TOOLING AND FIXTURING

TOOLING AND FIXTURES FOR ALL TYPES OF APPLICATIONS

Controlar
innovating industry

A quality solution for your specific fixture requirements - adjusted to your budget!

Controlar, together with EIIT- A Controlar company, specializes in the development and provision of tooling and test fixtures for a wide-ranging application field. This includes ICT (In-Circuit Testing), functional testing, flash programming, EOL (End-of-Line) testing, and more.

- Our expertise extends to both inline and offline systems, offering solutions for mechanical, pneumatic, or vacuum operations. Our fixture offerings cover the entire landscape of handling systems currently in use within the market.
- Whether you require a straightforward mechanical fixture with a few hundred probes for low production volumes or a highly intricate fixture featuring thousands of probes, double-sided probing, double actuation, and other advanced capabilities, we have the capability and experience to meet your specific needs.

Your requirement is the directive for our design!

Flash and FCT fixture for EIIT XILS handlers (pneumatic, inline)

BST20 for RF21 handler

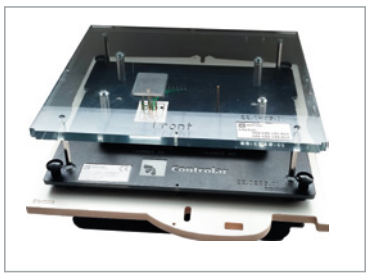
ICT and LED testing fixture for EIIT XILS handlers

ICT fixture for TRI handler (pneumatic, offline)

ICT Fixture for Aeroflex handler (vacuum, offline)

Manual Flash Station – adapter and customized jig

ICT fixture for Teradyne TSH52 handler (vacuum, inline)



Fixture for SPEA 3030 ICT (vacuum, offline)

3D project development for IPTE PAK handler (pneumatic, inline)

Executing customer specifications and project requirements

Your product is unique

- A bed of nails fixture is intrinsically tailored to test your unique product, requiring customizations as a standard practice.
- Our extensive experience has enabled the standardization of fixtures customization, development, and manufacturing, leading to reduced lead times for both simple and complex fixtures. All the while, maintaining the high-level standards of quality that are demanded.
- Our team of fixture specialists is ever-ready to engage in discussions with our valued customers to explore their specific requirements. Our goal is to collaboratively find optimal solutions that align with our wealth of expertise and technical innovation, ensuring we meet our customers' unique needs.

Examples of project adaptation in order to meet customer requirements:

- Lateral actuation with pneumatic cylinders or stepper motors.
- Detection of mechanical interlocking.
- Connector pin contacting (different levels of probe actuation).
- Testjet/Opencheck/FrameScan sensors or other "made on demand".
- Design of customized parts to connect to specific product/costumer components.
  - Signal conditioning with instrumentation amplifiers, frequency dividers, etc.
  - Generation of stimuli and noise filtering.
  - Development of specific PCBs for watchdog, interfacing, switching, etc.
  - Discharge and protection circuits.
  - Specific loads.

Turn-key Projects

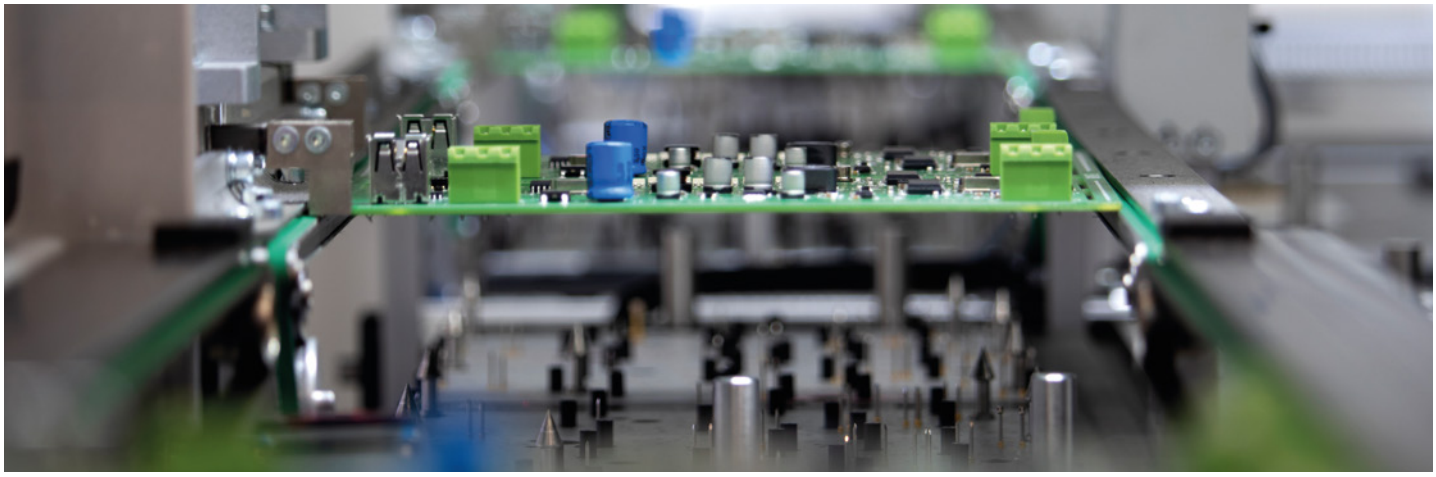
Whether you require fixtures, or the complete turn-key project (fixture + application), Controlar and EIIT - a Controlar company have the capability to:

