VISION VOLT

‹ Electronic hardware solutions and consulting company / ›

We transform **ideas** into **innovative solutions.**

VISION VOLT

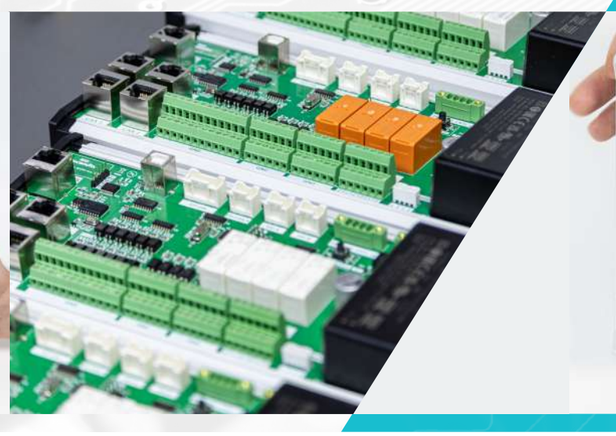
Customized hardware and firmware development, that meets your needs.

We are an experienced and dedicated provider of customized hardware and firmware development, striving to meet client's specific needs efficiently and professionally.

With its networks of specialized partners, it offers a wide range of services in areas related to product development, ensuring quality and transparency throught the process.









Since
2017

03
In house specialized team

27
Developed Projects

15
Regular clients

32
Distinct Clients

12
Partnerships

03
Projects worldwide

01
Prototyping and Assembly Line

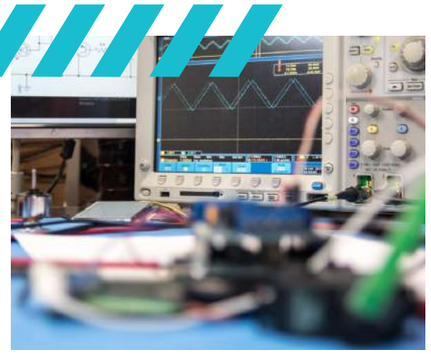
Compliant
Hardware

Reliable
Process

Outstanding
Results

Process

Reduced time-to-market throught a streamlined process



5 steps for sucess

‹step1›

Meet

Project Assessment

Understanding needs and objec-tives, aligning expectations, and defining the path to project success.

‹/step1›



‹step2›

Design

Architecture & Budget Definition

Creation of innovative and functional solutions with a focus on efficiency, aesthetics and technical feasibility.

‹/step2›

‹step3›

Development

Hardware & Software Implementation

Transformation of concepts into reality through custom hardware design and firmware/software development.

‹/step3›

‹step4›

Test

Validation Against Specifications

Performance, reliability, and com-pliance ensured through rigorous technical and functional testing.

‹/step4›

‹step5›

Manufacture

Prototype or Final Product

Manufacturing of prototypes or full production runs, ensuring scalability and on-time delivery.

‹/step5›



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Services

[Electronics]

- Schematics Design
- PCB Layout
- Analog & Digital Circuit
- RF Communication
- Power Supply Services

[Software]

- Embedded Software Design
- C and Assembly Language
- RTOS
- Mobile App Development
- User Interface Design

[Manufacturing]

- Prototype Development
- PCB Service
- Final Assembly
- Product Test
- BOM Cost Reduction

[Consulting]

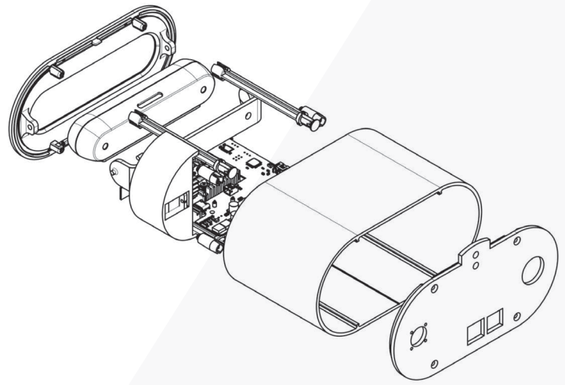
- IoT Solutions
- Turnkey products
- End-of-Life Redesign

