



Your gate from chip to cloud

Driving excellence at the Innovative Edge

At N-and Embedded, we drive chip-to-cloud innovation by supporting the full lifecycle—or selected stages—through seamless integration of hardware, software, and data.



Accelerating OEM innovation

We empower OEMs with rapid embedded solution development, combining platform technologies, design expertise, and manufacturing capabilities to accelerate time-to-market worldwide.



Fostering collaborative engineering

Partnering with industry leaders, we deliver innovative product design backed by 30+ years of engineering and manufacturing expertise, helping customers achieve market leadership in embedded computing and electronics.



Enhancing industry-wide integration

Our customized solutions integrate computing, display, and software technologies into industry-specific systems, ensuring optimized user experiences, reliable connectivity, and high performance across markets.

OUR INNOVATION FROM CHIP TO CLOUD



End-to-End System Architecture



Embedded HW & Firmware Design



Industrialisation & Production



Secure Connectivity & Edge Integration



Cloud, Data, Lifecycle Operations

DESIGN

Requirements & System Architecture (Chip to Cloud)

Definition of requirements and end-to-end architecture across hardware, firmware, connectivity and cloud.

HW Design & Industrialisation

Schematics, component selection, PCB layout, prototyping and DFM/DFT.

Firmware & Embedded Software

BSP, drivers, application layer, real-time behaviour, power management, bootloader and OTA strategy.

Connectivity & Edge Integration

Industrial protocols, wired and wireless connectivity, edge logic and telemetry.

Cybersecurity & Compliance by Design

Secure boot, identity and key management, system hardening, vulnerability handling and regulatory compliance (e.g. RED, CRA).

BUILD

Production & Supply Chain Enablement

New Product Introduction (NPI), production ramp-up, test of line, supplier qualification, traceability and industrial stability.

OPERATE

Cloud, Data & Applications

Device management, APIs, data ingestion, analytics/BI, dashboards and digital services – from data to value.

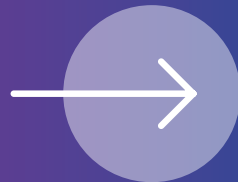
Verification, Validation & Lifecycle Support

Functional, EMC/pre-compliance and environmental testing, release management, fleet monitoring and continuous improvement.

About

At N-and Embedded, we specialize in crafting bespoke solutions, tailored to the unique needs of each client.

With a focus on embedding intelligence into every facet of our offerings, we believe in the power of innovation beneath the surface, where cutting-edge technology and data-driven insights converge seamlessly.



Why choose us



Comprehensive solutions capabilities

Expertise in delivering end-to-end solutions from chip to cloud.



Decades of expertise

30+ years of experience in embedded systems and technology.



Made in Italy

Italian craftsmanship as a commitment to quality and creativity.



Full Product Lifecycle support

From concept to deployment, ensuring seamless product development.



Expert consultancy

Providing tailored guidance and strategic insights.



Global perspective

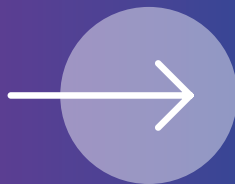
A diverse company background and culture fostering innovation.



Agile development

Flexible and adaptive methodologies for smooth integration.

Setting the benchmark in Embedded Technology



Reduce design complexity

Find engineering support for all aspects of your solution, from individual components to cloud-based services.



Cut costs

We help unlock cost efficiencies from design to delivery, ensuring that your project is completed within budget requirements.



