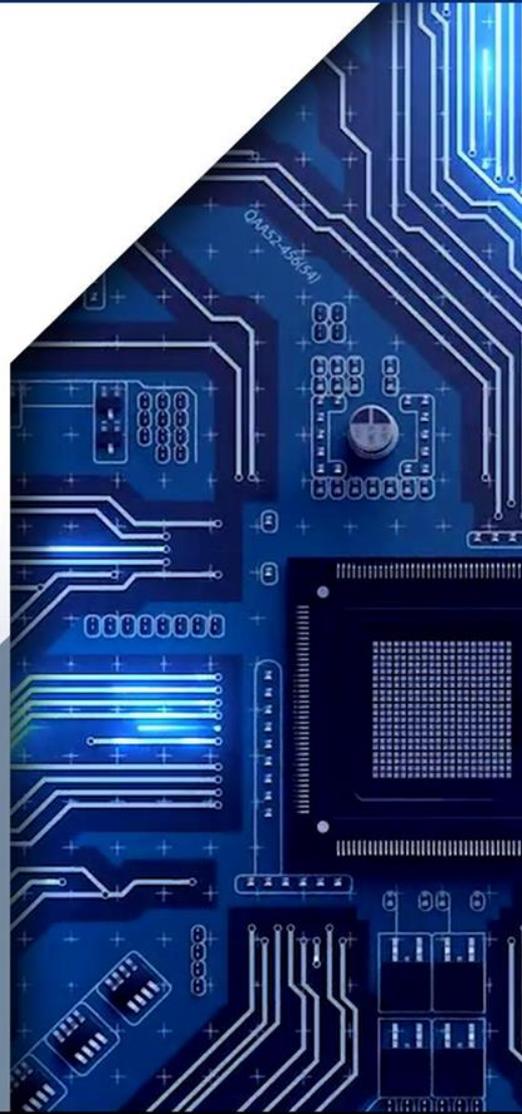


The logo for Mind Wave Technologies features the word "MIND" in a large, blue, outlined font. Below "MIND" is the word "WAVE" in a smaller, blue, outlined font. Below "WAVE" is the word "TECHNOLOGIES" in a black, sans-serif font. The background is a light blue gradient with a dark blue geometric shape in the top-left corner.

# MIND WAVE TECHNOLOGIES

A detailed graphic of a blue circuit board with white traces and components, including a microchip and various connectors, positioned on the right side of the page.

Business Portfolio  
2019



# About Us

Mindwave Technologies provides a full range of products and services that address domestic, small, medium and large business problems.

Starting from the creation of equipment and software for the manufacturing industry, *our customers' needs* have driven our business to spread into different areas, including *software and test solutions development, electronic and mechanical design, automation, environmental engineering and audiovisual systems.*

This has been possible due to a *highly skilled and wide experienced multidisciplinary engineering team, highly qualified operations, cutting-edge technology implementation, best practices in project management, and strong relationships with our technology partners.* Such work philosophy has driven us to *deliver our products and services in a timely manner and meeting the highest quality standards.*





# Automation

The automated solutions developed by Mindwave address a wide variety of problems with applications in both, industrial and domestic environments.

*For the industry we develop, upgrade and customize equipment* with a wide range of applications, from product transportation through the manufacturing process and packing solutions, to automated visual inspection and safety systems.

The automated systems we develop are built under a modular scheme in order to be able to exchange information and cooperate with each other in real-time, thereby, meeting *industry 4.0* requirements. In the *domestic applications*, our solutions cover the whole *home automation*, from lighting and access controls, to surveillance and smart irrigation systems.



## Automated Equipment Design and Manufacturing

- Design from scratch, redesign and upgrade
- Automated product transportation solutions
- Equipment maintenance and spare parts
- Product handling and packing solutions
- Automated visual inspection systems
- Manual process automation
- Smart factory solutions



## Home Automation and Smart Buildings

- Closed circuit camera surveillance systems
- Badge, tag and fingerprint access controls
- Smart irrigation and lighting systems
- Alarms and security systems



## Industrial Safety

- Safety systems design and implementation
- Light curtains and safety interlock switches
- Electrical hazard prevention enclosures
- Chemical risk evaluation and control
- Mechanical hazard safety systems





# Test Equipment

Our test equipment design team is able to *develop hardware from scratch* according to the product parameters to be tested, but we also offer reverse engineering, *redesign and upgrade* services for legacy and obsolete test equipment.

*The test solutions we create are suitable for different production volumes* and support a wide variety of test categories, ranging from electrical and optical, to pneumatic and environmental stress screening.

Our test platform supports *real-time critical parameter monitoring*, database controlled test sequences, maintenance plan scheduling, *statistical process control* and result recording for further analysis.



