as well as embedded Linux system development.



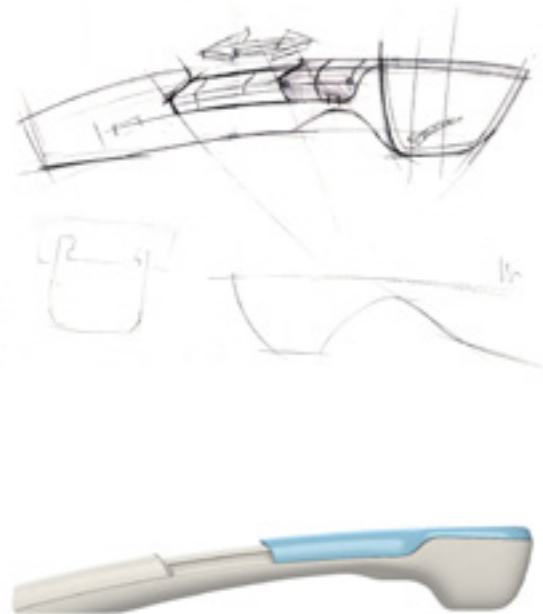
HOLISTIC

PRODUCT DESIGN

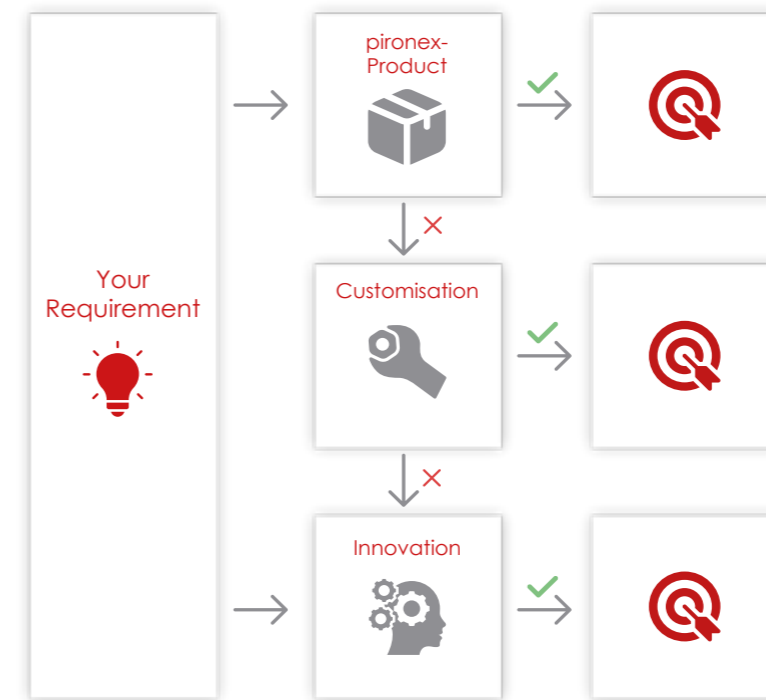


In-house EMC laboratory for pre-compliance measurements (including immunity testing, ESD, burst, and surge testing).

From sketch to complex EMC measurements - We develop user-friendly and secure products.



For pironex, quality is paramount. That's why we prioritise it right from the start of product development. We focus on robust design and the longevity of electronic components. With expertise from various industries, we accompany the customer throughout the entire lifecycle, ensuring quality to the highest standards. Using risk analysis and pre-compliance measurements in our in-house EMC laboratory, we can identify and correct design weaknesses at an early stage. The results are then re-evaluated during the test phase. Only products that successfully pass all tests are put into production or delivered to our customers. Throughout the supply chain - from suppliers, through receiving, manufacturing and assembly, to shipping - we ensure our processes are in place. Throughout series production, we always keep our eye on the zero-defect target.



A custom product is typically developed specifically for a single customer. But this is not always the case. Often an existing product can be modified for the task at hand.

In terms of cost effectiveness, we look at whether a product from our portfolio can be used directly or customised for the customer. Our electronics and software are modular and scalable in terms of performance and I/O functionality. In some cases, the requirements are so specific that the only option is to design the required product from scratch. Whether customised or off the shelf, we always keep our customers' requirements in mind when developing new products.