Create distinctive products

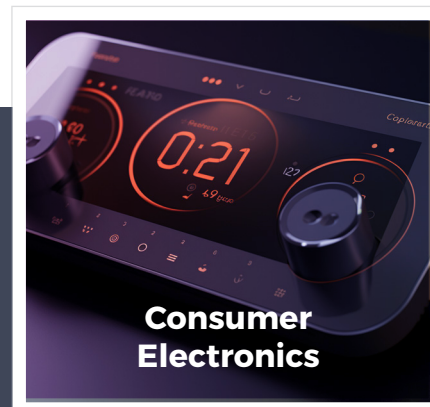
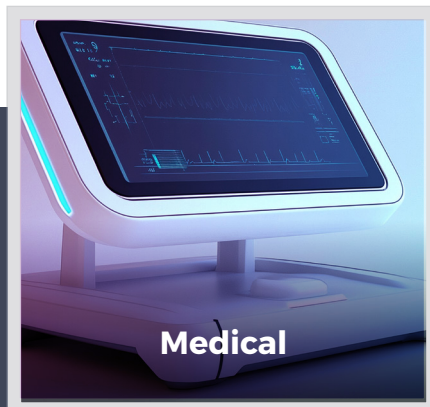
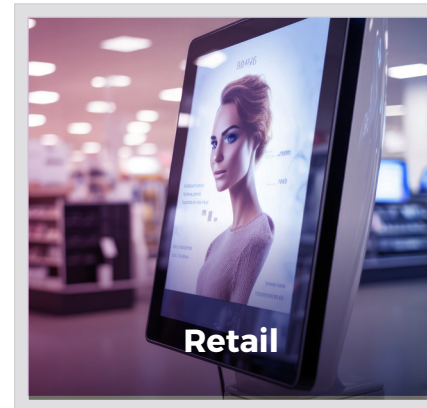
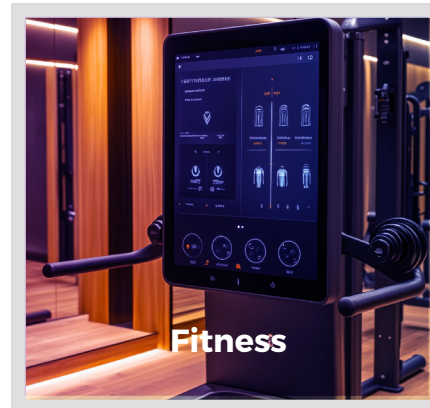
Partnering with our team of experts, skilled in the latest technologies, will enable you to create unique and innovative products that stand out from the competition.



Leverage global reach

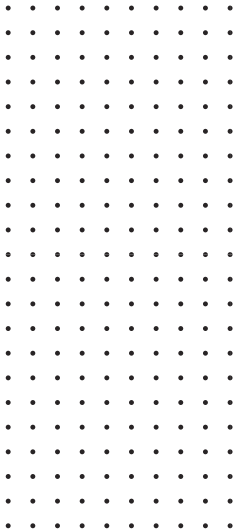
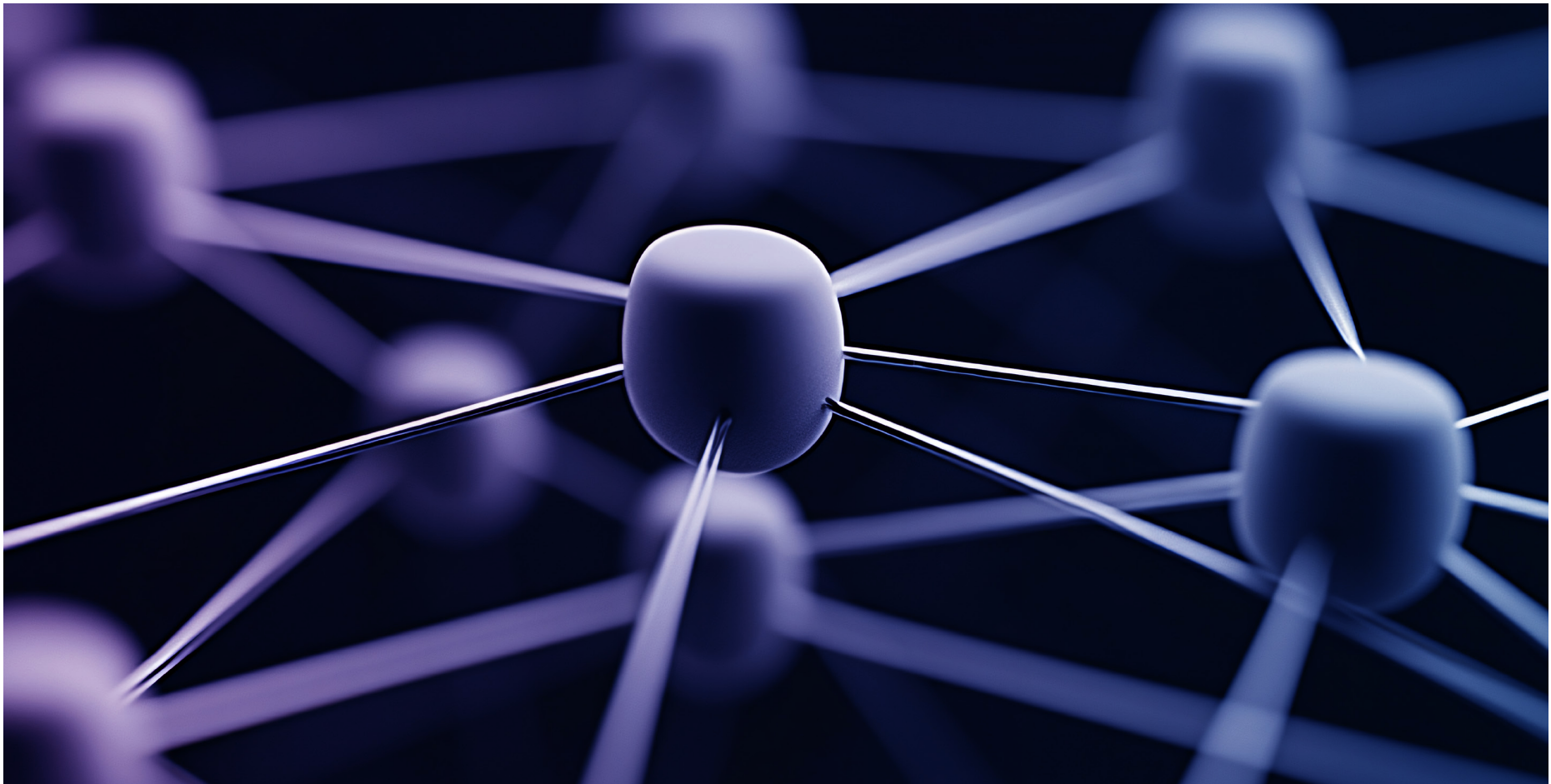
Benefit from our worldwide presence, to optimize your supply chain and logistics operations and scale your business effectively.