[CAD]

- 3D enclosure Design
- Rapid Prototyping
- MDF and Acrylic

[Troubleshooting]

- Problems in existing products
- Hardware/Software interface
- Modules interconnection



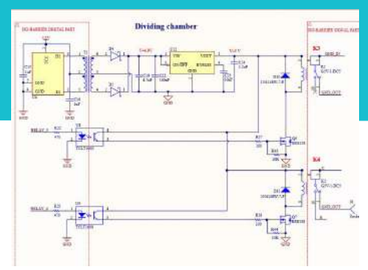
One partner, all the solutions.

Complete, ready-to-use solution, from development to delivery, for all your electronic design and manufacturing requirements.

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Areas of expertise

Founded to bridge innovation and practicality, we focus on critical electronics disciplines essential for creating reliable, efficient and future-ready technology solutions.

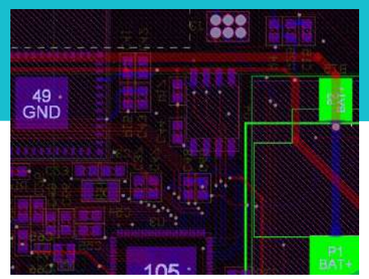


‹expersite_skill1›

Electronic Schematic Design

Electronic schematics engineered focusing on reliability, performance and integration flexibility, delivering robust circuit tailored for complex systems and varied industry requirements.

‹/expertise_skill1›

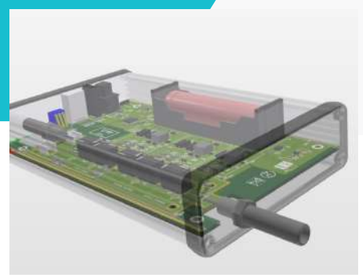


‹expertise_skill2›

PCB Layout & Hardware Development

Production-oriented PCB layouts with robust, production-ready hardware, designed for electrical integrity and long-term reliability, ensuring seamless progression from prototype to large-scale production without compromising quality.

‹/expertise_skill2›



‹expertise_skill3›

Embedded Systems Engineering

Custom embedded electronics development focused on integration and adaptability, providing solid foundations for innovative product design in automation, sensing, and communication applications across several industries.

‹/expertise_skill3›



‹expersite_skill4›

Embedded Firmware Development

Engineering optimized code for microcontrollers and embedded platforms to enable intelligent control, efficient performance, and reliable operation in demanding environments.

‹/expertise_skill4›



‹expertise_skill5›

Application and Interface Software

Developing intuitive applications and user interfaces that enhance usability, real-time monitoring, and provide precise control across industrial, commercial, and IoT environments.

‹/expertise_skill5›



‹expertise_skill6›

System Integration & Optimization

Unifying hardware, firmware, and software into cohesive systems, leveraging microcontroller or FPGA-based architectures for seamless interoperability in evolving industrial and commercial environments.

‹/expertise_skill6›

Other Competencies

Beyond design, our capabilities include testing, validating and producing innovative electronic solutions for real-world problems



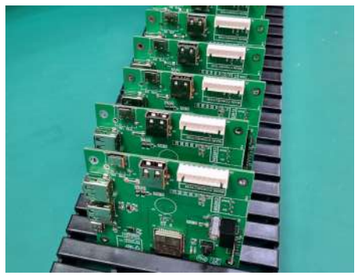
[Real Test Scenario]

Conducting full-scale field trials of new metering systems in industrial water distribution, closely monitoring consumption.



[Laboratory Test]

Testing devices against laboratory standards using calibrated equipment, ensuring compliance with technical specifications and applicable regulatory guidelines.