- Develop ICT applications in several platforms, including MDA, Testjet, Digital/Hybrid tests, Boundary Scan, Functional tests, LED tests.
- Integrate customized circuits for signal conditioning, noise filtering, discharge, watchdog, loads, etc.
- Integrate aditional test equipment such as LED analysers, Flash programmers, communication devices, etc.
- Tune and support production start and ramp-up at customer's facilities.

With the integration of different technologies:

- Checksum
- Digital Test
- TRI
- Aeroflex
- Goëpel
- Teradyne
- Keysight

Testing ICT fixtures



Integration of different technologies

Boundary Scan (Digital/Hybrid Tests)

Controlar holds extensive expertise in Boundary Scan Test and proudly serves as an official partner of Goepel (www.goepel.com). We have successfully delivered more than 30 turn-key test systems that combine Checksum and Goepel platforms over the past years.

LED Testing

When it comes to LED testing, while our ICT systems have the capability to conduct electrical tests, including diode testing for LEDs, there are instances where optical analysis becomes necessary, which falls beyond the scope of ICT systems.

To address this, Controlar partnered with FEASA (www.feasa.com), using FEASA's equipment for comprehensive LED and display analysis, seamlessly integrating this capability into our ICT systems.

ISP (In-System Programming)

In-System Programming (ISP) is another integral aspect of our services. ISP involves the programming of In-Circuit or In-System devices, eliminating the constraints associated with traditional programming devices such as on-socket or pre-programmed methods. ISP offers numerous advantages for in-board and system-level design, manufacturing, and programming processes, enhancing efficiency and flexibility.

Programming of flash memories integrated in ICT Test, Functional Test or Boundary Scan.

Dedicated Flash Stations

- Inline or offline
- Gang programming

Dedicated Programmers vs. Universal Programmers

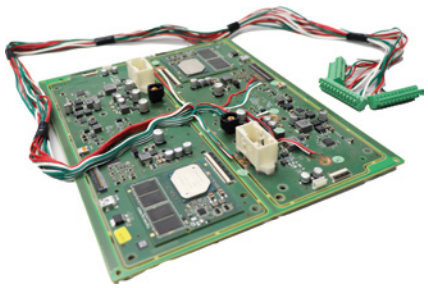
Controlar is an official partner of SMH – FlashRunner (www.smh-tech.com), integrating their universal programmers into numerous projects.

Our Tooling and Fixturing manufacturing plants are equipped with a wide range of cutting-edge tools and state-of-the-art technical capabilities.

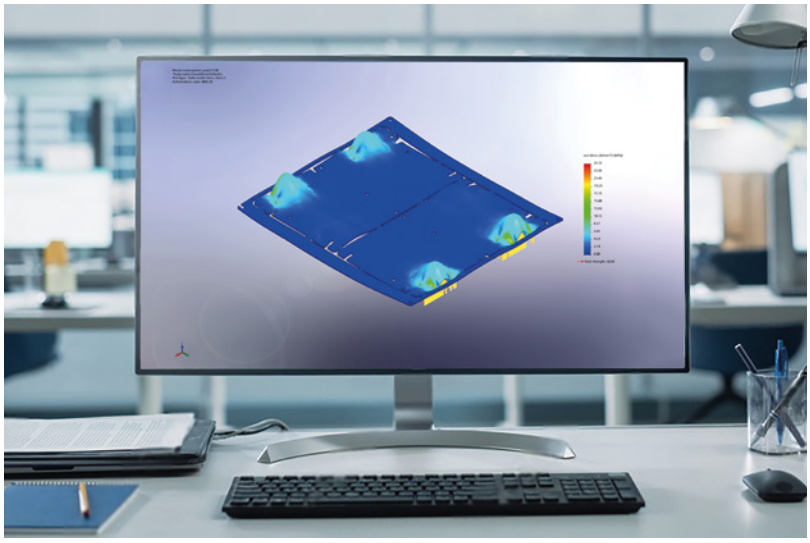
We continually seek out innovative technologies and the most advanced resources to deliver the best combination of pricing, top-notch quality, and technical capabilities.

