



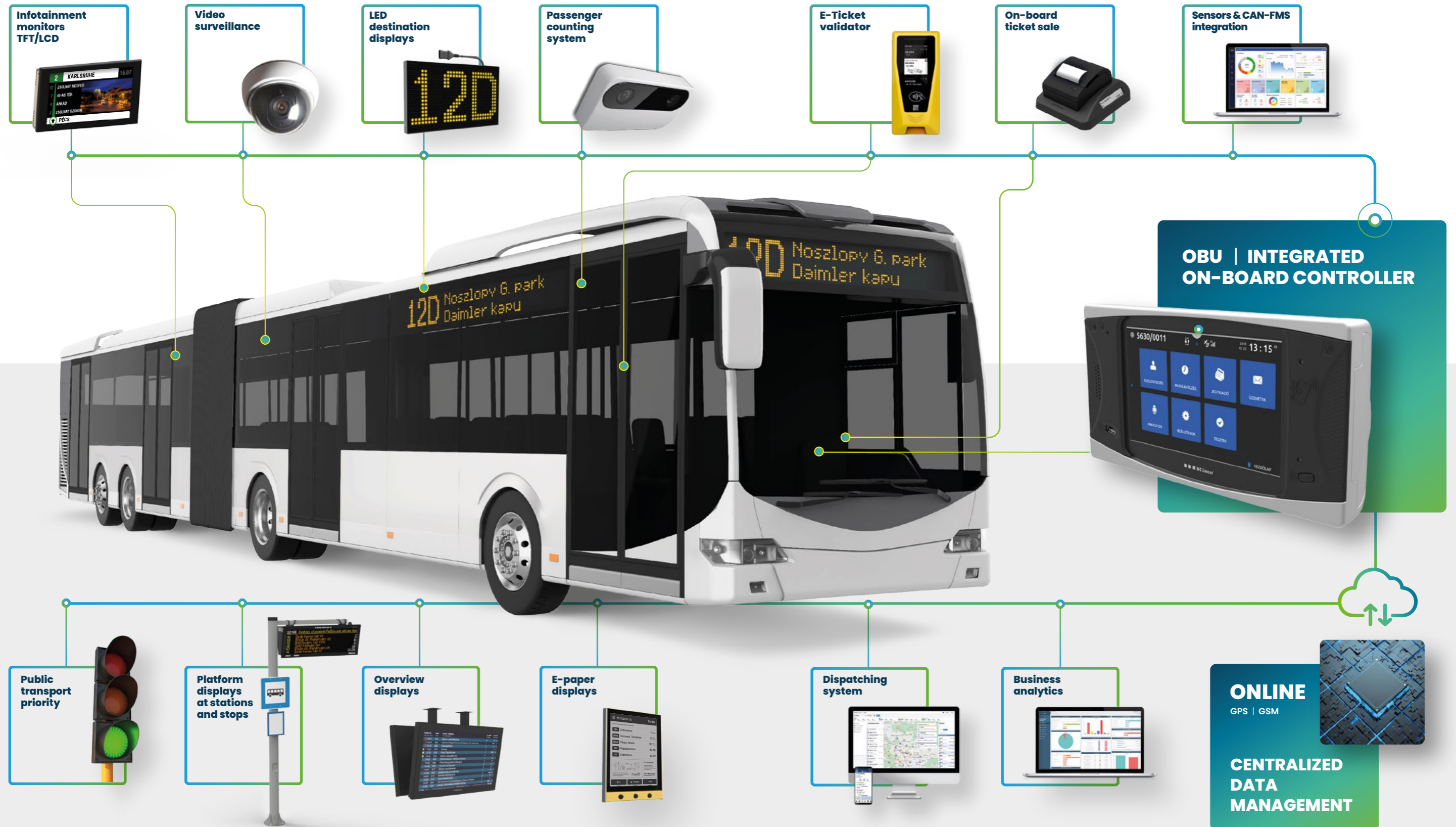
Public Transport

Complex and modular public transport solutions. Displays, transportation management, passenger information.

ONE Vehicle One Controller

Vektor System

Explore our diverse range of bus solutions designed to revolutionize public transportation management. From real-time traffic control to dynamic passenger information systems, safety monitoring and beyond our products offer a holistic approach to optimizing bus fleet operations. The system contributes to increasing passenger experience and satisfaction to make public transport more calculable, economical and attractive.



On-board LED Displays

Elevate passenger experience with our high-brightness LED displays, delivering precise and automated passenger information that remains visible in all conditions. Our versatile displays are customizable

