

Automated Testing and In Line Handling of Printed Circuit Boards

ATM 2630 / ATM 4550

ATM test modules are designed for the integration in electronic production lines, providing automatic test handling for Functional Test, In Circuit Test and Combi Test of PCBs and hybrids (option: hot test). Board style conversion is almost automatic and may be completed within one minute.

Integration in Production Lines

ATM modules receive the PCBs In Line, then the boards are proceeded to the dynamic bar code reader for identification and then loaded into the test station.

For hot testing (option), preceding/succeeding hot funnels may be integrated. The test station is heated, too and the PCBs are tested under controlled temperature conditions.

Depending on the current production line requirements, loading and unloading of the boards can be In Line, manually or by an automatic loading/unloading unit.

Precise and reliable contacting

The four-column adapter actuators guarantee precise parallel and flat contacting of the PCBs, even for large boards, high throughput and a high number of spring probes.

The variable adapter deviation offers the possibility to use long-travel spring probes for additional FCT. Contacting of PCB edge connectors for true FCT is also possible.

Monitored board centering pins do not only center the board, but prevent the fixture from closing, if the PCB has not reached its end position.

- Dual side contacting of PCBs
- Variable adapter deviation for FCT and ICT
- Contacting of PCB edge connectors
- Four-column adapter actuator for precise and reliable contacting
- Fast and safe exchange of the adapters
- Motor driven PCB conveyor adjustment
- Safe contacting by means of monitored board centering pins
- Easy operation, suitable for unskilled operators
- Hot operation (option): testing under controlled temperature conditions



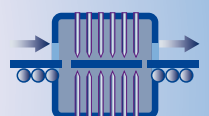
ATM 2630 Base Unit: Test Station

Left: Cabinet for the test system.

Above: Input conveyor and bar code scanner.

Right: Test station and test adapter, output conveyor.

Above: Operator panel with Touch-Screen control monitor.





Adapter Cassettes:

Upper and lower adapter cassette with protection covers: The covers can only be removed, if both adapters have reached the locked end positions. Exchange of the adapters is only possible with the hoods attached. This ensures safe change, transport and storage of the adapters.

Fast Board Style Conversion, Easy Operation

The motor-driven PCB conveyor adjustments are test program controlled.

An adapter identification code is associated with the corresponding test program and is used for the automatic program call. This allows fast and easy board style conversion even for unskilled operators and ensures the integrity of the system setup, the test adapters and the test program to avoid any production errors, caused by operator failures.

The adapters are automatically locked in their end positions for safe contacting to avoid contact errors or any damage of the contact springs, if an adapter was not fully inserted.

For transport purpose and storage, the test fixtures are protected with transport covers. It is only possible to unlock and exchange the adapters, if the covers are attached.



Example: ATM 2630 with loader, bar code scanner, contact station, buffer conveyor and unloader.

Contact Site: Upper and lower adapter cassette. Four-column adapter actuators and locked holding-down devices for parallel and flat contacting of the PCB.



Adapter open:
loading/unloading condition



Adapter partially opened:
for FCT, using long travel spring contacts



Adapter closed: In Circuit test, using
standard spring contacts

Suitable for each test system

hatec® takes care of the integration of your existing test system, or supplies complete solutions, including the test system, according to the needs of your production line.

We can also supply the test adapter, the spring probes for all kinds of applications and, if required, the test program.

Option: High Temperature Test

In principle, the PCB may be directly loaded into the heated test station (option).

Nevertheless, it makes sense, to have a heated funnel unit before the test station and a desoak unit after the test station. This increases the throughput because it avoids long soak times in the contact site and prevents the board from a thermal stress situation when entering the test station. The desoak area makes sure, that the boards cool down to ambient within a reasonable time for subsequent processing.

The contact site is under permanent temperature control. This allows safe board testing under all conditions, even for long test times, high test pin counts or units with high power dissipation.