Vertical markets



Collaboration in action

Real world success stories



DESIA COFFEE MACHINE

The Desia coffee machine is the result of a collaboration between N-and and Bianchi Industry, a leader in the vending sector. Combining excellent beverages, Italian design and advanced technology, Desia is a Phygital-inspired machine that makes operators' business easier, faster and more profitable while offering the consumer a pleasant and immediate experience.

KEY CONTRIBUTIONS



Advanced LV, LVM and HV Electronic Boards

Part of a kit for table-top automatic machines, these boards integrate a LIN bus transceiver and an ARM core M0+ microcontroller, enabling easy interconnection and firmware updates via LIN bus. They manage various loads with short-circuit protection, soft start, and current monitoring.

- LV Board: Supports up to 8 loads of 7A at 24Vdc, configurable as 0-5V analog inputs, with 2 digital inputs.
- LVM Board: Manages 3 loads of 7A and 1 load of 30A at 24Vdc, 4 analog inputs (0-3.3V), 2 digital inputs, and 3 half-bridges of 2.5A with diagnostics.
- HV Board: Handles 2 high-voltage loads (220Vac/120Vac) with RMS current monitoring, 2 digital inputs, and 2 analog inputs for NTC sensors.

Bianchi
coffee
solutions



High resolution 8" or 10" touchscreen

Exploiting the latest Intel® processors, Windows/Linux compatibility and fast connectivity, this panel enhances user-machine interaction, improving experience and efficiency..

IMX8 Edge Board

This advanced board manages the human-machine interface for table-top automation with an NXP i.MX 8M Mini processor, 2GB RAM, and 8GB NAND flash. It supports an 8" MIPI touch display, LTE 4G, Wi-Fi, Bluetooth, and a 7-port USB HUB, communicating via LIN bus with RTC, 3 digital inputs, 7 outputs, and an ARM M0+ microcontroller.

Powered by
N-and

Peripheral Board

This interconnection board links the monitor to the inverter, enhancing functionality by adding peripherals to the main board. It also features an integrated wireless charging system.

TOF Sensor Board

This electronic board includes a Time-of-Flight (TOF) sensor to measure distances between the sensor and objects or surfaces using 3D technology. It detects users' positions by calculating the time a signal takes to travel and return.