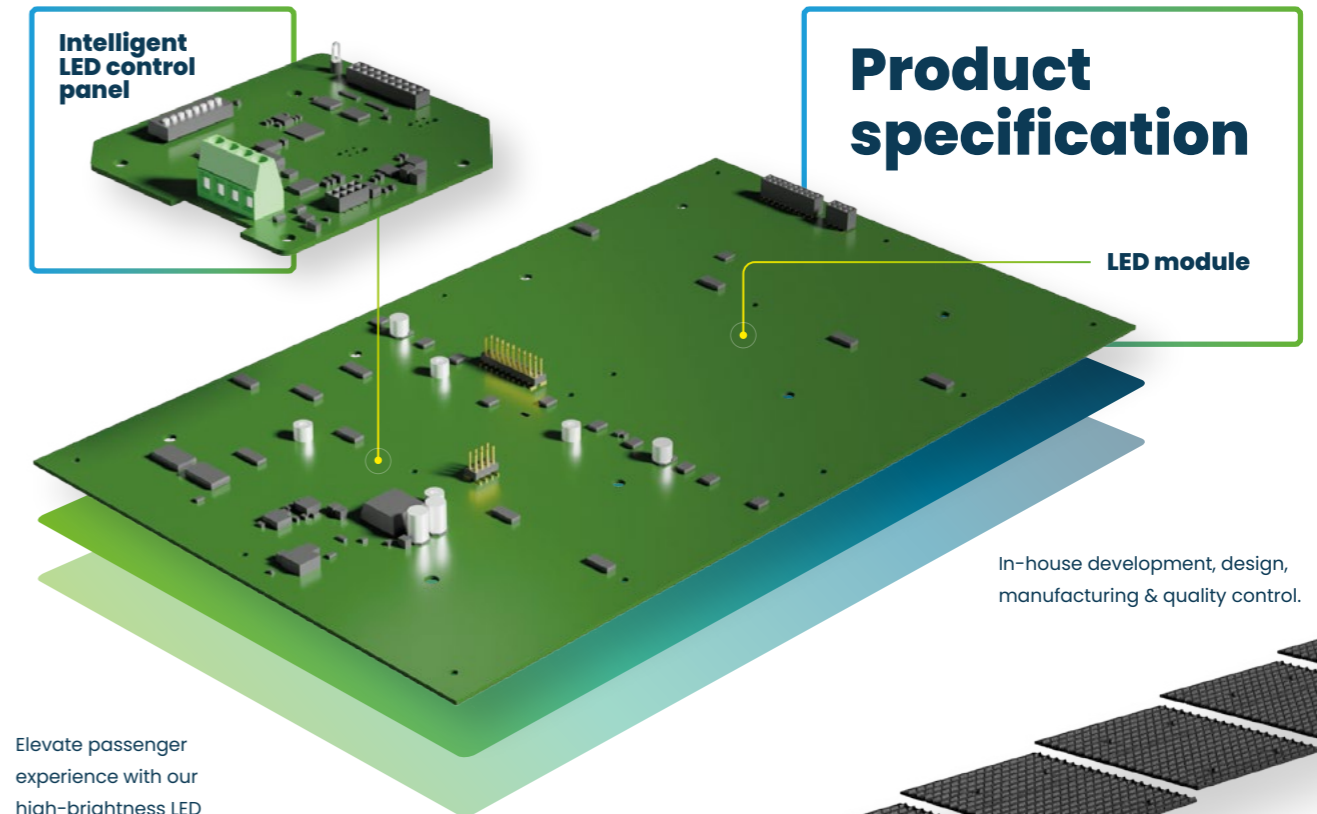
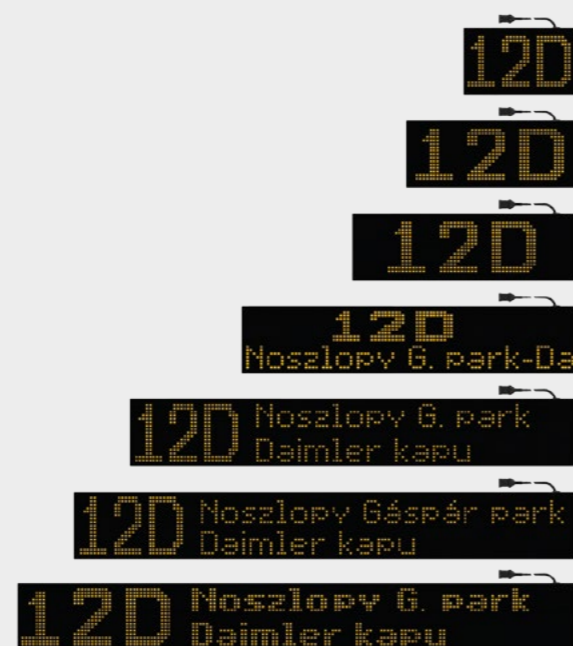
to meet the unique requirements of our partners, offering options in size, resolution, and design preferences, whether "thin frame" or "thick frame," and tailored to any technical specifications needed.



Product highlights

- Designed for continuous operation, vibration-resistant design
- Flat design, easy installation, easy wiring
- Low power consumption, latest SMD LED technology
- Various hardware and software interfaces: RS-485, IBIS, ITxPT, Ethernet
- Software updates (Remote software update)
- Automatic self-diagnosis
- Customer service & support
- Adaptive brightness control
- Display of long messages (floatable from all directions)
- Flashing text, inverse text, scrollable text
- Certified: UN ECE R10, UN ECE R118

Available in any resolution and size



Elevate passenger experience with our high-brightness LED displays.

In-house development, design, manufacturing & quality control.

Modular design
Customizable display size according to customer requirements.

Reliability is key
Durable and maintenance-free design.

Slim & Lightweight
Designed to fit into all spaces with maximum visibility.

On-board Infotainment Displays



Designed for on-board vehicle environments, our high-definition TFT displays offer versatile functionality. With integrated controllers, customizable appearances, and modular constructions, they meet diverse needs effectively.

