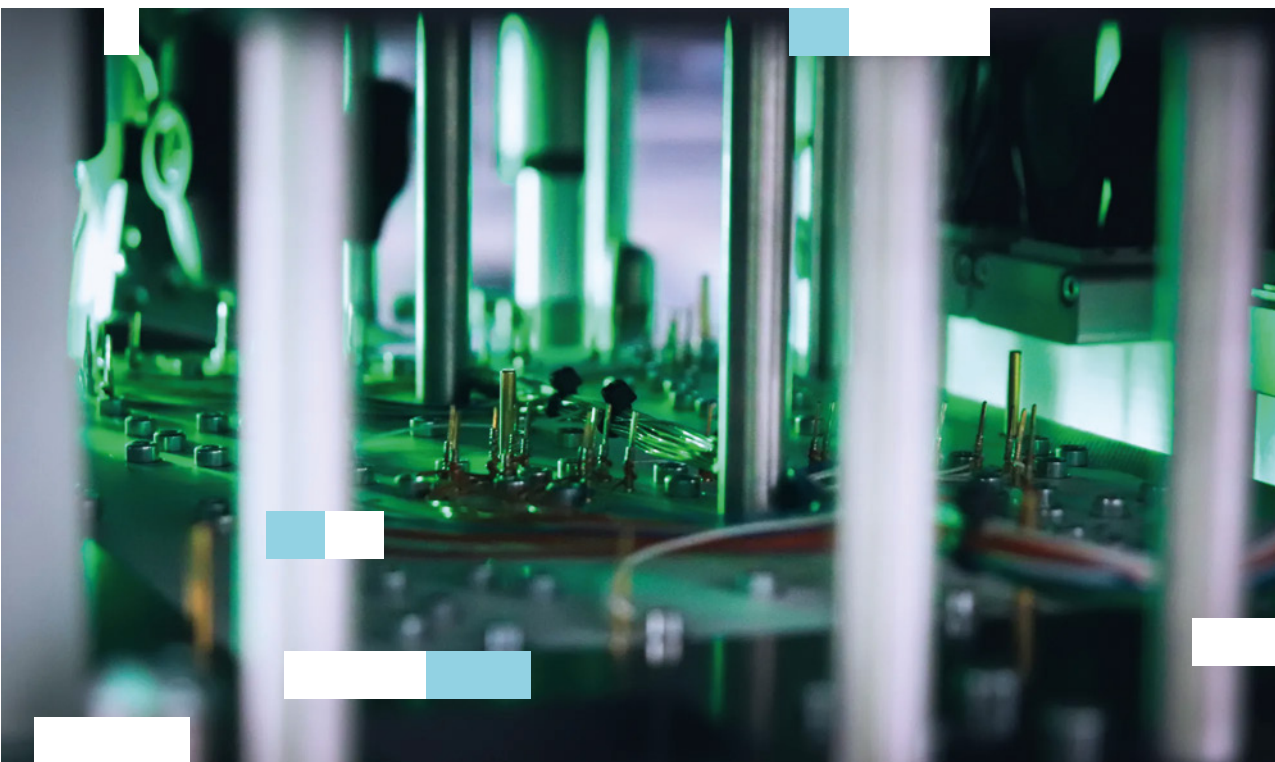


TEST SYSTEMS SOLUTIONS

A WORLD OF TEST POSSIBILITIES





Controlar
test systems

Your Test Challenges, Solved.

Controlar is a global specialist in developing advanced functional and quality **test systems** for electronics manufacturing and demanding applications.

With deep-rooted expertise in both **PCBA testing** and **End-of-Line (EoL) testing**, we partner with customers to co-develop reliable, scalable systems that align with their operational goals.

Our global team of skilled engineers and technicians brings multi-disciplinary know-how to each challenge, helping you design smarter test flows, reduce downtime, and improve reliability across everything from PCB validation to end-of-line quality control.



PCB Testing (in-line and off-line)

- / In-Circuit Test (ICT)
- / Boundary Scan (JTAG)
- / In-System Programming (ISP) / Flash
- / Functional Test (FCT)

- / RF testing
- / HIPOT
- / Current and voltage measurement

- / CAN, LIN, I2C, SPI communication protocols
- / Power-up & system-level functional analysis

- / LED Testing
- / User interface simulation

Product Testing

- / Functional Testing
- / Flash Programming
- / Display & Camera Calibration
- / Automated Optical Inspection (AOI)
- / Manufacturing Defect Analysis (MDA)
- / Sensor Calibration & Actuation Testing

Quality Control

- / Burn-in and Run-in (HALT - Highly Accelerated Life Tests)
- / Vibration Testing
- / Leak Testing
- / Troubleshooting
- / Pressure and Impulse Testing
- / Product Inspection and Label Application



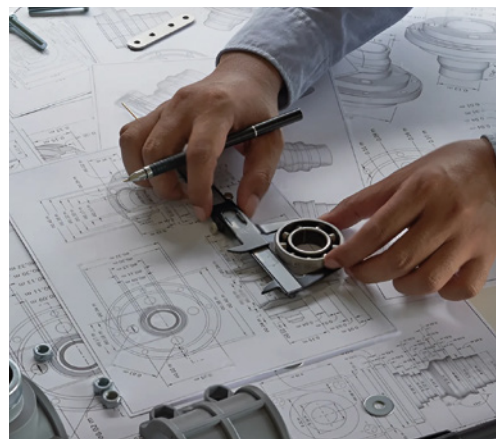
Smart Testing Solutions Built to Your Specs, Priced to Your Plan

We deliver tailored test solutions that support the latest test technologies for **automotive, industrial electronics, consumer technology, aerospace & defense**, among others.

