



FLYING PROBE SYSTEM

# Aerial M4

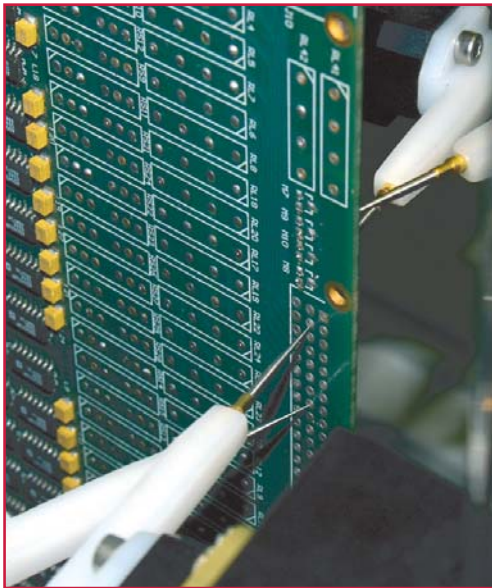
## Pilot Line



The Aerial M4 is a full-performance, double-sided, flying probe test system with an extremely high level of flexibility, making it the ideal solution for those with a wide variety of testing needs, from **prototypes to small/medium series**, through to the **repair of field returns** and even **reverse engineering**. It has a vertical architecture with two flying test probes on each side, two additional openfix probes, and two cameras (one on each side respectively). This configuration allows the Aerial M4 to perform true in-circuit tests, giving full access even to boards that do not have all the test points on one side. It has the capability to place guarding points and use all of the vectorless test techniques for ICs, with or without powering up the UUT. The reduced footprint of the AERIAL M4 makes it an easy fit into any work environment, while the vertical, compact architecture and the excellent board clamping system ensure that there is no oscillation of the board under test, which in turn greatly facilitates the precise positioning of the probes on the test points.

### The test tools and techniques of the Aerial M4 include:

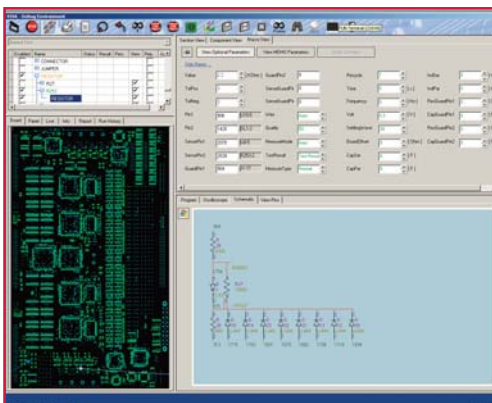
- FNODE signature analysis on the nets of the UUT
- PWMON net analysis with power on the board
- Vectorless tests (JSCAN and OPENFIX), to test ICs for opens and shorts
- Continuity test to detect open tracks on the PCB
- Analog and digital in-circuit test
- Optional functional and visual test capabilities and NETLIST learning procedure used to rebuild layouts and electrical schematics of boards when the relative technical documentation is incomplete or unavailable



All of these techniques can be combined in a single test program, to achieve maximum test coverage and test throughput. **The Aerial M4 can be provided with a comprehensive graphic software environment for fault location and repair** which can graphically display the test results (RPS module), store the history of all the tests executed (QSTAT module, and supply useful tips and information for the operator. Using the Diagnostic Expert System (DES) software, boards returned from the field can be repaired easily and quickly.

### VIP PLATFORM

The AERIAL M4 is based on the Seica VIP platform, which includes the innovative VIVA software. Test program development is organized in 3 simple steps: "Prepare", "Verify" and "Test", where the user is guided through a series of automated operations in an intuitive, self-explanatory environment, drastically reducing programming time and practically eliminating the possibility for error and omissions, consequently ensuring the quality of the final test program. For special application, the **extremely open architecture of the VIP platform** enables easy integration of external software modules and/or hardware, such as RS232, USB ports or GPIB and PXI/VXI protocols.



## TECHNICAL TABLE

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### PROBES AND CAMERAS

Probes Position - Test Side	Front/Rear
No. Maximum Probes	6
No. of Electrical Probes	4 (2 front, 2 rear)
No. of Openfix Probes	2 (1 front, 1 rear)
No. of Fixed Probes / Upgrade Up To	8 / 328
Digital Embedded Channels	4
No. of CCD Cameras	2 (1 front, 1 rear)
Automatic Marker Recognition	Yes
Automatic UUT Warpage Compensation	Yes

### BOARD CLAMPING SYSTEM, UTT SIZE AND WORK AREA

Board Clamping System	Manual
Active Test Area	415 x 610 mm (16.30 x 24.00")
Maximum Board Size	420 x 610 mm (16.50 x 24.00")
Minimum Board Size	20 x 20 mm (0.78 x 0.78")
Maximum Board Thickness	5 mm (0.19")
Minimum Board Thickness	0.3 mm (0.00118")
Maximum Component Height	37 mm (1.45")
Board Loading	Vertical
Automatic Loader	Not available

### PITCH

Minimum Pad Pitch	300 $\mu$ m (12 mils)
Minimum Pad Size	150 $\mu$ m (6 mils)

### PROBE FEATURES

Z-axis Travel	-3 mm to 37.5 mm programmable
Contact Force	25 g - 100 g programmable

### TESTS AND MEASUREMENTS (INSTRUMENTS DSP)

Voltage Generator 1 DC/AC (DRA)	$\pm 1$ mV to $\pm 10$ V ( $\pm 0.1\%$ )
Voltage Generator 2 DC/AC (DRB)	$\pm 1$ mV to $\pm 10$ V ( $\pm 0.1\%$ )
Voltage Generator 3 DC/AC (DRC)	$\pm 25$ mV to $\pm 100$ V ( $\pm 0.2\%$ )
Current Generator DC/AC	$\pm 1$ nA to $\pm 0.5$ A ( $\pm 0.1\%$ )
Waveform Generator 1 Sin, Tri, Arbitrary (DRA)	1 Hz to 3 MHz ( $\pm 1$ mHz) - $\pm 10$ V max
Waveform Generator 2 Sin, Tri, Arbitrary (DRC)	1 Hz to 10 KHz ( $\pm 10$ mHz) - $\pm 100$ Vmax
Voltage Measurements DC/AC	$\pm 200$ $\mu$ V to $\pm 100$ V
Current Measurements DC/AC	$\pm 3$ nA to $\pm 0.5$ A
Frequency Measurement	0.1 Hz to 10 MHz
Digital Embedded Channel	$\pm 12$ V - 500 mA - 10 MHz
Resistance Measurement	1 m $\Omega$ to 100 M $\Omega$
Capacitance Measurement	1 pF to 1 F
Inductor Measurement	1 $\mu$ H to 1 H
Zener Measurement	up to 100 V
Automatic Visual Inspection	Yes

### GENERAL REQUIREMENTS

Air Flow	7,06 CFM
Temperature Range	25°C $\pm$ 10°C
Humidity	30 - 80 %
System Power	220 V/50 Hz 12 A, 110 V/60 Hz 24A
Power Consumption	2.5 kW max
Weight	800 kg (1764 lbs)
Length	173.5 cm (68.30")
Width	82.5 cm (32.48")
Height	158 cm (62.20")
UUT Edge Clearance	2 mm

### SOFTWARE FEATURES

PC/Operating System	Windows XP
Software	VIVA
Automatic Test Generation	Yes
Autodebug	Yes
Data Input Format	Cad Data/Manual