These displays provide seamless playback of Full HD videos and support real-time route information, transfer connections, and multimedia content. With WIFI connectivity, they can access media updates and central management systems effortlessly.

Display sizes

- 18,5"
- 21,5"
- 29,4"

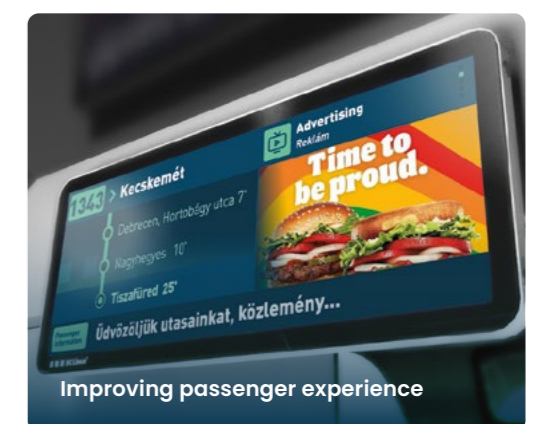


Dynamic, real-time passenger information & infotainment

- Display of current route numbers and destination stations
- Real-time display of route-based stops with arrival time indications
- Display of transfer connections
- Presentation of image, text, and video-based information
- Playback of advertisements, announcements, and messages tied to GPS positions and predefined playlists, whether in full-screen mode or split-screen mode simultaneously with passenger information

Product highlights

- Crystal-clear passenger information
- Various enclosure sizes and colors available
- Single-sided and double-sided versions
- Split-screen content capability
- Vandal-proof, durable design
- Compatible with on-board computers
- Low maintenance requirements
- Various interfaces: Ethernet, DVI/HDMI, WIFI
- Certified: UN ECE R10, UN ECE R118



Stations & Stops Platform LED Displays

Our vandalism-proof LED displays are designed for stops, terminals, stations, indoor and outdoor environments, providing reliable passenger information in all conditions. Featuring high brightness and wide viewing angles, they ensure optimal visibility even in bright sunlight and automatically adjust brightness based on ambient light. The optional integrated audio systems offer voice-based passenger information and Text-to-Speech (TTS) technology. Our displays can be installed on existing structures or with optional metal columns. They can be expanded with optional features like audio passenger information, surveillance cameras, and Wi-Fi access points. Analog clocks are also available for terminal use.

Product highlights

- Latest SMD technology
- Various interfaces: RS-485, Ethernet, GSM, Wi-Fi
- Remote software updates
- Automatic self-diagnosis
- Flashing, inverse, floatable, scrollable text, etc.
- Community information, advertisement, animation option
- In-house development, design, manufacturing & continuous quality control



224x64 - RGB LED display



Available in any resolution, size & color



Stations & Stops Platform TFT Displays

With vibrant colors and high resolution, our LCD displays offer excellent readability and easy adjustment of parameters. Available in single-sided and double-sided configurations, they are suitable for ceiling, wall or column installation.

Product highlights

- Integrated light sensor, adaptive brightness control, based on ambient light
- Various interfaces: Ethernet / optical fiber / LTE
- Weather resistant enclosure
- Anti-reflective toughened safety glass
- Custom, tilted bracket for ceiling or wall mounting
- In-house development, design, manufacture & continuous quality control



Available in any resolution, size & color

Stations & Stops E-paper displays



Our E-Paper displays provide dynamic passenger information with an energy supply of solar panel charged built-in battery. It is designed for outdoor use in all conditions, optionally with illumination. It can display real-time departure information and with the use of the navigation any other information, for example: maps, ticketing info, real-time disruption management information or communal news.

Why E-Paper Technology

- Sustainable passenger information display
- Independent of the power grid
- Easy installation (within 1 hour) on any existing pole
- Excellent readability in all lighting conditions
- On-line management and diagnostics
- Any content can be displayed



Specifications

- Single (1 x 13.3") ; Double (2 x 13.3") and custom sizes according to requirements
- Display Color: 16 grayscale (monochrome and color)
- Resolution: 1200 x 1600 px
- Communication Interface: LTE (GSM), WiFi, LoRaWAN, Ethernet
- Protection: IP65 & Anti-glare safety glass
- In-house development, design, manufacture & continuous quality control

At HC Linear, sustainability is at the core of our mission. We extend the lifespan of our products, minimize energy consumption, and maximize efficiency to reduce waste and promote a more sustainable future.