Carrier Board

A custom-printed circuit board (PCB) designed to host the SMARC Module for managing the Panatta system. It supports product customization and allows upgrades by replacing the SMARC Module instead of the entire CPU.

ROSSOPURO BIKE TOUCH

N-and collaborated with Panatta, a leader in high-end 100% Made in Italy fitness equipment, to develop the Rossopuro cardio fitness line. This innovative range seamlessly integrates advanced embedded systems, touch interfaces, and digital solutions into Panatta's expertly crafted machines, delivering an immersive, stylish, and user-centered fitness experience.

KEY CONTRIBUTIONS



Worldwide Fitness Company



21.5" HD Touchscreen Console

Built for the Rossopuro fitness line, this advanced console combines premium materials, durable construction, and an elegant design to deliver a resilient and effortless user experience.

User Interface

Engineered internally to provide a seamless and interactive experience, this intuitive UI boosts workout efficiency, engagement, and personalization, creating an immersive fitness journey.



Cutting-edge innovation



Boards



Human Machine
Interfaces



Embedded IoT



BOARDS

COM & SOM

At the heart of our embedded processing system, our COM & SOM bring high-performance processing, seamless connectivity, and integrated memory into a compact, production-ready PCB. Designed for efficiency and versatility, they simplify development, reduce complexity, and accelerate time-to-market.

- High-performance processing in a compact, ready-to-use module.
- Integrated memory & communication interfaces for smooth operation.
- Optimized for efficiency, scalability and rapid deployment.
- Reduces complexity, cuts costs and speeds up development.
- Reliable, durable and built for innovation.



SMARC MODULE
2.1 3950E 4GB 32GB
eMMC



SMARC MODULE 2.1
6413E 4GB 32GB

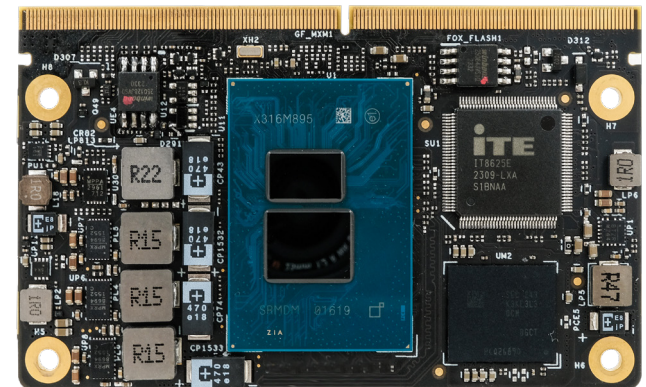


FIND MORE



SMARC MODULE 2.1 N97 RAM: 4GB | Storage: 32GB eMMC

- Intel Elkhart Lake processor for robust computing power
- Compact and standardized form factor for easy procurement and integration.
- Extensive connectivity options – USB, PCIe, SATA, LVDS
- Reliable solution for digital signage, medical devices, and industrial control



BOARDS

SBC

Our Single Board Computers combine high-performance computing, versatile connectivity and a compact design into a single, all-in-one solution. Built for industrial automation, IoT, and embedded applications, they offer efficiency, scalability and long-term reliability.

- Compact Form Factor to maximize space efficiency while delivering powerful performance.
- Versatile connectivity supports seamless integration with multiple peripherals and external devices.
- Robust performance through high-powered processors for demanding applications.
- Scalable architecture designed for future upgrades and system expansions.



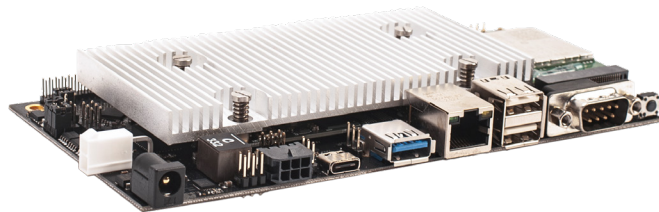
**NP CPU &
CONNECTIVITY
BOARD**



**NVP3399 MINI
PC 4GB 32GB**



**N-ViPi 3568RK
EDGE**



NViPi 3568RK EDGE BOARD 2GB 8GB 24VDC WIFI 485 MULTI DISPLAY

- Powerful Processing – Delivers high performance for demanding applications
- Extensive Connectivity – Gigabit RJ45, 2.4G/5G WiFi, and 4G wireless support
- Versatile Expansion – Compatible with multiple peripherals for enhanced functionality
- Designed for developers, enthusiasts and businesses

BOARDS

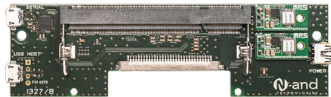
CARRIER BOARDS

Our Carrier Boards provide a robust foundation for flawless integration in embedded systems. Designed for modern computing demands, they offer optimal functionality, compatibility and performance across various industries.