Whether you're validating a low-volume prototype or scaling a complex production line, our approach matches your test strategy, environment, and budget adapting as your requirements change.

From manual stations to fully automated in-line systems, every solution is built on a single principle:

Understanding your process and delivering exactly what you require. No more, no less.





PCB Testing

Automated In-line and Off-line Solutions Made to Scale

Controlar offers a variety of test methods that can be performed on PCBs during their assembly, ranging from automated in-line systems in a serial layout or cost-effective, easy-to-install off-line models.

In-Line Test Systems

Automated In-line and Off-line Solutions Made to Scale

Designed to integrate into high-volume production lines, our **modular in-line systems** are developed in close collaboration with manufacturers to accelerate production and perform all the required test specs using advanced fixture systems without compromising accuracy.

- / Modular, versatile and configurable systems for ICT, ISP, and FCT applications.
- / Fast, precise testing of PCBAs ranging from small to extra-large sizes and for complex assemblies.
- / Engineered for vacuum, pneumatic, or mechanical actuation.
- / Built-in traceability, safety interlocks, and self-diagnostics, through software-configurable setups.
- / Space-efficient design with a compact footprint optimized for production environments.



XILS600



XILS800



XILS1200



RFILS1000



CILS1500



MILS700

Off-Line Test Systems

Efficient and Flexible for Mid-Volume Needs

When flexibility and quick changeovers are key, our cost-effective **semi-automatic systems** offer an adaptable testing platform that reduces operator error and simplifies fixture handling.

- / Ideal for high-mix, low-to-mid volume production and compatible with large or complex formats.
- / Interchangeable fixtures and rapid changeover capabilities for swift reconfiguration.
- / Manually loaded or robot-fed options for increased repeatability and throughput.
- / Integrating test software platforms for easy traceability and control.



Manual Test Stations

Portable and Compact for Low Volume Production

Built for lab environments, prototyping, or small-batch production, our **manual solutions** are ergonomic and fully customizable for all types of PCB and instrumentation interfaces.

- / Rugged enclosure with built-in safety features for reliability in demanding environments.
- / Integrated instrumentation, signal routing & pneumatics within a small footprint.
- / Engineered for ease of use, long life, and high-test precision.





Product Testing Fully Customized for Unique Challenges

Quick and effective product testing is critical for any manufacturers to stay competitive in any industry. Our **flexible testing solutions** cover different levels of functional tests on a wide range of electronic devices and components, delivering accurate and repeatable results. These tests include: DC/AC voltage, DC/AC current, frequency, power factor, power level, resistance, capacity, temperature, among others.

- / Capable of conducting multiple tests simultaneously (large number of test positions) while optimizing footprint.
- / Fully automatic machines equipped with automated control systems, sensors, and robot handling.
- / Semi-automatic machines combining automated functionalities with manual operation for specific tasks.
- / Manual machines designed for flexibility and low-volume testing, ideal for specialized or infrequent tests.
- / Integration of FCT instrumentation, including systems from R&S, NI, Chroma, Keysight, and other leading providers.



Quality Control Ensuring Product Integrity for Optimal Quality Assurance

With decades of experience in quality assurance for electronics, we specialize in developing advanced **burn-in, run-in, and environmental stress screening (ESS) systems** for the testing systems industry that minimize the risk of malfunctions or defects.

- / Modular and compact systems optimized for space efficiency while delivering high functionality.
- / Rapid and efficient quality checks on multiple products simultaneously.
- / Evaluation of product performance under controlled environmental conditions.
- / Adaptable to diverse product specifications, maintaining consistent quality and throughput.
- / Diverse, standards-compliant systems covering screening machines, climatic chambers, test benches, portable test cases, and audit stations.





Large Scale Test Lines

Speed and Precision in Every Test

Integral to modern manufacturing, our sophisticated **large-scale test lines** combine robotics, advanced sensors, and software algorithms to conduct comprehensive tests on components at high speeds, ensuring that each component meets stringent quality standards across various industries.

- / Fully automated lines for precise handling and fast cycle times.
- / Robotic precision and high-speed operation, delivering flawlessly tested units.
- / Comprehensive testing capabilities across a wide range of test types.
- / Modular design for easy adaptability, configuration, and scalability.



Ready to Solve Your Test Challenge?
You bring the challenge. We deliver the solution.

Equipment Integration



Communications

- / CAN bus
- / LIN® bus
- / Boundary Scan
- / Automotive Ethernet
- / FlexRay®
- / LVDS, APIX
- / A2B®
- / MOST®
- / Wi-Fi
- / Bluetooth
- / CANFD
- / SDARS
- / DAB
- / USB3.0

Software

- / NI Labview™ (CLAD and CLD certified)
- / NI TestStand™
- / C, C++, C#, Python
- / JAVA
- / MS SQL, MySQL
- / GitLab

Innovation, Quality and **Passion for Engineering.**

About Controlar S.A.

Founded in 1995, Controlar is a Portuguese company specialized in industrial automation and test systems with focus on the automotive industry.

The company provides a wide range of services, including the design, development, and integration of automated test systems, data acquisition and analysis, production line automation, and quality control.

With 400 employees globally, Controlar operates a global network of production units, companies, and offices in Portugal, Spain, France, Germany, Poland, Morocco, Mexico, the USA, India, and Malaysia.



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