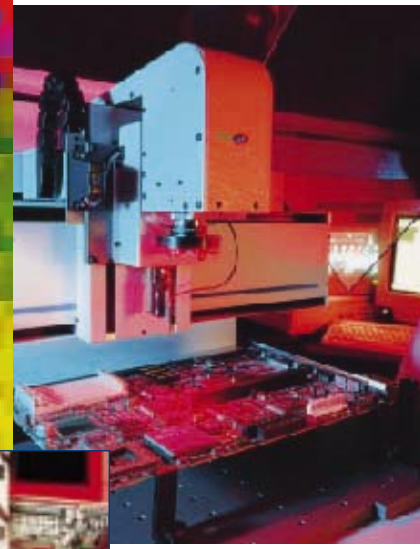
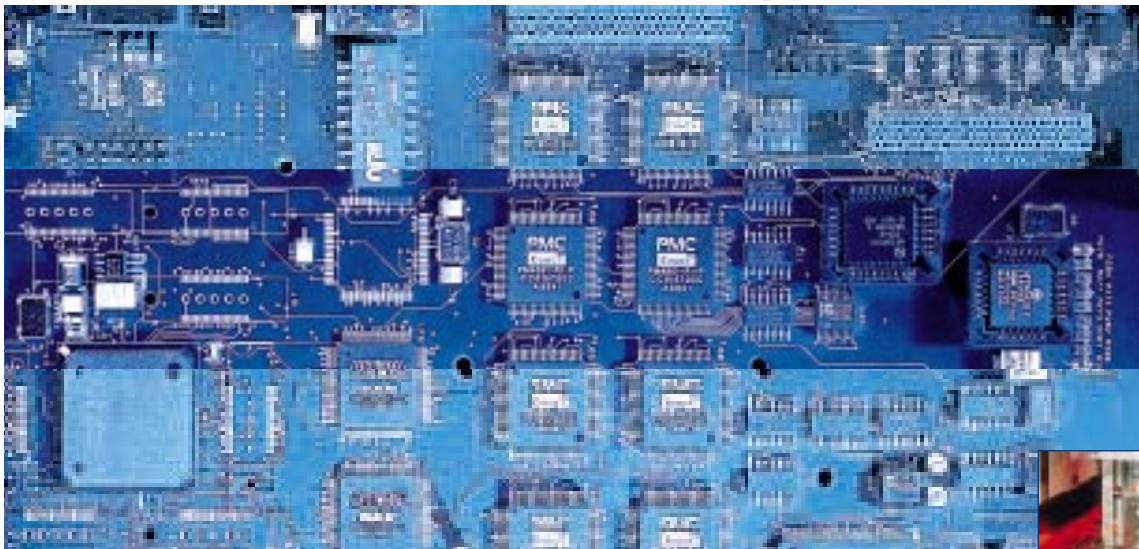


FT100s PCB Faultfinding System



*Flying Probe Test System
finds faults on loaded PCBs*

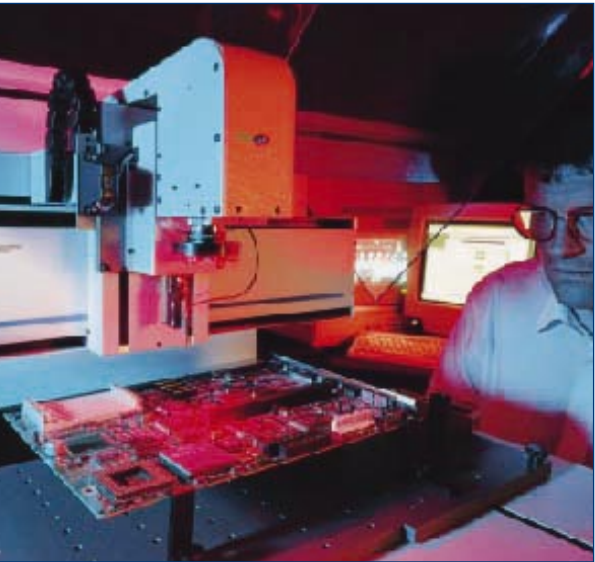
High positional accuracy

Fast set up

*Program manually or
with CAD*

Polar

polarinstruments.com



Flying Probe Test System
Finds Faults on PCBs

Finding faults on PCBs containing SMD devices

The pin spacing of SMDs (surface mount devices) is continually shrinking and this creates many difficulties when trying to test and faultfind PCBs. Some of the leads on ICs are so closely spaced that it is difficult for you to see them with the naked eye. In addition, frequent design changes to PCBs make it difficult for manufacturers to justify the costs or time required for dedicated ATE fixtures.