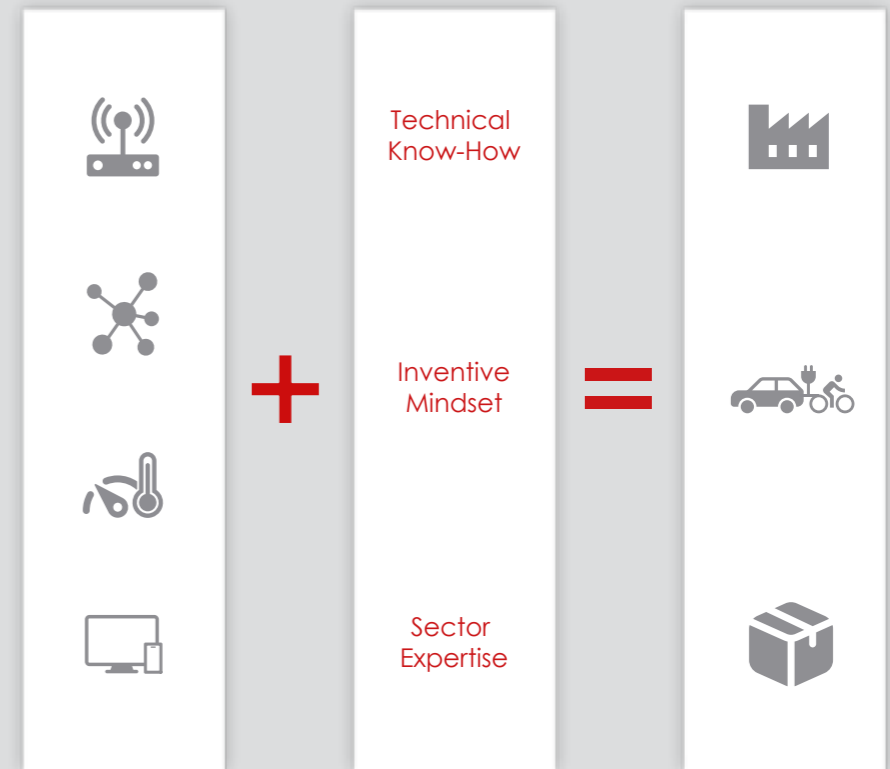
Rapid prototyping - thanks to manual assembly, 3D printing, and milling machines, you can quickly obtain functional and robust prototypes.



Top equipment and services for fast and efficient product development:

- Renderings and 3D-visualizations
- Creation of mockups
- SLA and FDM 3D printing
- Creation of durable milled parts
- SMD and THT prototype assembly
- In-house EMC laboratory

With cutting-edge technologies and extensive know-how from a wide range of applications, pironex is the right partner for the development of innovative solutions in almost all industries.



ADVANCED TECHNOLOGIES



IPCs

The Linux industrial computers and processor modules are robust and suitable for industrial use. Their energy-efficient design allows them to operate for years with minimal power consumption. They are suitable for use in temperatures from -10 to +60 degrees Celsius and comply with industrial electromagnetic compatibility (EMC) standards.



GATEWAYS

The gateways offer functionality, expandability and adaptability to specific requirements. The electronics are equipped with sensors and radio modules and are compatible with a wide range of PLCs, HMIs and embedded controllers. They provide easy and convenient access to plant, machinery and fixed or mobile devices in the field.



SENSORS

With various on-board sensors, our IoT gateways can be used as sensor nodes. By connecting additional external sensors (such as rotary encoders, motion and distance sensors, level sensors, proximity sensors, light barriers, temperature sensors, position sensors, tilt sensors), highly accurate sensor networks can be created.



SOFTWARE

Intuitive operation and modular design characterise pironex software products - from embedded software to application software, mobile apps and cloud solutions. Modular software components are installed on our devices and can be effectively configured or parameterised in the cloud.

For maximum flexibility in product development, our instruments offer a wide range of standard and optional interfaces.





INDUSTRIAL-GRADE & ROBUST SMART IPCs

The industrial computers and processor modules are characterised by their robustness and suitability for industrial use. Their energy-efficient design allows them to operate for years with minimal power consumption. They can operate in temperatures from -10 to +60 degrees Celsius and meet EMC standards for industrial use.