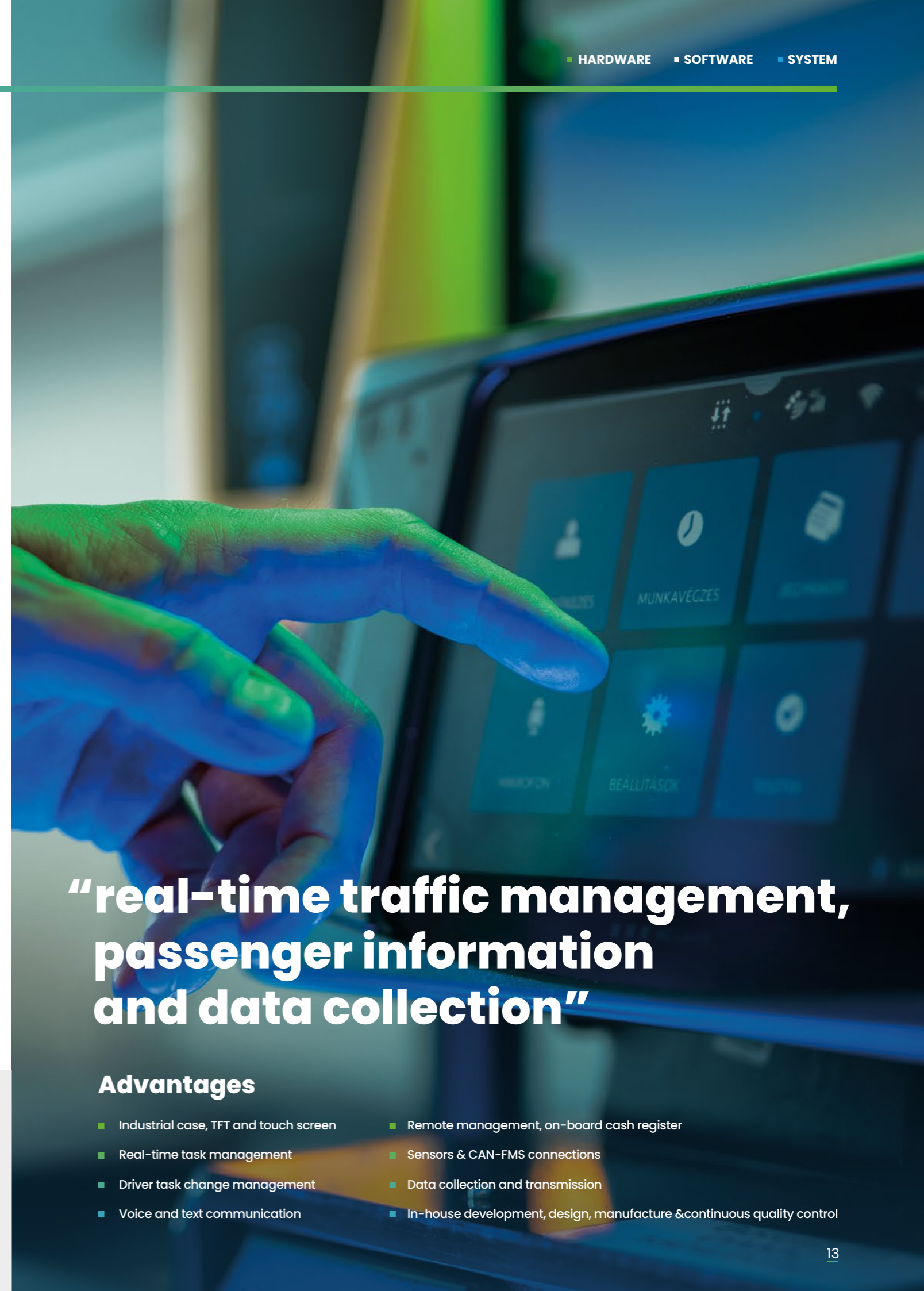
OBU | One Vehicle, One Controller




At the heart of the Vektor System lies our modular, and robust on-board controller. Built on decades of experience, this innovative, award-winning device is designed specifically for buses, trams, and trolleybuses. It comes with all the necessary hardware and software modules for public transport, eliminating the need for additional installation.


The OBU offers transportation companies a comprehensive solution for real-time traffic management, passenger information, and data collection while empowering drivers with vital information necessary for efficient operations.


“One controller rules them all”





“real-time traffic management, passenger information and data collection”


- 


Daily tasks for drivers
- 


On-time schedule management
- 

On-line dispatcher connection
- 

Ticket sale
- 

Passenger info display controller
- 

Voice and text communication
- 

Passenger counting controller
- 

Many more features

Advantages

- Industrial case, TFT and touch screen
- Remote management, on-board cash register
- Real-time task management
- Sensors & CAN-FMS connections
- Driver task change management
- Data collection and transmission
- Voice and text communication
- In-house development, design, manufacture & continuous quality control

Ticketing and Sales



One of the most important features of public transport is the ease and speed of ticketing. Our ticket validator solutions facilitate this process whether it is done in advance or on board.

With our e-ticketing system, bus route performance can be measured, passenger boarding times are faster, and driver tasks are reduced.

“easy to validate”



Validator and e-Ticket module



Our comprehensive e-ticketing system is capable to handle various ticketing platforms and payment schemes.

The system is also capable of receiving SAMs, eID cards, student ID cards and transport cards. The in-house development, design, manufacturing & quality control ensure that it's tailored to your needs.



Intelligent Connection Possibilities

Unlock the full potential of intelligent connectivity with HC Linear's Vektor System.



Ensure efficient traffic management with precise passenger counts for optimal schedule and capacity planning. Our OBU transmits data for enhanced dispatching.



Prioritize passenger and driver safety with our comprehensive security camera system. Integrated with the onboard system or operated autonomously via LTE connectivity, it provides thorough surveillance.



Optimize fleet operations with seamless connectivity and data exchange through our CAN-FMS integration. Monitor vehicle performance metrics, energy consumption, and maintenance schedules in real-time, ensuring regulatory compliance and operational efficiency.