The Polar Flying Probe Test System offers you a solution by automatically probing the nodes of a PCB including each of the legs or PCB pads of fine pitch devices. You do not need a dedicated test fixture since the FT100 stores the position of each point to be probed. You simply use the FT100 to automatically probe and learn the response of a golden (good) PCB. Batches

of the same type of PCB can then be automatically probed and the FT100 will identify the differences.

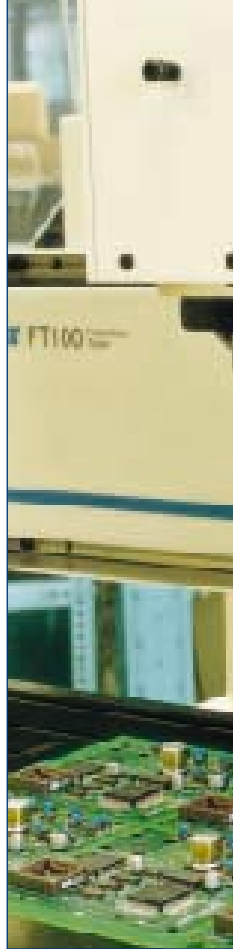
If the layout of a PCB changes, there is no fixture to modify as the FT100 software adapts to the new layout (you can also keep the original layout stored for future use). Effective testing of prototype and small production runs can now be done with a fast set-up and cost effectively.

High Speed Probing, Pinpoint Accuracy and large Z axis travel

The FT100 will test your PCBs quickly (typically 5 tests per second) and accurately (down to devices with 0.4mm lead pitch). Detailed attention to mechanical design includes a highly rigid frame, combined with independent X and Y movements driven by leadscrews.

The FT100's precision engineering ensures long term accuracy with high resolution and repeatability.

The long Z-axis travel of 100mm allows you to test PCBs that contain tall components. The system automatically detects the height of the PCB before commencing the test to ensure correct Z-axis travel and a reliable connection during test.





CAD import using FTCam

FTCam is an optional software module that allows you to directly import CAD (Computer Aided Design) data. Polar's FTCam imports details of components and their position using your CAD data, considerably reducing the programming time. You are also able to display a graphic representation of your board on screen, enabling you to find your way around by highlighting paths, nets, individual nodes or an XY test point location.

Learning the position of components

In addition the FT100 software contains a library that makes it easy for you to learn the position of components when you do not have access to CAD data. Using the joystick and camera you can learn the exact position of several pins on a device and the software will automatically interpolate and calculate the position of the other pins.

FTCam features include:

- Nodal test (one test per net giving fast test times)*
- Exclusion areas (define no-go areas for the probe)*
- Step and repeat (for multiple boards on one panel)*

FT100 used with In Circuit Test

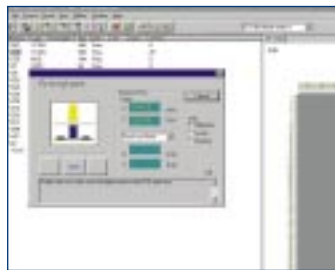
Many manufacturers use traditional in-circuit ATE for in line test of volume production. However changes in technology mean that access is now critical when attempting off-line fault diagnosis and the FT100 is ideal for this application as a complimentary tool for faultfinding ICT test failures. It will allow you to free up your ICT machines for test while the FT100 takes care of your debug.

FT100 used with Functional Test Systems

Manufacturers using functional test instead of in circuit ATE are achieving high first time pass rates once the manufacturing process is established. The FT100 flying probe test system is ideal for component level fault location on the small number of defective PCBs. After the PCB is repaired, it is put back through the functional test to confirm the repair.



Polar FTCam has import facilities for most of the common CAD formats, contact us for details.



Simple commands allow you to fly safely over tall components



The FT100 uses impedance comparison techniques to help you faultfind complex pcbs.



FT100 Applications in the Service Sector

The relatively short programming time makes the FT100 an ideal system in applications where you have a wide variety of different boards, including those with SMT, in low volume that require debug i.e. the service sector. Here you can utilise the fact that the FT100 can store the golden PCB information indefinitely and then can guide you to the most common faults for that board type using its statistical analysis.

