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The Flying Scorpion

Incorporating over 22 world-wide patents in its design and construction, Acculogic's Flying Scorpion has evolved through cutting-edge research and development since 1998, to become the leading flying probe tester in the market.

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Key Features:

- Patented and proven double-sided probing
- Patented multi-probe system (up-to 24)
- Patented 3-D probing (programmable angle -6° to +6°)
- Quick and easy test program generation from CAD or Gerber data
- Precision analog test
- Power-off patented Open Pin detection on ICs, connectors, and other devices
- Board power-on test
- Boundary Scan (JTAG) test
- Mixed signal function test
- On-board device programming
- Advance multi-camera (up-to 8) dual sided optical inspection (AOI)
- Advance fault coverage report generator
- Statistical Process control (SPC)
- Barcode reader system
- Board marking system
- SMEMA compatible for inline operation
- Test large boards and backplanes

THE FLYING SCORPION: AN ENSEMBLE OF INNOVATIONS FOR FLYING PROBE TEST

Maintaining high product quality while keeping production costs low, together with aggressive schedules and time to market pressures, force manufacturers to choose lean yet effective test and quality assurance strategies for their production processes.

Flying probe testers require no test fixtures, have few restrictions on board access, and can test boards with virtually unlimited number of nets, allowing developers to turn test programs around in a short time. For these reasons and more, the flying probe tester has become an indispensable tool in today's electronic manufacturing.

The new generation of flying probes come from the application of new and innovative ideas to provide increased test speed, improved access, and greater fault coverage. The move away from the restrictions of 4-probe, fixed angle, single sided test systems has become a fundamental necessity in achieving highest test coverage and maximum through-put in a competitive and constantly changing manufacturing environment.

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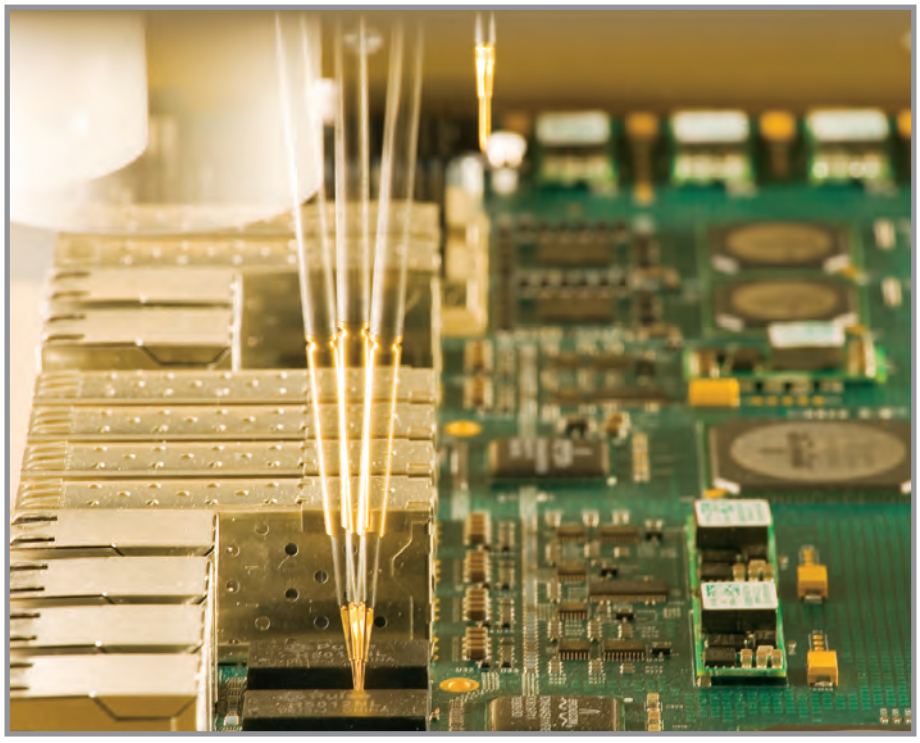
Moving probe testers are generally limited to four probes which operate at a fixed angle from the vertical. The Flying Scorpion provides 3-dimensional joy-stick-like probe motion, thus offering greater flexibility, test coverage, and speed. Benefiting from up to 24 probe modules and the ability to integrate specialized probes, the open architecture of the Flying Scorpion enables users to reconfigure and expand their tester to meet new challenges.

Operating in plants across the world, the Flying Scorpion has been selected by original equipment manufactures (OEMs) and electronic manufacturing service (EMS) companies alike to meet their most demanding technological and operational requirements



THREE DIMENSIONAL AND DOUBLE SIDED PROBING: THE WAY TO 'SINGLE PASS TESTING'

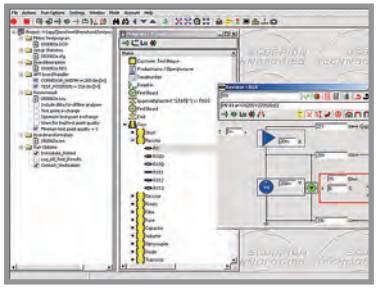
Modern large double-sided board designs and the latest high density packages increasingly make test access a challenge that only the Flying Scorpion can meet.