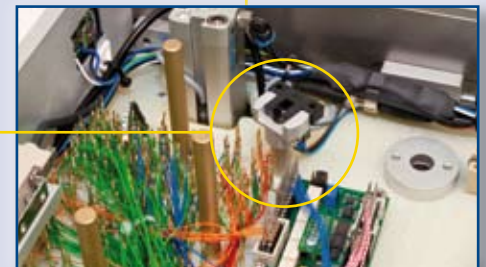
Adapter Actuator:

Robust 4-column shaft adapter actuator for parallel and flat contacting of the PCB.



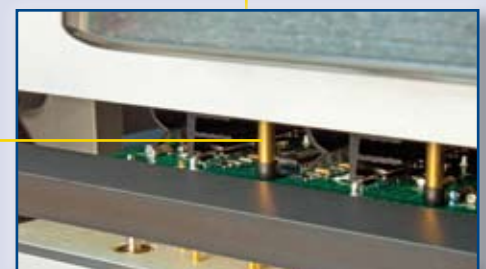
Adapter Safety:

Monitored board centering pins to prevent the fixture from closing, if the PCB has not reached its end position.



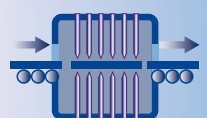
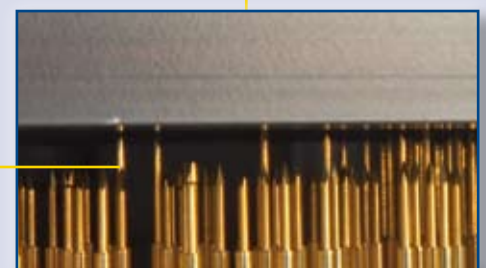
Board Positioning:

Parallel, locked holding-down devices for flat positioning of the PCB and safe contacting.



Variable Adapter Deviation:

The variable adapter deviation offers the possibility to use long-travel spring probes for additional FCT.



ATM-Modules and Options

The ATM system series ATM 2630/ 4550 are modular. hatec® provides various extensions and options for easy maintenance, programming, adaptation and integration in a production line.

- **Bar Code Scanner:** Dynamic scanning of all commonly used bar codes. The PLC controller is storing the bar code which was scanned during the test of the preceding board. This reduces the cycle time and increases the throughput.
- **Tempering Units:** Heat-up and desoak funnel modules for high throughput and reduced thermal stress of the PCBs.
- **Manual Work Station:** The adapters can be used on a manual work station. For board repair and test program debugging.
- **Adapter Service Cart:** Swivelling mount for repair, setup and modification of adapters.
- **Adapter Storage:** Storage container for space saving and secure storage of the adapter cassettes.
- **Loader, Unloader, Buffer:** Besides In Line loading and unloading, hatec® also provides a cassette loader and unloader as well as buffer modules.



Bar Code Scanner:

Dynamic scanning of bar codes: The bar code is scanned "on the fly", before entering the test station, irrespective of the ongoing test of a board.

- **Lifter Module for an Underfloor Backhaul Conveyor:** Backhaul of the PCBs after testing to the system input. Also for feeding of repaired devices or supply from device carriers.

Technical Data (Short Form)

Data are depending on the current system configuration and application. Detailed data and system information are provided on request. Please specify your requirements!

Index time (ambient, for zero test time):	typ. 7 s
Max. board size (boarder support width 3 mm):	ATM 2630: 300 x 260 mm ATM 4550: 500 x 450 mm
Max. number of spring probes, top/bottom:	2 x 1360 resp. 2 x 2210
Barcode / matrix code scanner, laser codes:	yes (Option)
In Circuit test:	yes
Functional test, using long-travel spring probes:	yes
Functional test, contacting of edge connectors:	yes
User interface, screen menu:	yes (Touch Screen)
In-Line conveyor height:	SMEMA (standard) SV70 (Option)
Test system for functional test and/or In Circuit Test:	for all kind of test systems

hatec® is your specialist for backend factory automation and In Line test handling of PCBs and assemblies in electronic production lines.

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The hatec® Quality Management is Certified acc. DIN EN ISO 9001

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