Two Cameras

There is a monitor supplied with the system that allows you to see the test pin under all conditions without having to make manual adjustments. FT100 has a camera used to display the test probe making contact with the PCB or component during a test. There is a second independent camera to align the PCB with a cross hair during set up and learning.

Safety

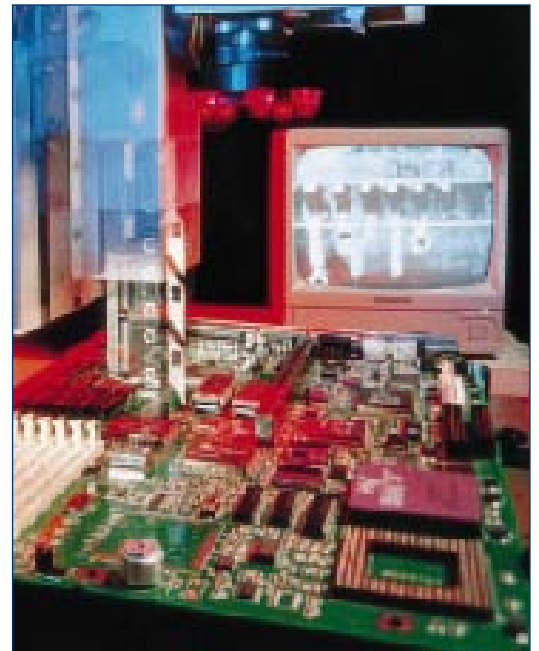
The FT100 complies with the latest safety regulations and is CE compliant. It has a safety hood and is fitted with safety switches that automatically stop all movement if the cover is lifted during a test.

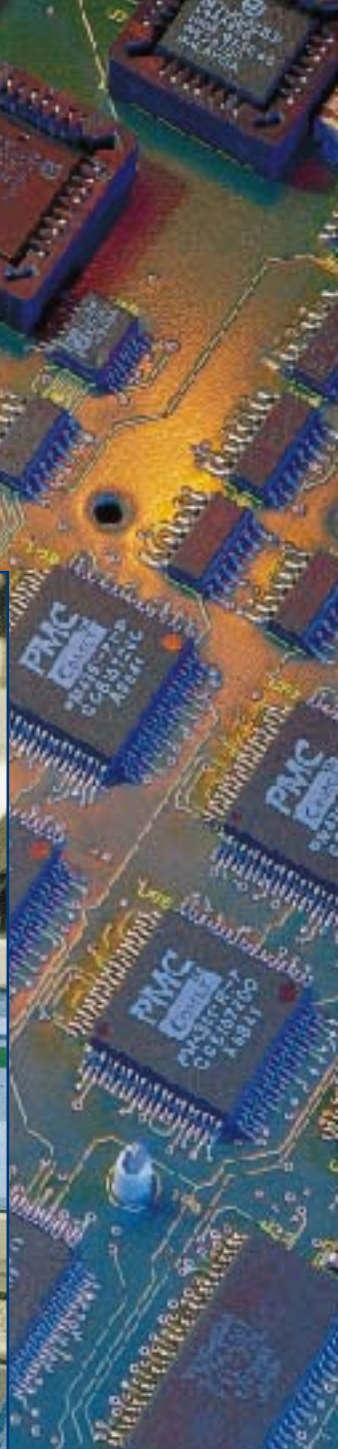
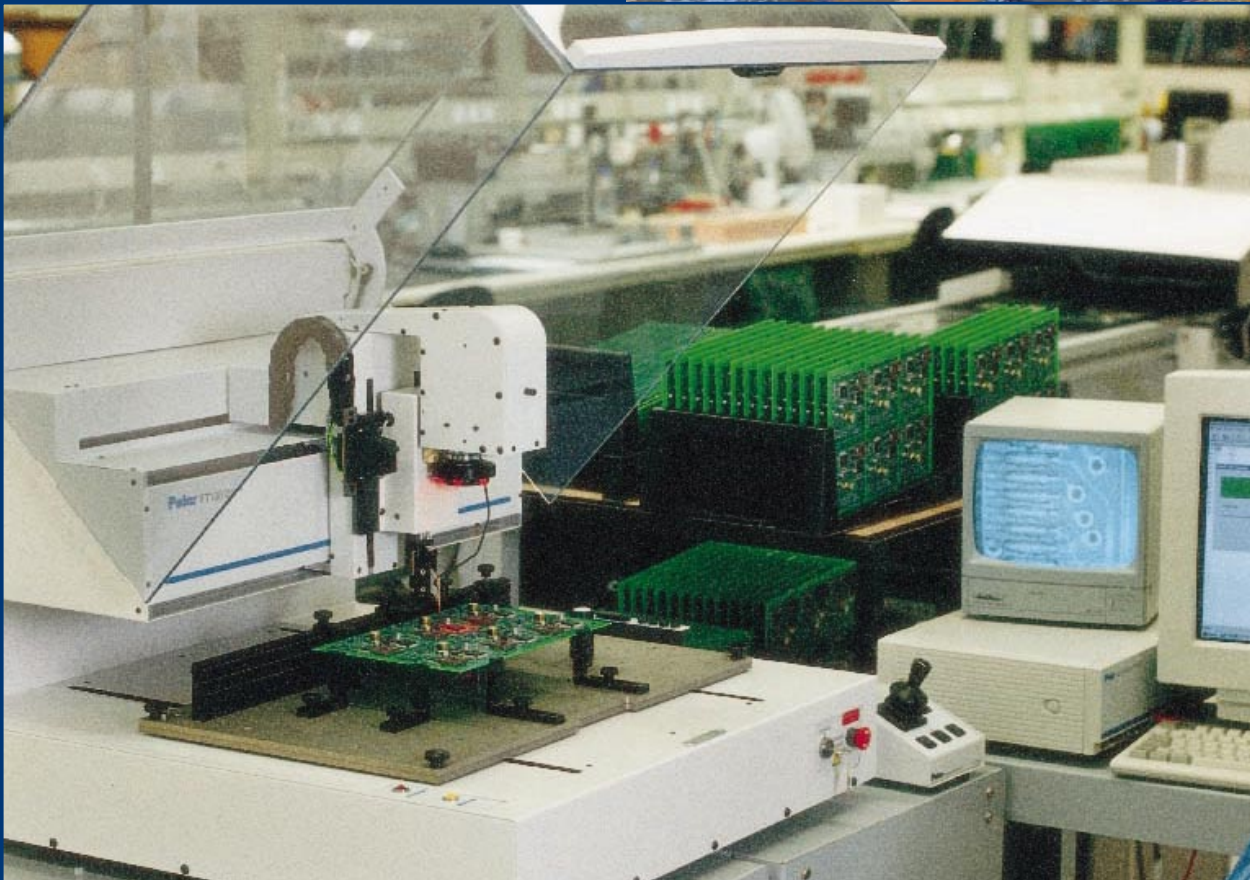