[Micro-Production]

Producing small batches with THT and SMD components (›=0402) enabling rapid prototyping and limited-run manufacturing with consistent quality

Intelligence Behind the Hardware

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From start-ups to estabilished companies,

it all starts with the desire to take te next step.



[DoctorVida Pocket]

Portable device for isothermal amplification of viral genetic biomarkers



[Wearable EEG]

Helmet for recording brain electrical signals through electroencephalography.



[Beamer]

IoT device for collecting RFID tag data, supporting multiple simultaneous connections using LoRa



[Sensaway]

Monitoring device for aquaculture sensors providing real-time data collection and alerts.



[Biocheck-in]

Automatic dispenser for antiseptic gel with wrist temperature measurement.



[3D Computer Vision]

Single-board computer for local image processing and machine learning



[Wis-Connector]

Data acquisition device through the HAN port of any smart electricity meter and transmission via Wi-Fi



[TriMUX]

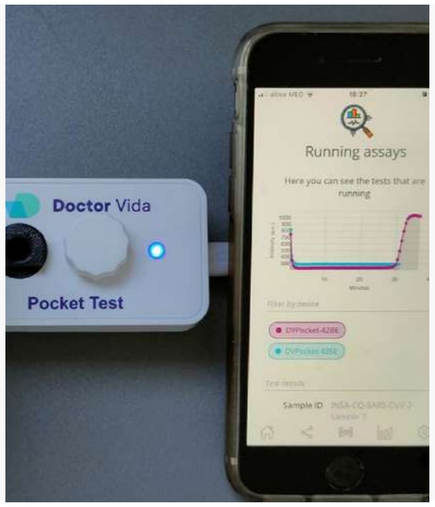
Modular system for low-noise signal multiplexing with triaxial interfaces, ensuring minimal degradation and high isolation for calibration labs.

Get to know more on the website

ALMINA Minas do Alentejo, SA
aralab
beamian
greenapple
Lampsy
IPO
IBER-OLEFF
STAB vida The Home for Gene Technology
sentistic
TecniDelta
TEKON WIRELESS SENSORS TECHNOLOGY
ynvisible
SENSAWAY
watt is Intelligent Solutions
Precendia
GNS Gabinete Nacional de Segurança PORTUGAL

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Doctor Vida Pocket

Portable, handheld device for isothermal nucleic acid amplification of viral genetic biomarkers.

‹Client›
StabVida

‹Year›
2019

‹Sector›
Point-of-Care
Medical device

‹Quantity›
200+

Designed for detection of viral RNA (e.g. SARS-CoV-2) using real-time fluorescence-based LAMP. ts compact hardware integrates precise optical detection and onboard processing to ensure reliable results in 20–50 minutes with minimal hands-on time. It brings lab-grade accuracy to near-patient testing, with complete control through an mobile app.

// Microcontroller-Based System
// Wi-Fi & BLE Connectivity
// Intuitive Color Status Indicators
// PID Temperature Control
// USB-C Standard Power Interface
// Mobile App Control
// Compact & Lightweight Design
// Real-Time Data Transmission
// Small-Batch Production
// CE-Certified Device

A technology platform delivering fast results created in re-sponse to the challenges of COVID-19



‹Value added›

True portability time to market

Ultra-compact and lightweight design makes it ideal for field or point-of-care use.

Rapid and accurate diagnostics detected per day

LAMP coupled with re-al-time fluorescence yields results in under an hour

Smartphone -driven workflow

Full control and results management via a dedi-cated mobile app simpli-fies operation

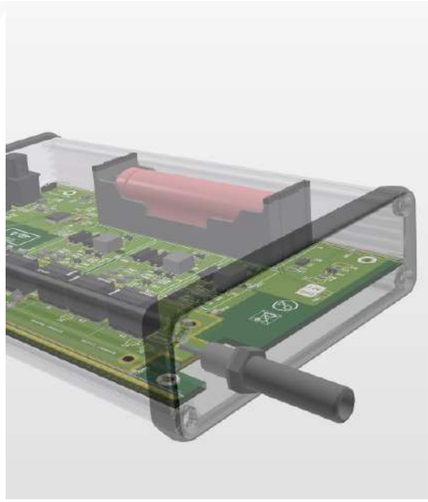
Multispectral detection capability

Advanced CMOS sensor enables multiplexing and precise readings across visible wavelengths.