Empower passengers with real-time schedule updates and travel planning through our intuitive browser or smartphone app. Stay informed about route positions, arrival times, and schedule deviations.

Operation Control

Empowering data-driven decision-making. Discover the future of public transportation with our innovative bus solutions:



Dynamic and Real-Time Traffic Management System:

- Proactively manage traffic and respond to incidents in real time with our advanced dispatching system.
- Optimize traffic flow and minimize delays to enhance overall transit efficiency.



Prediction of Dispatch Conflicts:

- Anticipate potential issues and optimize dispatching processes for enhanced efficiency.
- Stay ahead of schedule conflicts to ensure seamless operations and improved service reliability.



Green Light Request Module:

- Minimize idle time and improve travel times with our traffic light priority system.
- Enhance the efficiency of bus routes by prioritizing traffic signals for smoother transit operations.



Data Mining, Analysis and Statistics System:

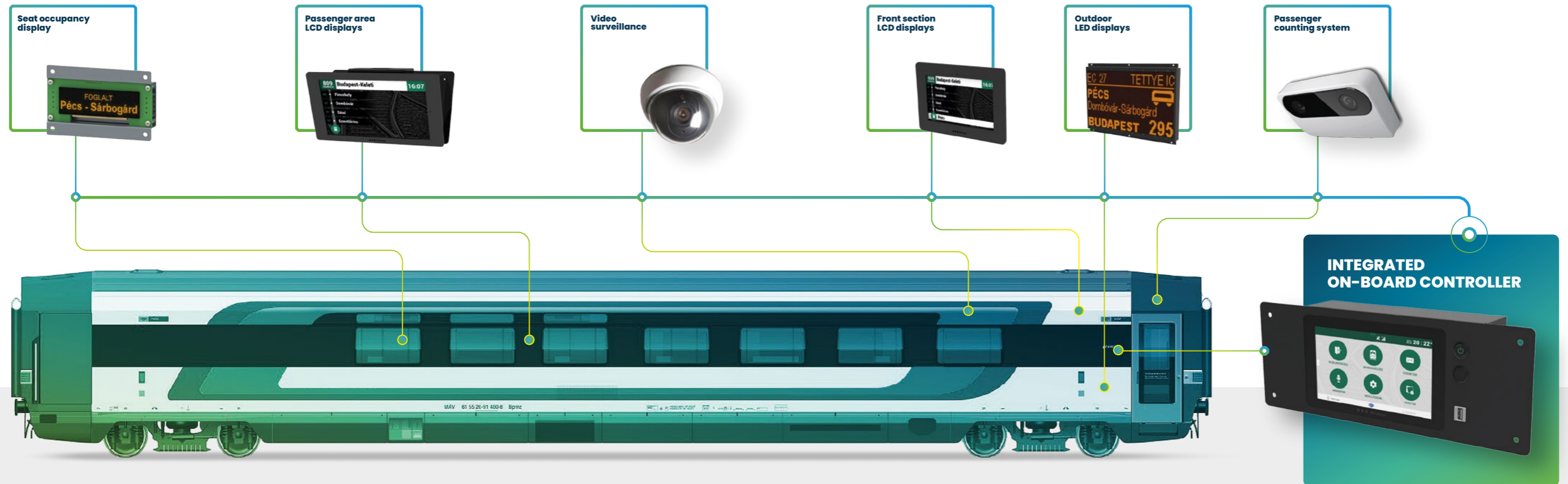
- Gain valuable insights into operational efficiency and passenger satisfaction with our comprehensive analytics platform.
- Utilize data-driven decision-making to optimize routes, schedules and resource allocation for improved service quality.



Experience the future of Public Transportation with our innovative bus solutions.

Rail Solutions

Experience our rail passenger info technology. Our railway solution system is designed to be cost-effective, in-house developed, designed and manufactured. It comprises hardware components and embedded software that collect innovative measurement data, seat occupancy indicators, GPS passenger information and display elements compliant with international standards.



On-board Controller with Touchscreen:

A central management and communication unit featuring a 7" capacitive touchscreen for seamless control and interface with various peripherals.

Environmental Quality Sensor:

Specially designed to withstand railway conditions, this sensor accurately measures temperature, humidity, noise, and acceleration, ensuring passenger comfort.

LED Display:

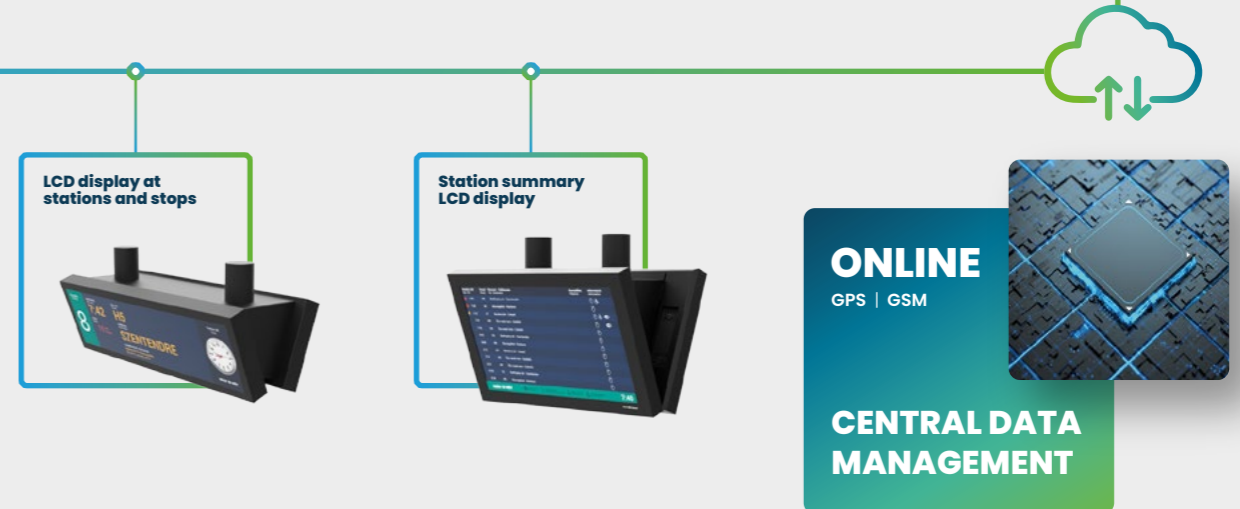
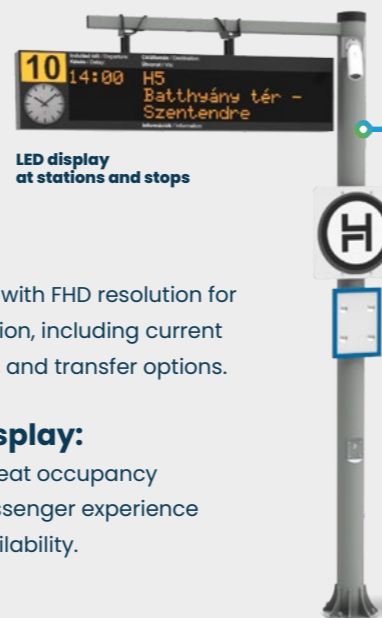
High-brightness LED technology displays directional information, providing clear guidance in any environment.

LCD Monitors:

Rail-mounted LCD displays with FHD resolution for interior passenger information, including current and next stops, train routes, and transfer options.

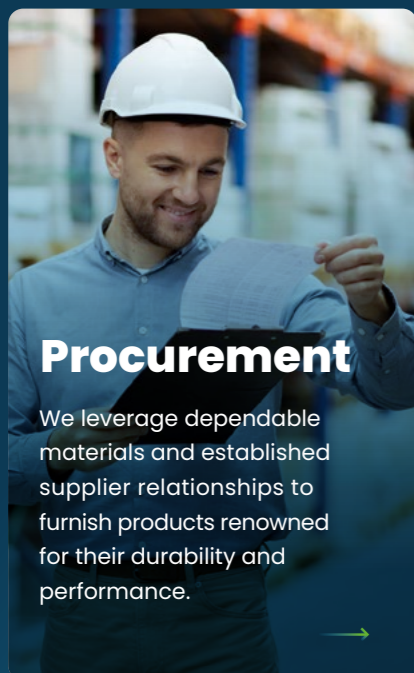
Seat Occupancy Display:

OLED technology displays seat occupancy information, enhancing passenger experience and optimizing seating availability.



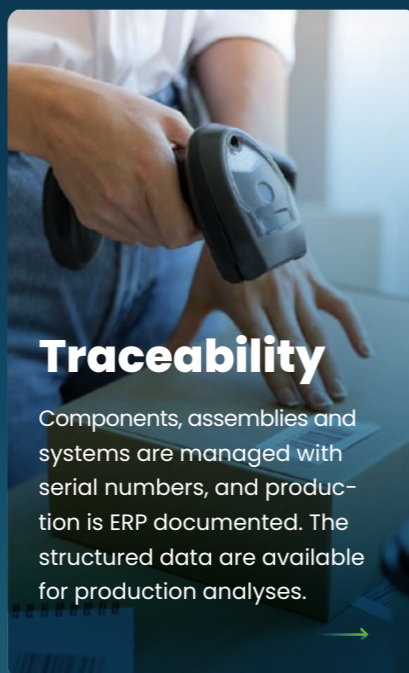
In-house Manufacturing

Manufacturing process 



Procurement

We leverage dependable materials and established supplier relationships to furnish products renowned for their durability and performance.



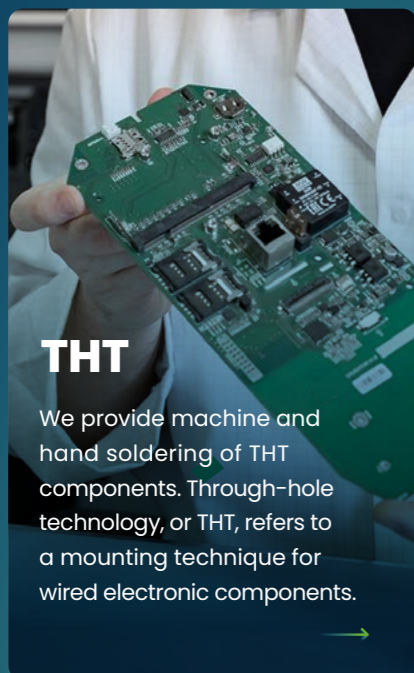
Traceability

Components, assemblies and systems are managed with serial numbers, and production is ERP documented. The structured data are available for production analyses.