To overcome access limitations, the Flying Scorpion fully exploits a patented dual motion concept, in which shuttles drive on frictionless air bearings across a top and a bottom stator to accurately and quickly position 3-dimensional probes. This enables landing on selected test points simultaneously on both sides of the board. So no matter how test access is distributed between the top and bottom side of your board, the Flying Scorpion will always provide a ***Single Pass*** test solution. The planar motor concept guarantees a wear-free and no-maintenance operation. The probes can automatically recognize any obstacle and adjust the targeting angle by up to 6 degrees in any direction.

The 3-dimensional joystick-like variable angle Probe module provides the probe with a freedom of movement up to ± 6° from the vertical. This combined with its double-sided probing capability provides test access not available on conventional single sided moving probe testers.

Now you can test boards whose layout, size, and technology used to defy testing on traditional in-circuit testers and 'moving' probers.

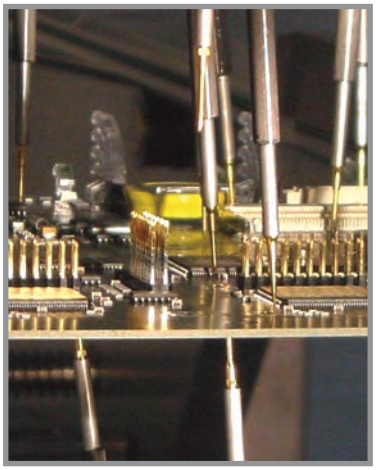
Integrator's intuitive graphical user interface



PATENTED MULTIPROBE SYSTEM: THE WAY TO 'FULL TEST COVERAGE'

The Flying Scorpion has a modular architecture that is expandable to 24 probe modules. The wide availability of different probe tip styles enables configurations providing best contact. In addition to proving excellent test coverage on today's densely populated assembled circuit boards, this flexibility makes the Flying Scorpion an ideal solution for testing backplanes where direct contact with connector pin tips is required.

Patented Multiprobe System



SHORT PROGRAM DEVELOPMENT TIME

The Flying Scorpion tester relies on two software modules for processing board CAD data (XMatic) and generating an executable program on the Flying Scorpion Tester (Integrator). Short programming cycles and high system flexibility make the Flying Scorpion an ideal choice for production ramp-up, prototyping, and low to medium volume production testing.

Highest Fault Coverage

The high speed and precision analog measurement unit provides 4-wire measurements capability for all 24 flying probes (top and bottom sides). All probes can perform in-circuit tests as drivers, sensors, or guards on discrete and integrated analog/digital components.

High speed and precision

Patented Open Pin Detection

Acculogic's patented Open-Pin-Detect (OPD) toolset for power-off "Vectorless" detection of open pins on digital and mixed-signal devices is an important test capability. OPD provides fast programming and comprehensive manufacturing process fault coverage.

ChipScan™ and **CScan™** patented vectorless tests extend fault coverage to ICs, including BGAs, and ICs with heat sinks, as well as connectors and polarized capacitors.

Automated Optical Inspection (AOI)

OpticalScan™ an optional multi-camera dual sided vision system with lighting provides vision inspection for presence, absence and orientation of components such as decoupling capacitors, polarity of electrolytic capacitors and presence of mechanical parts.

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BOUNDARY SCAN ON FLYING SCORPION

Boundary Scan test (JTAG) is a test methodology based on IEEE 1149.1 standard. Compliant Semiconductors, when installed on a circuit board, allow the interconnecting nets and digital clusters such as memory devices to be tested using a simple external physical set-up. Boundary Scan (JTAG) also offers a comprehensive board-level protocol for programming flash and other programmable devices.

Integration of boundary scan test into the flying probe environment translates into important advantages;

- Dramatic increase in test coverage by combined use of flying probe and boundary scan resources
- More efficient shorts test using flying probes and higher throughput
- Reusable Boundary Scan test patterns

Boundary Scan Features

- Standard dual Boundary Scan ports
- Factory integrated high-speed boundary scan controller with fully programmable TCK and drive levels
- Standard Digital I/O lines
- Optional additional boundary scan controlled digital I/Os
- Boundary scan infra-structure test
- Interconnect test, digital and analog cluster test, memory test
- Flash and in-system device programming (ISP)
- Intelligent graphical diagnostics

Backplane Testing

The capability to manage different probe tips across an extremely large test area, combined with double-sided probing provides the basis to fully test complex backplanes and backboards automatically. The application of cup and needle probe tips allows for direct contact of connector pin tips during test. Isolation testing of up to 10M at 100V can be performed using many of the available probe types.

PROBE MODULE CONFIGURATION (PM)

Model	Test Area	Top/ Bottom Side	Max. PM/Side	Total PM/System
FLS810S	33" x 25.6" 830mm x 650mm	T	8	8
		B	-	-
FLS810D	33" x 25.6" 830mm x 650mm	T	8	16
		B	8	
FLS850D	41" x 25.6" 1,050mm x 650mm	T	20	24
		B	20	
FLS850BP	41" x 25.6" 1,050mm x 650mm	T	20	24
		B	20	

FLS8X-0207-R1