Case Studies

TriMUX

A precision-engineered platform for metrology-grade signal routing.





‹Client›
IPQ –
Instituto Português
da Qualidade

‹Year›
2021

‹Sector›
Metrology

‹Quantity›
2 Kits





High-precision, modular system for low-noise signal multiplexing in metrology environments. Designed to switch highly sensitive electronic signals between measurement instruments using triaxial (MUSA) coaxial interfaces, ensuring minimal signal degradation and ultra-high isolation. Built for national calibration laboratories, the system combines custom hardware with low-level firmware to enable fully automated testing and instrument switching under the LabVIEW control platform.

// High-Isolation Multiplexer Core
// Solid-State or Relay-Based Switching
// External Power or Battery-Powered Mode
// Ultra-Low Noise Design
// Master–Multiple Slave Configurations
// Fiber-Optic Communication
// Mechanical Design and System Integration
// Fully Open for External System Integration
// LabVIEW Native Compatibility

A precision-engineered platform for metrology-grade signal routing, delivering ultra-high isolation and seamless integration into advanced calibration workflows.

‹Value added›

Scalable system design

Supports expansion and additional channels as requirements grow.

Dual power options

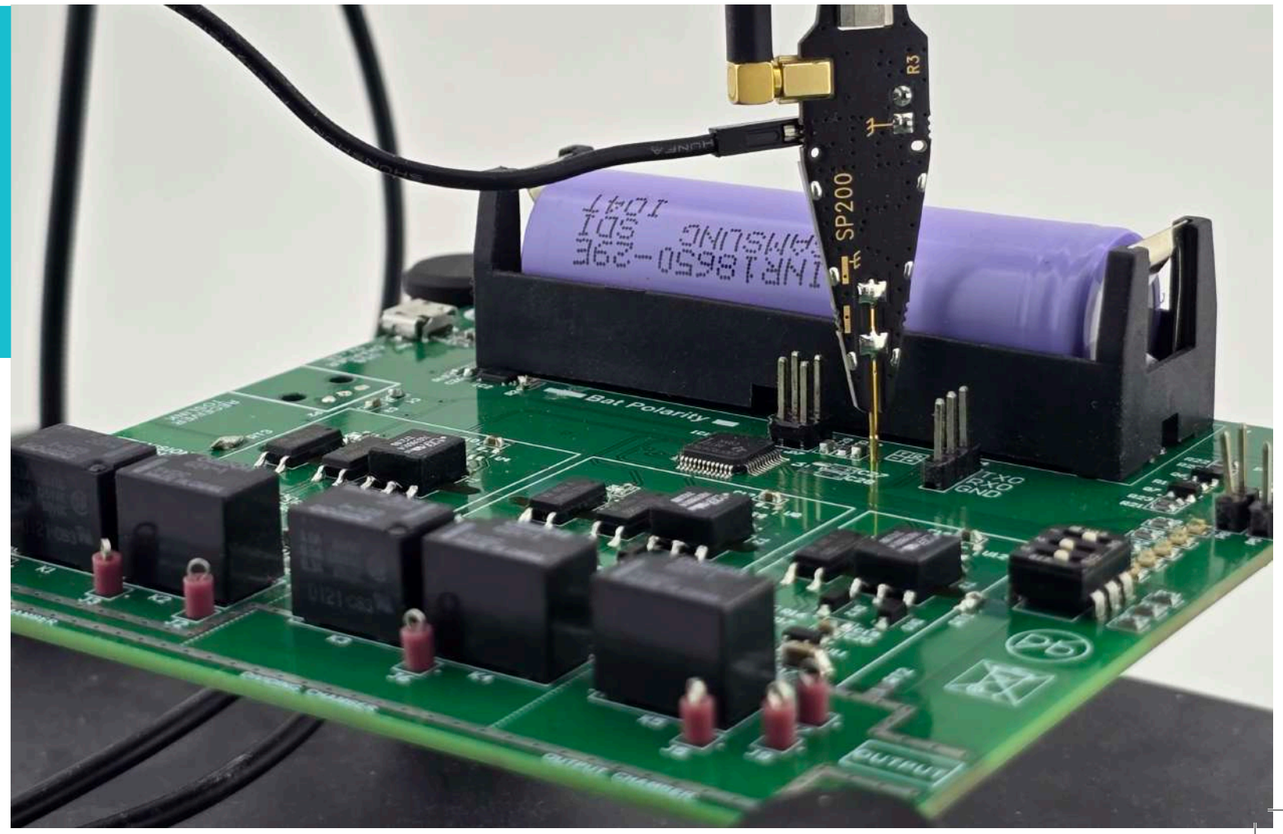
Operates via external power or battery for flexible deployment.