SMT

Fully automated in-line SMT production line, multifunctional pick & place machine, even for large panels and special parts, enabling fast and flexible product changeover.



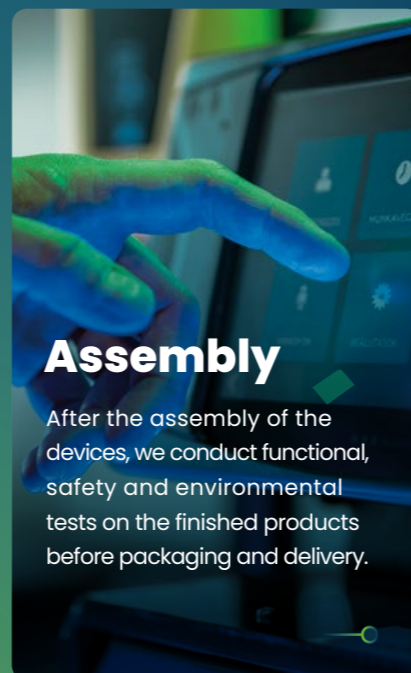
THT

We provide machine and hand soldering of THT components. Through-hole technology, or THT, refers to a mounting technique for wired electronic components.



Testing

With automated optical inspection (AOI), errors in production can be identified using image processing and also using an in-circuit tester (ICT).



Assembly

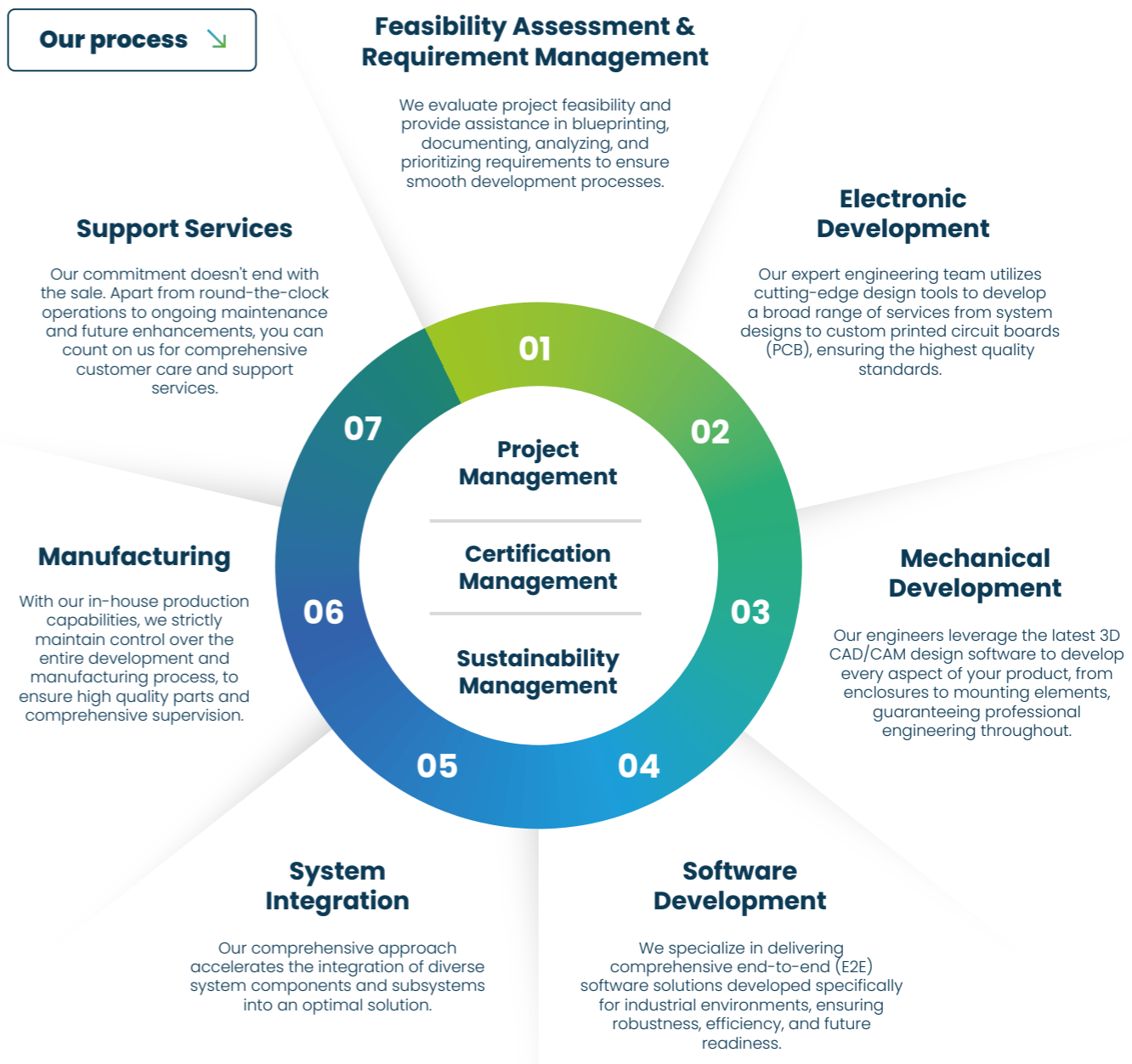
After the assembly of the devices, we conduct functional, safety and environmental tests on the finished products before packaging and delivery.

