

The logo for Mind Wave Technologies features the word "MIND" in a light blue, sans-serif font. Below "MIND" is the word "WAVE" in a larger, stylized blue font where the letters are interconnected. Underneath "WAVE" is the word "TECHNOLOGIES" in a smaller, dark blue, sans-serif font.

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 slide.

Business Portfolio  
March 2023



# 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, and automation.*

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.*



Mindwave Technologies commercial activities can be divided into *two geographical regions within Mexico* based on our customers' locations:

- **Northwest:** Mexicali, Tijuana, Ensenada, Tecate, Agua Prieta, Nogales, Hermosillo and Juarez.
- **Northeast:** Cd. Acuña, Piedras Negras, Monterrey, Reynosa, Matamoros, Río Bravo.

We are located in *strategic areas* to cover these regions:

- **Mexicali (HQ):** Software, Mechanical, Electronic, Test and Automation design.
- **Tijuana:** Mechanical and Automation design.
- **Ensenada:** Software, Electronic, Test and Automation design.
- **Piedras Negras:** Software, Test and Automation design
- **Monterrey:** Electronic, Test and Automation design
- **Reynosa:** Software and Test design





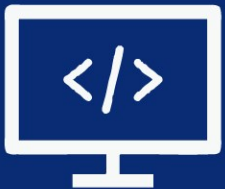
# Our Customers

Mindwave Technologies provides engineering services spread in the following main areas:

- **Software Development.**
- **Test Equipment**
- **Electronic Design**
- **Mechanical Design**
- **Automation**

Our engineering services have been requested by the following industries:

- **Automotive**
- **Medical**
- **Aerospace**
- **Renewable Energy**
- **Consumer Electronics**





# Our Customers

SUNPOWER®

• APTIV •

 **Acuity**Brands™

JOULE   
TECHNOLOGIES

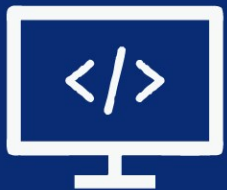
  
CICESE™

  
**STIG**  
Geomática

FOXCONN®

MEDLINE

 **CIRCUITCHECK**  
INNOVATIVE TEST SOLUTIONS





# Test Equipment



Our test equipment design team can *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





## Harness Testing

- HiPot and isolation tests
- TDR tests
- Data transfer rates
- TUA tests



## Content Loading / Flashing Stations

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



## 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





# 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.



## Robotics Integration Services

- Manual process robot automation
- Collaborative robotics
- Human-machine collaboration
- Material handling and testing
- Inspection and functional testing
- Packing and dispensing solutions





## 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

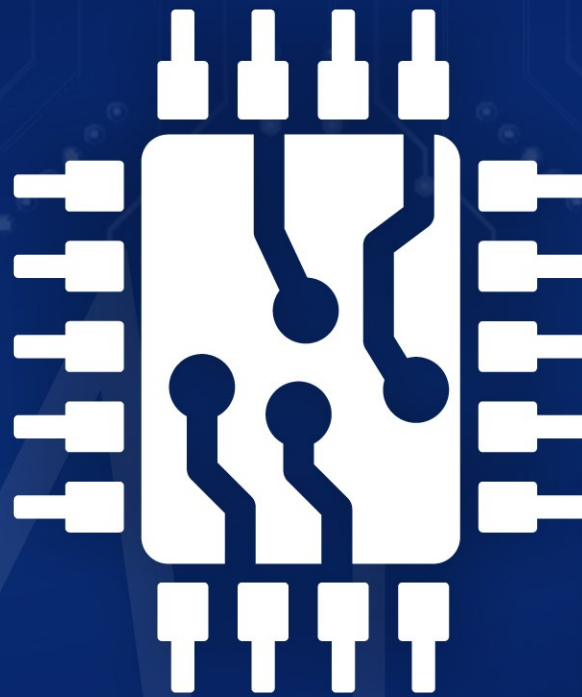
- Closed circuit camera surveillance systems
- Smart power outlets and energy monitoring
- Badge, tag and fingerprint access controls
- Smart irrigation and lighting systems
- Home audio and visual systems
- Alarms and security systems
- Smart climate control



## 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



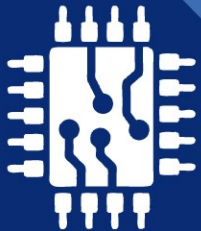


# Electronic Design

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

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





## Firmware Development and Device Programming

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



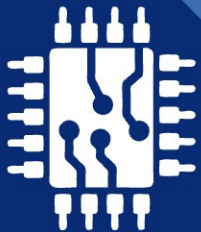
## Reverse Engineering

- 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
- Component recovery and reverse logistics
- Electronic assembly soldering and wiring
- Obsolete component procurement
- Transducer signal conditioning
- Sensor and actuator sourcing
- Casing and enclosure design





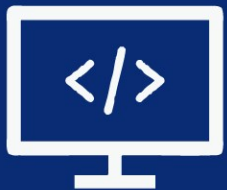
# Software Development



# Software Development

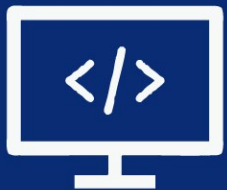
Mindwave's software development team is specialized in creating custom solutions not only for the *manufacturing industry*, but for *medium and small businesses* as well. From databases for inventory management purposes, to the development of specialized software for more complex applications such as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

Our software solutions include desktop applications compatible with multiple operating systems, applications for *mobile phones and portable devices*, *embedded applications* for scientific and industrial equipment, and *web-based applications* for cloud computing.



## Industrial Applications

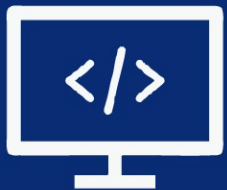
- Warehouse, tooling and hardware inventory control
- Artificial intelligence assisted production planning
- Productivity, yield and OEE metrics dashboard
- Andon systems and statistical process control
- Shop floor, product tracking and process flow





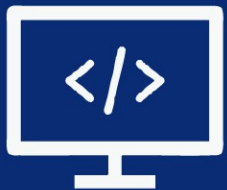
## Engineering and Science Applications

- Artificial intelligence and machine learning
- Computer assisted design and simulation
- Bioinformatics and medical computing
- Instrumentation and control tools
- Data mining and analytics
- Cloud computing



## Business and Domestic Applications

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





# 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
- Tubular systems and aluminum profiles



## Machinery Design and Redesign

- Machine upgrade for capacity increase
- Guides, lifts and rollers implementation
- Safety guards design and installation
- Obsolete custom parts replacement
- Cases and enclosures for electronic assemblies
- Adapters and fittings for quick setup
- Custom sockets and connectors



## Tooling and Prototype Manufacturing

- CNC and conventional machining, milling, lathe and grinder
- Customized tools and fixtures for specialized processes
- TIG, MIG and electrode welding
- Filament and resin 3D printing
- Thermal treatment



## Computer Assisted Engineering

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





*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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