Fiber-optic master/ slave networking

Allows multi-device setups with robust, interference-free communication.

Customizable integration

Fully open for external tools, control systems, and user-defined logic



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Beamer

A scalable IoT solution for multiple event applications, delivering reliable wireless data transmission





‹Client›
Beamian – Digital You

‹Year›
2019

‹Sector›
IoT

‹Quantity›
500+

‹Know more›
beamin.com

The Beamer device is a smart hardware solution designed for live event identification and interaction. It enables digital engagement between attendees, exhibitors, and event organizers using RFID/NFC technology to replace physical business cards and traditional registration methods. Each device functions as a networked event hub, capable of reading participant tags and transmitting data in real time via Wi-Fi or long-range LoRa/NB-IoT. Designed for scalability, hundreds of devices can operate simultaneously in large venues while maintaining stable performance and centralized management.



// RFID Reader Compatible with Multiple Tag Types
// NFC-Compliant Reader for Flexible Tag Support
// Real-Time Wi-Fi Communication
// LoRa/NB-IoT Support for Long-Range Coverage
// Standalone Battery-Powered Operation
// LCD Display for User Interaction
// Scan Confirmation Feedback
// Redundant Offline Logging via SD Card
// Remote Firmware Update Capability
// Lightweight and Compact Design

Overcoming wireless congestion to deliver stable and long-range event data transmission

‹Value added›

Proven scalable system

Supports 400+ devices operating in parallel.

Instant digital interactions

Replace physical badge scans with RFID/NFC technology.

Robust connectivity

Wi-Fi + LoRa/NB-IoT ensure event-wide coverage.

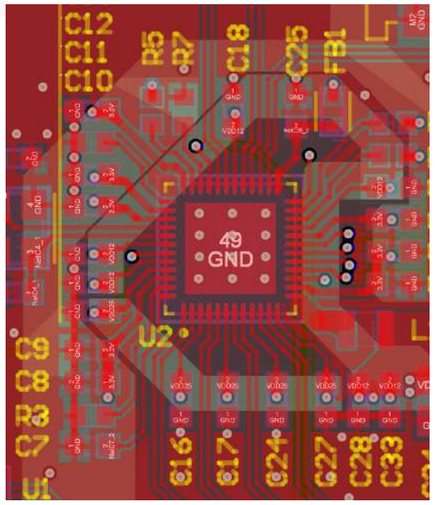
Real-time engagement tracking

Logs scans and sends data instantly to the cloud.