Benefits

The FT100 flying probe test system offers you the following:

- ❑ *No fixtures or ATE programming*
- ❑ *Minimum delay before testing new designs*
- ❑ *Suitable for short production runs and designs that change frequently*
- ❑ *Effective for pre-production batches*
- ❑ *Successful in post functional test repair station*
- ❑ *Successful fault location in both manufacturing and service environments*





FT100s is used to find faults on PCBs and is a key part of an integrated test strategy employed by manufacturers to produce high quality functional circuit boards





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FT100 Specification

Probing System Specification

	<i>Metric</i>	<i>Imperial</i>
Probing area (max.)	300x450mm	12"x18"
PCB size (max.)	330x630mm	13"x24.8"
Test speed (typical)	5 tests per second	5 tests per second
Component height (max.)	100mm	4"
Max. Z travel	100mm	4"
Accuracy	+/- 0.04mm over 300mm	+/-1.6 mil, 0.0016" over 12"
Repeatability (typical)	+/- 0.008mm	+/- 0.3 mil, 0.0003"
Resolution	0.016mm	0.6 mil, 0.0006"
Probe pressure	Less than 120gm	Less than 6oz
Dimensions	800x650x524mm	31.5"x25.6"x20.6"
Weight	90kg	200lbs

Cameras Two internal cameras

Interface and Connectors Custom Interface board supplied
(full length, 122mm height inc. edge connector)

Acquisition System Polar PFL760 or PFL780, ordered separately

Standard Accessories Supplied with external monitor and joystick plus all leads, cables
Operator Manual

Optional Accessories FTCam software, contact us for details of CAD formats supported.
Service Manual, part number MAN173

Controller Pentium PC, running Windows NT, 64Mb RAM, SVGA monitor

Approvals Conforms to applicable European Directives and is CE marked
Polar Instruments is ISO9001 certified

Nato Stock Number 6625 25 147 5816

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