## Standard Electrical Parameters

- Nominal, undervoltage and overvoltage tests
- Current draw, leakage and hipot verification
- Ground and isolation measurements
- AC/DC electrical parameters



## Content Loading / Flashing Stations

- Standalone microcontroller programming
- HDD / SSD image cloning and loading
- CRC / Checksum data verification
- Firmware loading and testing
- FPGA / ASIC configuration



## RF Parameters

- Interference, distortion and signal to noise ratio
- Adjacent channel power ratio and harmonics
- Input and output power
- Power calibration



## Audio / Video

- Analog / digital audio measurements
- Contrast ratio and brightness tests
- LCD backlight integrity verification
- Video pattern tests
- Color calibration



## Wired / Wireless Communication

- Bluetooth calibration / communication verification
- WiFi calibration / communication tests
- Ethernet data transfer measurements
- Serial communication evaluation
- CAN communication tests



## Navigation

- GPS/GLONASS navigation tests
- Radar ranging measurements
- Sonar ranging verification



## Optical Inspection

- Pattern matching and object recognition
- PCB automated optical inspection
- Optical character recognition
- Barcode / QR reading
- Image analysis



## Pneumatic Parameters

- Air pressure leakage measurements
- Vacuum leakage evaluation
- Mixed leakage tests



## Environmental Stress Screening

- Thermocycle evaluation
- Mixed stress verification
- Vibration validation
- Impact tests





# Mechanical Design



# Mechanical Design

Our mechanical design solutions are developed using *computer assisted engineering and design software* tools, according to our customer needs. They range from design, modification and manufacturing of production hardware, to custom machine redesign and the creation of specialized fixtures and tools.

We also offer *reverse engineering services*, where we can reproduce obsolete machinery parts or develop 3D models from existing physical parts, for simulation and machining purposes.

All our projects are first designed and modeled in specialized software for customer approval prior development, and delivered in *blueprint, digital model, or render* upon customer request.



## Production Floor Hardware

- Warehouse and production floor racks and enclosures
- Cabinets and chambers for testing environment
- Conveyors, rotary tables and stacking systems
- Product and material handling solutions



## Machinery Redesign

- Machine upgrade for capacity increase
- Guides, lifts and rollers implementation
- Safety guards design and installation
- Obsolete custom parts replacement



## Specialized Fixtures and Tooling

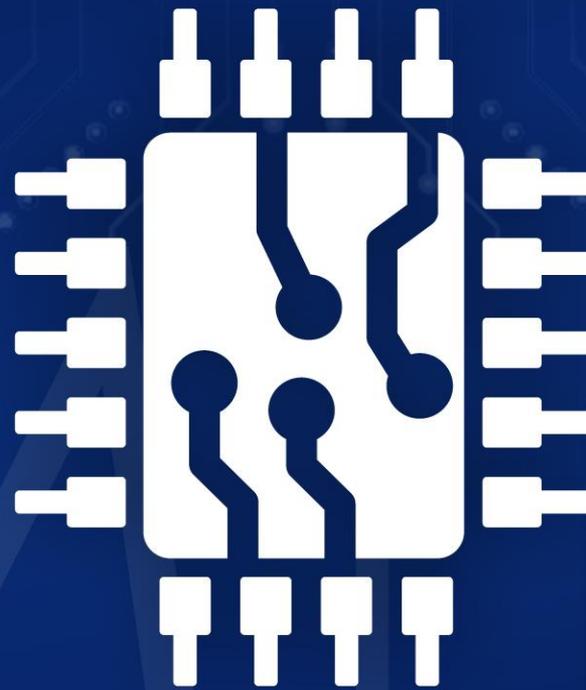
- Cases and enclosures for electronic assemblies
- Customized tools for specialized processes
- Adapters and fittings for quick setup
- Mechanical and pneumatic fixtures
- Custom sockets and connectors



## Reverse Engineering

- Computer assisted 3D modeling from physical parts
- Computer assisted engineering and manufacturing
- Mechanical assemblies rendering for simulation
- Blueprint and digital models for manufacturing



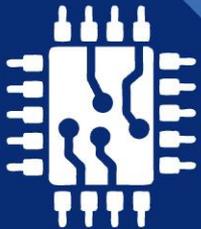


# Electronic Design

Mindwave has great expertise in electronic design, covering everything from digital, analog and mixed component sourcing, to soldering, wiring, programming and assembling.

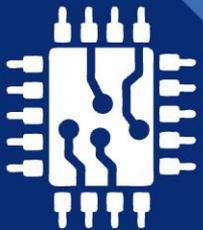
We cover the whole process from the *idea conception*, early design stages and *prototyping*, to *new product introduction*, pilot runs and *mass production*.

Our electronic design team goes *beyond commercial electronics*, offering an extensive range of solutions that cover custom designed *printed circuit boards*, sensors, microcontrollers, actuators and more complex solutions such as component populated boards, FPGAs and *fully functional electronic devices* according to our customer needs.