Case Studies

Industrial HMI

Custom-designed HMI system built for industrial environments with advanced connectivity for high thermal stress





‹Client›
Aralab

‹Year›
2024

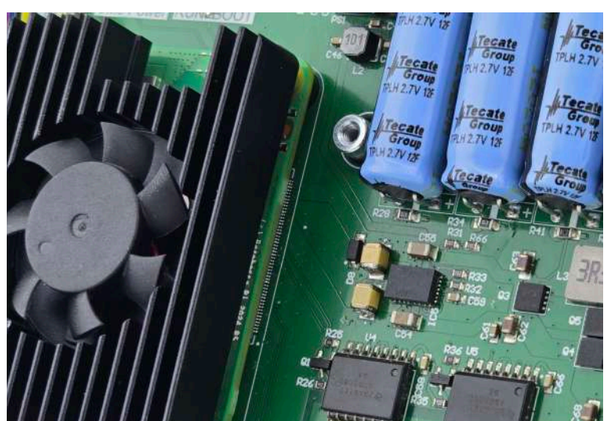
‹Sector›
Industrial Equipment

‹Quantity›
3

The Industrial HMI is a custom Human-Machine Interface developed for demanding industrial environments where advanced communication and reliability are critical. Serving as the main control and user interaction panel for industrial equipment, the system integrates redundant hardware and is optimized to meet precise temperature control requirements.

// Compact Industrial Design for Panel Integration
// 7" Capacitive Touch Display
// Modular Design for Compute Module Options
// Dual Galvanically-Isolated RS485 Buses
// Two Independent Ethernet Ports
// Real Time Clock Module
// Optional Active Cooling
// Designed for CE and RoHS Compliance





A fast-tracked HMI development with robust connectivity, redundancy, and industrial-grade performance.

‹Value added›

Real-time communication

Dual RS485 and Ethernet for versatile integration.

Compliance -ready

CE and RoHS compliant with supporting documentation.

Production -oriented

Fully documented for streamlined replication and assembly.

Production -ready

Designed for 200 units/ year manufacturing scale.



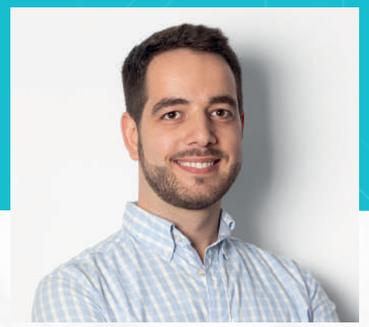
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Would you like to work with us?

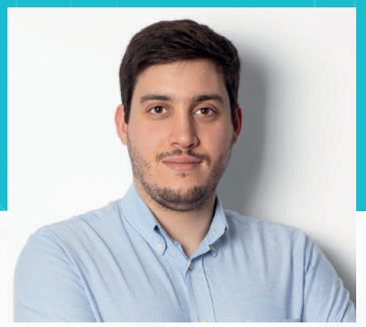
A team ready to serve you.

“We are an experienced and dedicated provider of customized hardware and firmware development, striving to meet client’s specific needs efficiently and professionally.”

CEO quote



César Gaspar
‹ Co-Founder & CEO / ›



Rúben Afonso
‹ Co-Founder / ›



Tiago Furtado
‹ Electronic engineer / ›



Francisco Dias
‹ Electronic engineer / ›

Intelligence Behind the Hardware

“VisionVolt stood out for the technical excellence of its proposed solutions and its close collaboration throughout all phases of R&D and prototyping of the Dr Vida rapid molecular tests. Its adaptability and responsiveness were decisive in successfully scaling our lab-in-a-pocket product line for different applications, including clinical and environmental.”

Orfeu Flores, CEO Stabvida

Working with VisionVolt has been a seamless, energizing partnership — Sentistic values their proactive approach, transparent communication, and the consistent results we achieve together.

Justin Groot, CEO Sensistic

VISION VOLT

‹ Transform your **ideas** into **innovative solutions.** /›

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