For IoT
and Edge
Applications



IPCs

Processor Modules and Starter Kits

The modules provide an entry point into Linux component development. All signals from the processor are routed through two connector strips and can be configured according to required interfaces.

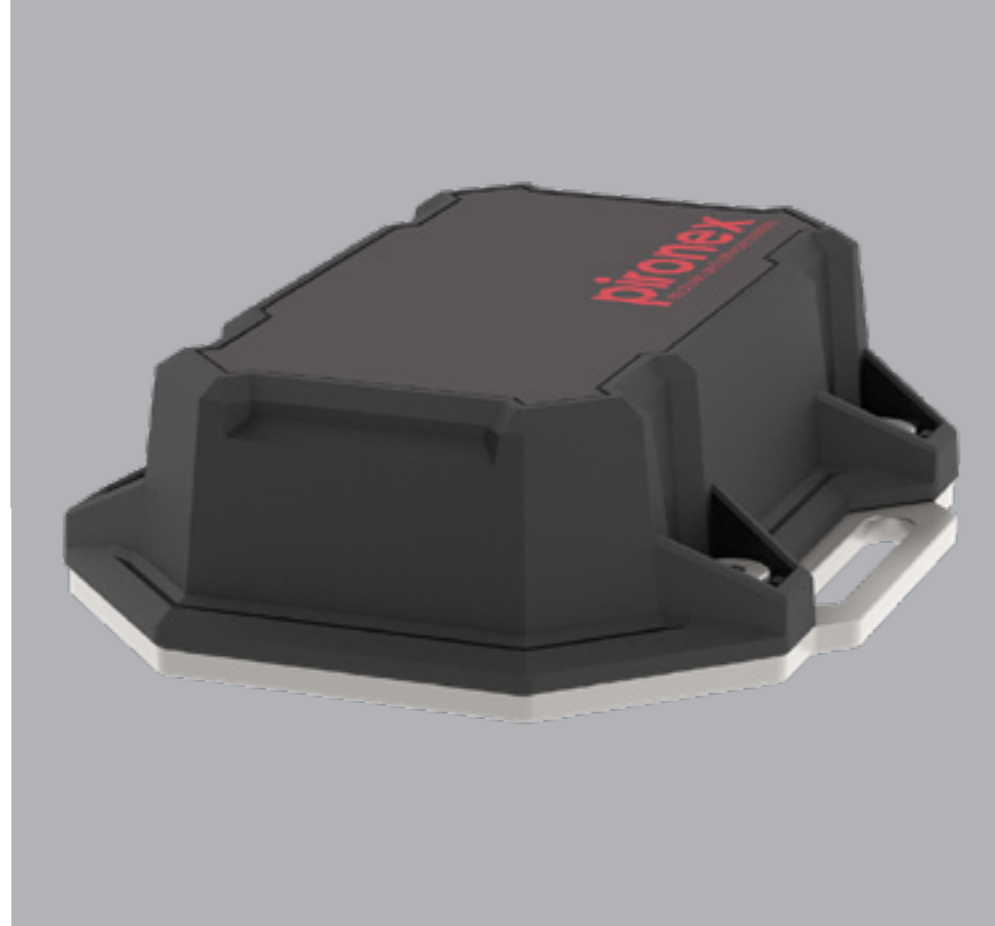
IPCs for DIN rail mounting

The DIN-rail embedded PCs are equipped with low-power processors and are completely fanless. They use a Linux operating system. Numerous industrial interfaces are available for connecting various peripherals and expansions.

Panel PCs with display

The piA-SF and piCAN-TFT touch screen panel PCs feature robust housings available in different IP protection classes. They offer a wide range of applications and allow data exchange via CAN, Ethernet, WLAN, RS485 and USB, as well as wirelessly via mobile networks.