The potential mechanical stress resulting from PCB deflection during the fixture closing operation can have significant implications.
To mitigate this issue, Controlar employs a comprehensive set of tools for conducting stress analysis.

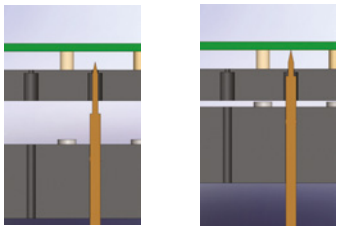
Strain gauge tests with extensometer sensors and dedicated equipment from HBM
Whenever requested by the customer, fixtures are validated using HBM measurement equipment in conjunction with a "Golden Sample" product. Regularly conducting this test is considered a best practice for re-validating the fixture's performance.



FEA (Finite Element Analysis) technique for Software Simulation
Before beginning fixture construction, an FEA analysis is performed, and if needed, the probes/pushers are adjusted in the most critical areas until the FEA simulation successfully meets the requirements.



Testing with packed PCBA's layouts



Probe not actuated | Probe actuated

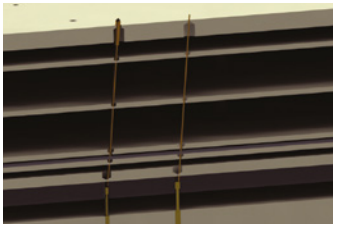
Precision Mobile Plate

Sometimes, there is simply no space!

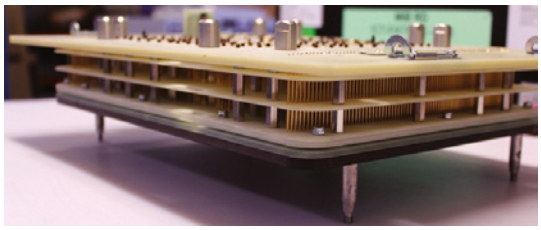
The test pad diameters or the spacing between their centers can become minimal in "standard" fixture manufacturing.
We excel in mastering all state-of-the-art technologies necessary for every unique case.

Precision Mobile Plates (Floating plate guiding)
Zoom technology
Fine pitch probing

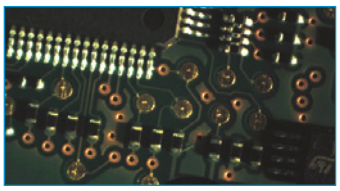
Detail of a fixture project using zoom technology



Precision Mobile Plate



Fixture Validation – Probe Impact Analysis

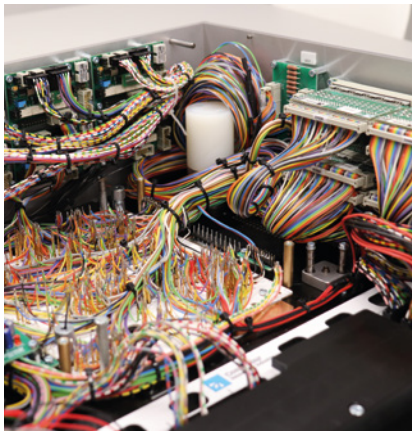


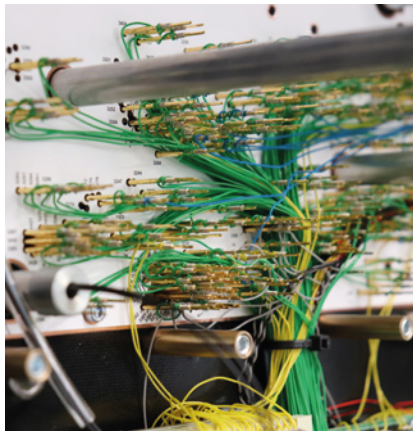
Microscope PCB photo detail after probe actuation)

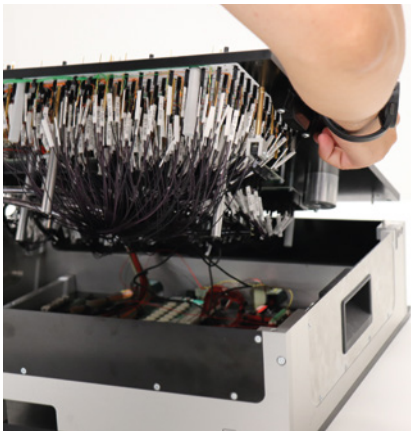
In our standard fixture production validation process, we employ microscopes to conduct Probe Impact Analysis on the PCB.

In the process between assembly and wiring, a preliminary study is conducted to validate the drilling of the probe plate.

Once the fixture is fully prepared, a final verification is performed, and the results recorded and included in the fixture documentation.







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

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Mod. 238TF.EN.D2