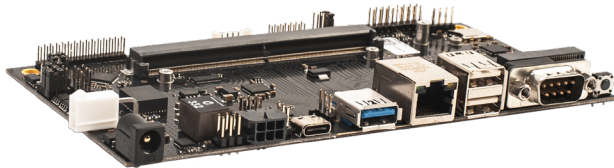
- Seamless integration with a wide range of embedded applications
- Versatile and scalable to support multiple configurations
- High-performance computing optimized for efficiency
- Reliable and durable for long-term stability
- Industry-ready for industrial, medical and IoT applications



FIND MORE



MINI CARRIER BOARD



SMARC 2.1 CARRIER BOARD FOR NViPi FULL

- Compact design ideal for stationary applications
- Supports SMARC 2.1 computer-on-modules for scalability
- Multiple embedded interfaces, USB-C, USB 3.0, and audio codec
- Versatile display connectivity for diverse applications
- Extended temperature range support for industrial use
- Optimized for low-power x86 Intel processors

SOLUTIONS

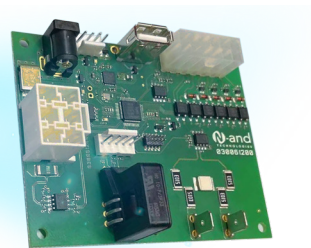
Our comprehensive solutions ensure seamless connectivity and optimal performance at every stage, from hardware to cloud services. We provide a cohesive, streamlined approach tailored to your needs.

- End-to-end integration for smooth project execution
- Innovative hardware and advanced cloud solutions
- Expert support from conception to deployment
- Optimized connectivity and performance
- Scalable, efficient and future-ready solutions



4CR PLATFORM BOARD 220Vac & 24Vdc

- Proactive failure detection prevents downtime and productivity losses
- Sensor-free electrical signature analysis enables early issue detection
- Non-intrusive and cost-effective for easy integration
- Extends machine lifespan and enhances operational efficiency
- Compatible with existing systems for phased implementation



4CR

Sensorless predictive
maintenance platform

Application for hot vending machine beverage

Our advanced predictive maintenance solution ensures optimal performance and reliability for hot vending machines by detecting component failures before they occur. Using intelligent current pattern analysis, the system identifies unusual actuator behavior, optimizes machine operation, and minimizes downtime. Designed for effortless integration across a wide range of vending machines, this non-intrusive technology enhances efficiency while reducing maintenance costs.

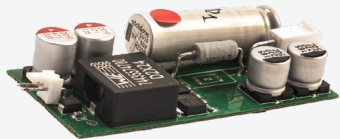
ACCESSORIES

Our accessories are designed to meet all your embedded needs with innovation and efficiency. Whether for display integration or power conversion, our solutions ensure seamless operation, reliability and versatility.

- Compact and lightweight design ideal for space constrained environments and embedded systems
- Efficient power management with optimized power conversion for enhanced stability and reduced energy loss
- Durable and reliable build designed for long lasting performance in industrial and commercial applications



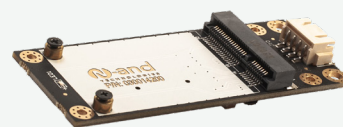
FIND MORE



**24VAC TO 24VDC
CONVERTER**



**USB-C TO eDP
CONVERTER BOARD**



**Mini PCIE Card with SIM
to USB (Type-A)**



**LED BACKLIGHT BOARD
12V 21W**

HMIs

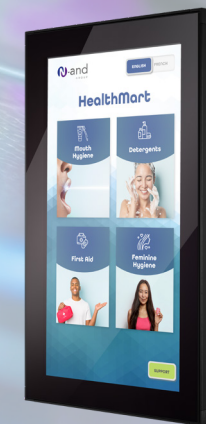
N-Touch HMIs combine computing, display, and software technologies to serve as a vital component in embedded systems across industries like vending, fitness, retail and transportation.