Transforming vision into reality

From idea to implementation, from production to operation! We are with our partners throughout the entire process, using the knowledge and expertise of our specialist engineering team to turn concepts into working systems. We turn ideas into working solutions!

Our services are tailored to individual needs, whether it is a single sub-task or the creation of a complex, functioning finished product or system.

Our process 



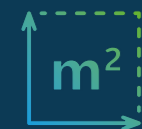
Design, development, production and support in one hand

30⁺

more than 30 years of expertise



1000 +
more than 1000 products developed



2000 m² +
r&d on over 2000 square metres



8500 +
on-board systems in 3 countries



3 million +
used by more than 3 million people per day



VOLVO

SIEMENS

BYD

IVECO

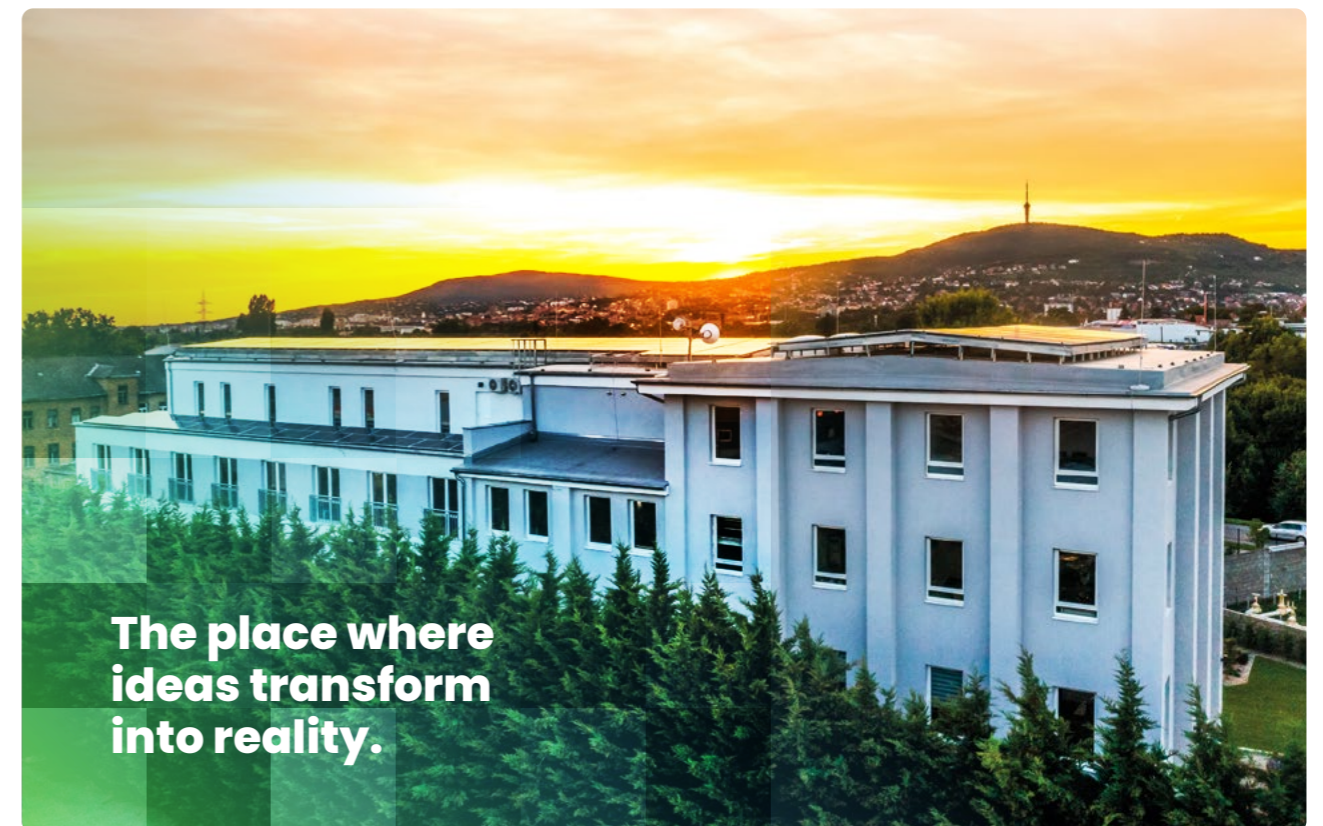
T Systems



→ ...and many other partners

What we are proud of

We are proud of our commitment to innovation and excellence, constantly pushing boundaries to deliver cutting-edge solutions while ensuring quality to exceed expectations and set new standards.



Why us?



Complexity

From concept to working products, we offer seamless R&D solutions with in-house production.



Experience

Benefit from over 30 years of expertise and skilled teams delivering professional engineering.



Efficiency

Our specialization in end-to-end solutions ensures durability and value across various industries.



Sustainability

We care deeply about our planet and the future. We place a strong emphasis on sustainable electronic solutions.



Commitment

Our dedication extends beyond sales, focusing on client satisfaction and collaborative growth.



Support

Enjoy round-the-clock operations, maintenance, and enhancements for optimal performance.

■ ■ ■ **HC Linear**[®]
R&D SOLUTIONS | SINCE 1990

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