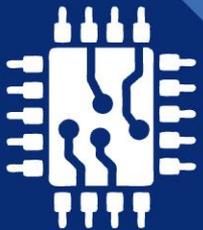
## Printed Circuit Board Design and Manufacturing

- Multilayer PCB design and manufacturing
- Manufacturing from customer's design
- SMT/TH board population
- Electronic board redesign



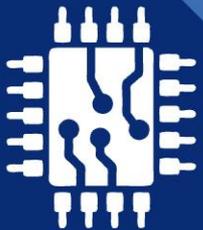
## Sensors and Actuators

- Pneumatic and hydraulic
- Location and positioning
- Inertial and dimensional
- Chemical and thermal
- Electrical and optical
- Magnetic and torque



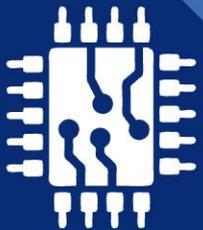
## Firmware Development and Device Programming

- Platform specific firmware development
- Microcontroller device programming
- Flash programming and cloning
- FPGA device configuration



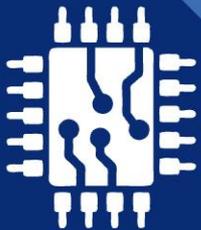
## Reverse Engineering

- Schematic diagram design from physical assemblies
- Electronic assembly reverse engineering
- Harness and wiring reverse engineering
- PCB reverse engineering



## Miscellaneous Services

- Digital, analog and mixed electronic component sourcing
- Electronic assembly soldering and wiring
- Electronic assembly reverse logistics
- Obsolete component procurement
- Casing and enclosure design





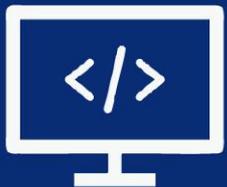
# Software Development



# Software Development

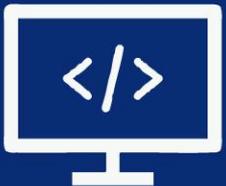
Mindwave's software development team is specialized in creating custom solutions not only for the ***manufacturing industry***, but for ***medium and small businesses*** as well. From databases for inventory management purposes, to the development of specialized software for more complex applications such as instrumentation, data acquisition and processing, automation, control, artificial intelligence and machine learning.

Our software solutions are compatible with both, ***static platforms***, such as personal or machine embedded computers and ***mobile platforms***, such as cellular phones and portable devices, making them suitable for IoT projects.



## Industrial Applications

- Warehouse, tooling and hardware inventory control
- Artificial intelligence assisted production planning
- Productivity, yield and OEE metrics dashboard
- Andon systems and statistical process control
- Shop floor, product tracking and process flow



## Business and Domestic Applications

- General and specific purpose databases
- Help desk and service ticket systems
- Employee attendance recording
- Document control systems
- Project management tools
- Smart training platforms





# Environmental Engineering



# Environmental Engineering

Mindwave is committed to the preservation of the environment, thus, for the last few years, *environmental engineering has become one of our main business concerns*. Besides we provide solutions for our customers with the aim of supporting *business sustainability with the lowest impact to the environment*, we actively contribute to the creation of clean energy solutions.

Our environmental engineering projects not only consider *clean generation of energy*, but they also aim to the efficient use of it, offering energy harvesting, power storage and further smart energy solutions. We also *optimize the use of natural resources* through environmental restoration, recycling and recovery solutions.



## Energy Harvesting

- Power inverters and charge controllers
- Photovoltaic power systems
- Eolic powered generators
- Water stream generators



## Smart Energy Solutions

- Power consumption optimization
- Battery arrays and power banks
- Energy efficiency monitoring
- Waste to energy conversion



## Environmental Restoration

- Horticulture and precision agriculture
- Air and water pollution monitoring
- Waste management systems
- Residual water treatment



## Recycling and Recovery

- E-waste recycling and component recovery
- Reused electronics certification platforms
- Recyclable materials collecting stations
- Electronic assemblies reverse logistics





# Audiovisual Systems



# Audiovisual Systems

Mindwave offers *audiovisual production services* according to the message our customers need to be broadcasted, providing tools to spread the desired idea or image.

Our wide range of audiovisual production services cover from corporate *product and service brochures, business portfolios and presentations*, to organizational product and service videos, training material, assembly tutorials, and *visual aid systems for the manufacturing industry*.

Our audiovisual media team takes part in the whole process from the idea conception to the delivery of audiovisual tools in both: *digital and physical format*.



## Audiovisual Tools

- Assembly instructions and visual aid platforms
- Electronic survey and assessment systems
- Process tutorials and training solutions
- Corporate conferencing platforms
- Interactive learning systems



## Informative Media

- Product catalogs and corporate presentations
- Business portfolios and company brochures
- Product 3D models and rendering
- Electronic dashboard systems
- Corporate audiovisual content
- Social media management



## Immersive Experience

- Simulated training and immersive learning
- Augmented and virtual reality systems
- Digital environment generation
- Sensory feedback devices
- Motion tracking solutions





*We are concerned about your needs, just let us know how we may help, and we will be there.*

## Contact Information:

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