By enabling intuitive human-machine interaction, they ensure efficient control, real-time monitoring, and seamless communication for managing complex processes.

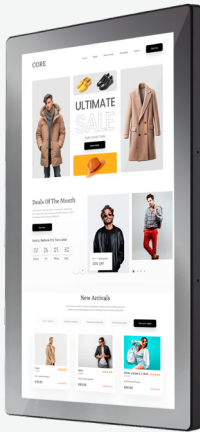
- Integration of touch functionality for resistive, capacitive and projected capacitive technologies
- Tempered vandal-proof Safety or Gorilla Glass™
- Modern and robust design
- Projective-capacitive touch panel
- Hi-resolution display for industrial and commercial applications
- Intel® processors
- Windows and Linux OS supported
- Fast connectivity through 4G/LTE, LAN, Wi-Fi, Bluetooth
- International standards compliance



N-TOUCH 15



N-TOUCH 15 OUTDOOR



N-TOUCH 21 MIRROR

A mirror glass touchscreen that combines elegance with advanced functionality, offering a sleek, reflective surface that transforms into an interactive display with a refined, modern aesthetic.



N-TOUCH 21

READ MORE



N-pay



N-PAY5

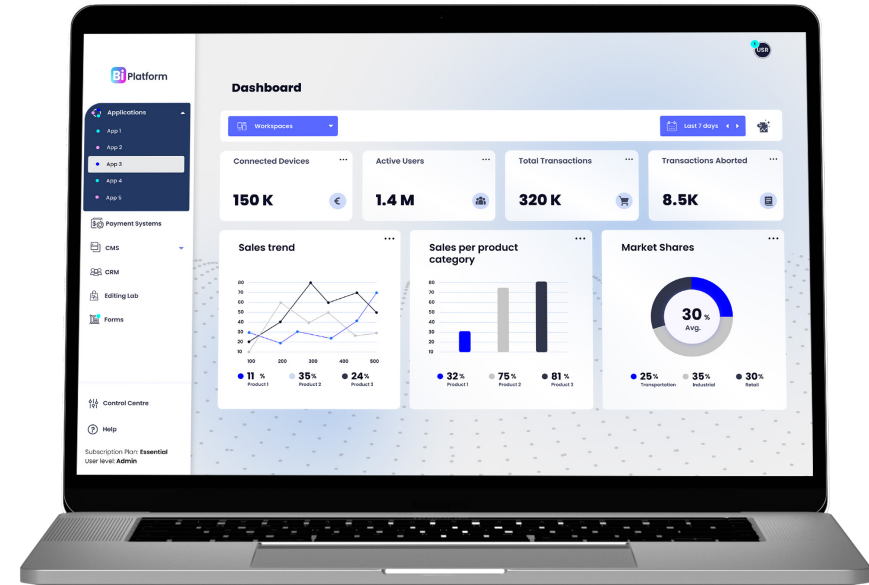
All-in-one cashless and connectivity platform

- Expansion capabilities through N-and Sniff and VMP Link
- Advanced connectivity with Bluetooth and NFC reader
- PRO and Advanced version with barcode reader and camera
- Access control
- Compact and easy to install
- Connected in the Cloud to VendAware™ business intelligence platform for maximum operational efficiency
- 5" multitouch capacitive screen for better usability and improved user experience

EMBEDDED IoT

N-and BI platform – PaaS for IoT & Data Ecosystems

N-and BI platform, our innovative PaaS for IoT, simplifies the creation and deployment of data ecosystems by eliminating complex infrastructure management. Designed for seamless integration, it empowers businesses with advanced business intelligence and analytics capabilities to drive informed decision-making.