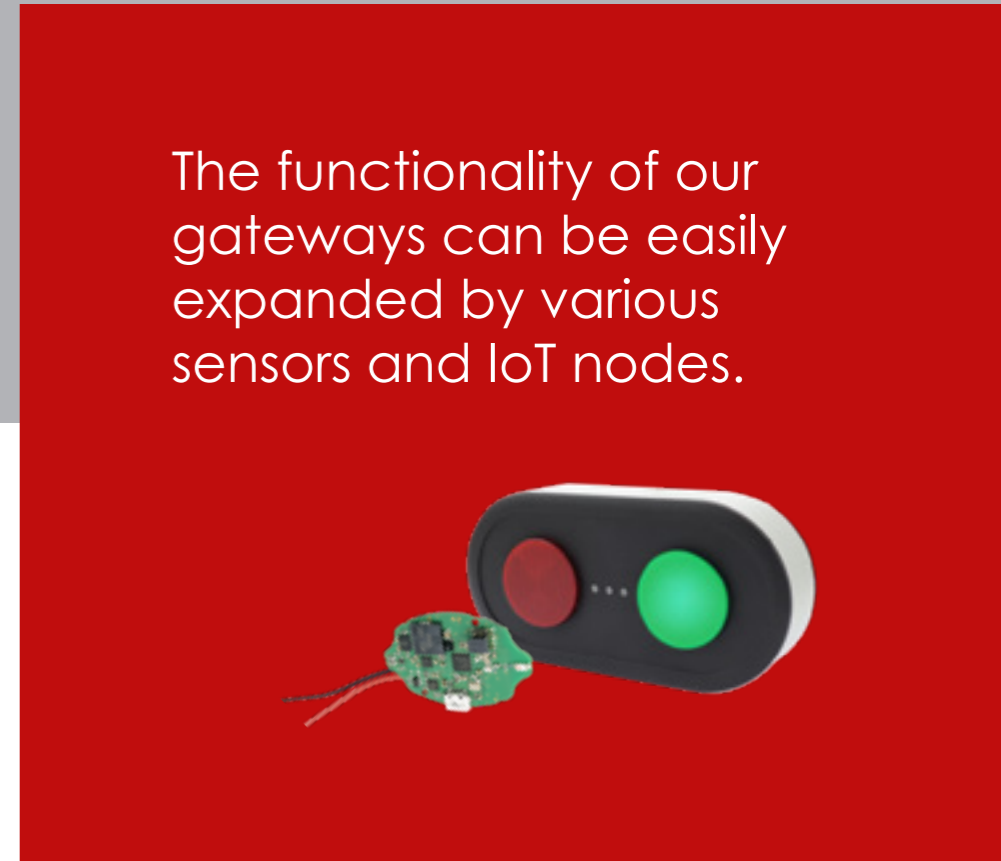
PRODUCT NAME	DESCRIPTION	SKU
piA-AM335x-PM	ARM® Cortex™-A8 Processor module	91120005
piA-AM335x-SK	ARM® Cortex™-A8 starter kit incl. processor module	91120006
piA-AM3354	ARM® Cortex™-A8 IPC in DIN rail housing	91120007
piA-SF	ARM® Cortex™-A8 panel PC with multi-touch display	91120010
piCAN-TFT	ARM® Cortex™-A8 terminal system with 4.3" TFT display	91130257



REAL-TIME ANALYSIS

IOT-GATEWAYS & SENSORS

To transmit machine data from the field to the cloud, for example, pironex has developed and set up an IoT gateway series and its own cloud service. In previous IoT systems, data was only recorded and processed later. The piSmart gateways perform real-time analysis and act autonomously if necessary.



The functionality of our gateways can be easily expanded by various sensors and IoT nodes.



piSmart-Gateway-LE

The piSmart Gateway-LE is an energy efficient IoT gateway. It is used for sharing services, access control or as a retrofit module to upgrade older machines or systems. It is ideal for low maintenance applications.

piSmart-Gateway-LC-2

The piSmart Gateway-LC-2, with its two CAN bus interfaces, is suitable for automotive applications and has been specifically designed for environments with limited space. The use of A-GPS technology also allows the position of vehicles to be accurately tracked.

piSmart-Gateway-LR

The piSmart Gateway-LR is an energy-efficient IoT gateway with LoRaWAN. It can be used as a GPS tracker, data logger, measurement data collector or as a retrofit module in devices, machines, vehicles and systems.



GATEWAYS

PRODUCT NAME	DESCRIPTION	SKU
piSmart-Gateway	Short-range radio, CAN bus, LTE NB-IoT	911130615
piSmart-Gateway-LE	Short-range radio, CAN, RFID/NFC, IO interface, WiFi	911131018
piSmart-Gateway-LC	Short-range radio, GNSS, CAN, LTE NB-IoT, LTE CAT M1/NB-IoT	911130428
piSmart-Gateway-LC-2	Short-range radio, 2x CAN bus (+ CAN-FD), GNSS, LTE CAT M1/NB-IoT	911131011
piSmart-Gateway-LR	LoRa, short-range radio, multi-GNSS, IO interface	911131090
pironex-iot.de	Cloud platform	911130517



IOT-APPLICATIONS AND SOFTWARE

Intelligent software components are installed on your devices and can be easily configured or parameterised in the IDIOS Cloud. On request, we develop customised solutions for your specific use case - always with a focus on data sovereignty, user-friendliness and the latest technologies.

Flexible and modular architecture



Mobile apps for iOS and Android

With Android and iOS apps, you can access your plant, equipment and machinery remotely via a mobile network or locally via Bluetooth, wherever you are. You can monitor and control current operating data or install over-the-air updates.



Cloud Portal pironex-iot.de

The scalable IoT Cloud is a device management tool with multiple visualisation options. The central portfolio dashboard provides a clear view of all projects and operational data. The system supports usage-based role and permission models and is multi-tenant capable.



Client-Interface REST-API

REST API interfaces and WebSocket functionality are available for integration with background systems. These interfaces allow the processing of collected data and the exchange of content between different modules.



SOFTWARE MODULES

PRODUCT NAME	DESCRIPTION	SKU
Module "Anomaly Detection"	Selective, contextual and collective anomalies	911130521
Module "Asset Tracking"	RTLS (Real-Time Locating System)	911130522
Module "Data Logging"	Recording/analysing sensor and CAN bus data	911130523
Module "Geofence"	Virtual fence for GPS-based localisation	911130524
Module "Monitoring"	Remote and long-term monitoring of machines/systems	911130516
Module "Predictive Maintenance"	Real-time analysis for predictive maintenance	911130515
Module "Remote Control"	Remote diagnostics and over-the-air updates	911130514
Module "Sharing"	Fleet and asset management	911130512

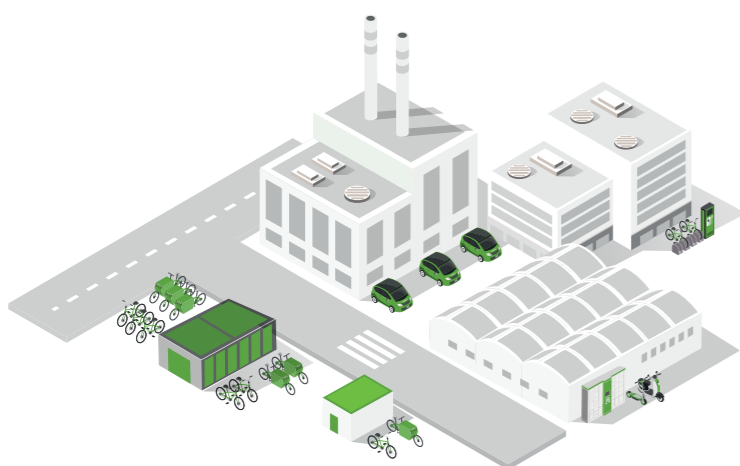
RENT, CHARGE AND ADMINSTRATE E-MOBILITY



obALu unites the world of modern mobility

For the construction of modern parking facilities and sharing projects, pironex offers a complete solution consisting of electronics and software.

The obALu access system consists of mobile IoT telematics modules, electronic smart locks, charging technology and the cloud-based management portal. Whether it's e-bikes, cargo bikes, scooters or car sharing, obALu gives you the freedom to integrate a wide variety of vehicles to develop individual, location-specific fleet offerings. Public or corporate rental schemes can be implemented at low cost and with maximum flexibility. All obALu products are designed, developed and compatible with each other by pironex. This means that your individual mobility project requirements can be met quickly and cost-effectively.



SMART TECHNOLOGY FOR BIKE SHARING AND BIKE MANUFACTURERS



SEMI-PUBLIC AND PUBLIC CHARGING STATIONS



SOFTWARE FOR OPERATORS AND USERS



Different concepts, one solution

The buchungssystem-obalu.de access system is an innovative management tool for mobility providers. It offers fleet and station monitoring and serves as a comprehensive reservation, management and billing system.