Advanced Real-Time
Business Intelligence



Dynamic Content
Management



Seamless
Connectivity

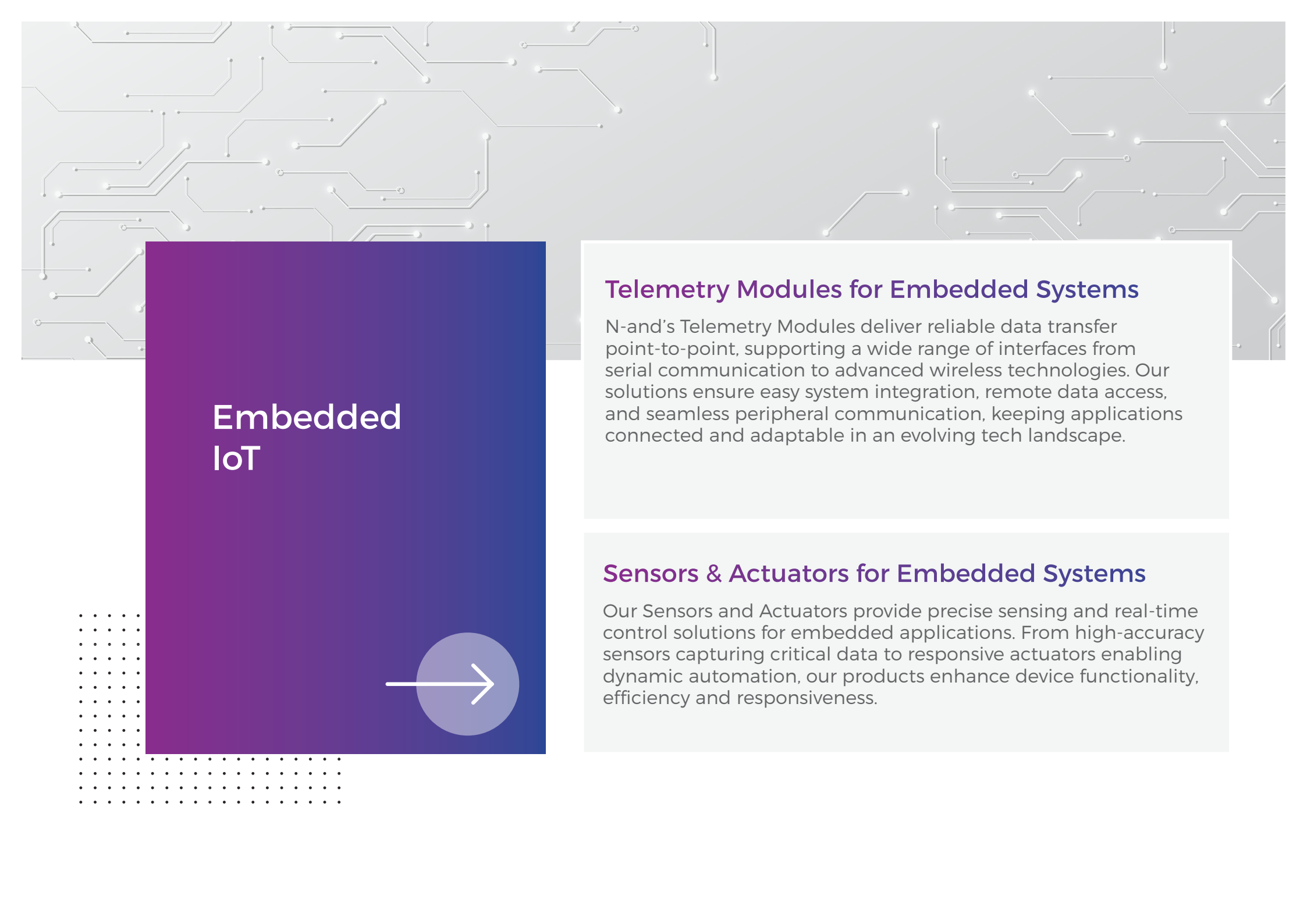


Efficient Device
Management

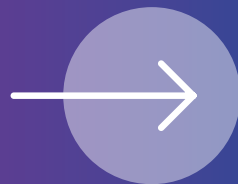
REQUEST A DEMO

sales@n-andgroup.com





Embedded IoT



Telemetry Modules for Embedded Systems

N-and's Telemetry Modules deliver reliable data transfer point-to-point, supporting a wide range of interfaces from serial communication to advanced wireless technologies. Our solutions ensure easy system integration, remote data access, and seamless peripheral communication, keeping applications connected and adaptable in an evolving tech landscape.

Sensors & Actuators for Embedded Systems

Our Sensors and Actuators provide precise sensing and real-time control solutions for embedded applications. From high-accuracy sensors capturing critical data to responsive actuators enabling dynamic automation, our products enhance device functionality, efficiency and responsiveness.



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