The system provides easy access to the cars, bicycles, e-bikes and scooters/mopeds of a modern rental system. The cloud-based software and apps ensure smooth access to the system, provide customers with real-time information and enable vehicle location, rental and return.

LEV charging stations are pre-wired and ready to connect, and can be used immediately after installation and commissioning by an electrician.

Put your brand in the spotlight by focusing on your individual design. A native sharing app for Android or iOS with your own branding is the foundation of your business success.

The obALu service app supports the service team of operators of mobility solutions and parking facilities in the maintenance of their fleet.



BIKE



CAR



SCOOTER



SPECIAL

OUR BRANDS

OUR BRANDS

The innovative corporate philosophy generates functional products.

IDIOS IOT-SYSTEM



idios-system.de

- For the digitalization of devices, machines, and processes
- Flexible IoT-gateways
- Modular software

” With modular gateways, scalable cloud and mobile applications, IDIOS solves digital challenges across industries - from remote maintenance and monitoring to anomaly detection and predictive maintenance.

OBALU ACCESS SYSTEM

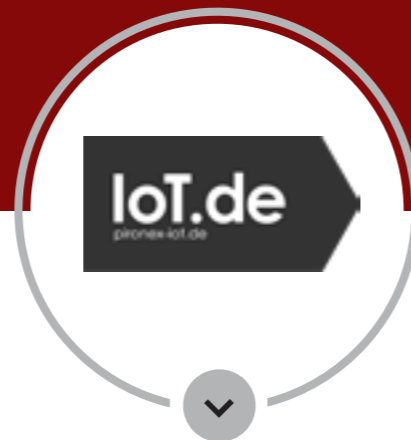


buchungssystem-obalu.de

- Shared mobility solution
- For many types of vehicles
- Open interfaces and customisable design

” With the obALu solution, various vehicles can be integrated into a common management system and lent to users. Management and billing are done through the user-friendly obALu backend platform. Users utilize the native obALu app for Android or iOS.

PIRONEX-IOT IOT-PLATFORM



pironex-iot.com

- IoT database
- Organising and utilising real-time data
- Flexible and expandable

” The pironex IoT platform is your solution for efficient data acquisition, visualisation and device management. It is an independent and flexibly expandable backend system for a wide range of applications, which also allows you to integrate third-party backends.

STREET POINTS DIGITAL TREASURE HUNT

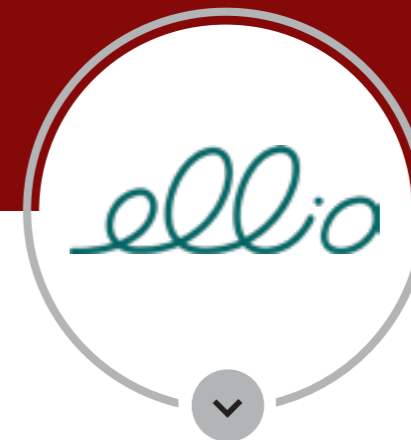


street-points.de

- Connecting social spaces
- Mountable on street lamps
- Awarded with the “IN FORM” logo from the Federal Ministry of Health

” Street-Points is an initiative for active climate protection in cities and communities. Whether on foot, by bike or scooter, participants explore their own neighbourhoods while promoting health. The game encourages children to spend time outdoors and helps them feel safer in their own city.

ELLIO INAKTIVITY DETECTOR



hausruf-ellio.de

- Monitoring of elders
- Integration of customer apps
- Emergency wristband is not needed

” ellio is the alternative to the emergency. The ellio home emergency system detects unusual inactivity in the homes of seniors living alone and automatically notifies family members or friends directly on their mobile phones. This allows relatives to help the elderly person in time.

ELLIOS ALARMSYSTEM



intelligentes-alarmsystem.de

- Burglary detection
- Detailed insights with app
- Virtual sensor camera

” ellioS is the alarm system with intelligent sensors. The system, together with its app, provides detailed insight into environmental parameters, detects unwanted activity and reports changes in the environment, such as temperature or air quality, using various sensors.

The development team
looks forward to your inquiry.

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