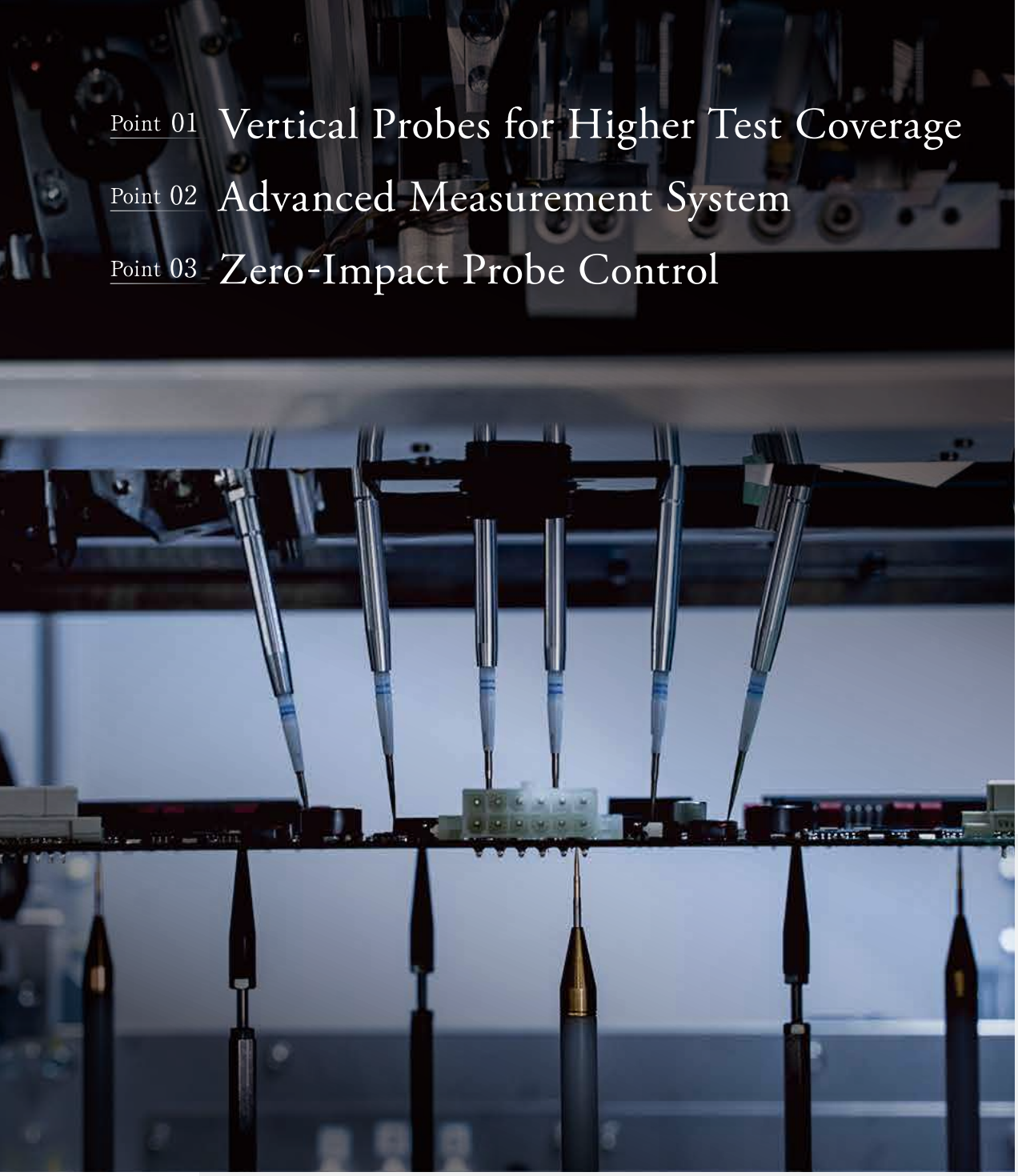
TAKAYA

Ultrafast Speed & High Performance

FLYING PROBE TESTER

APT-2400F Series



Point 01 Vertical Probes for Higher Test Coverage

Point 02 Advanced Measurement System

Point 03 Zero-Impact Probe Control

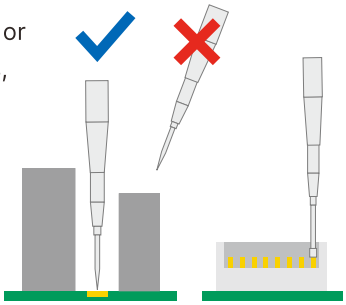
Continued Pursuit of Perfection.

The APT-2400F series is a high-performance flying probe test system with 4 heads and 6 flying probes. It accurately contacts the extremely small pads on miniaturized PCBs, conducting tests in a short time. With an advanced measurement system and a wide range of testing functions, it significantly improves test coverage and helps detect assembly defects and perform failure analysis that were previously difficult to identify. Offering various models for large PCB and automated testing, the APT-2400F series reduces testing costs from prototyping to mass production while enhancing assembly quality.

APT-2400F Series

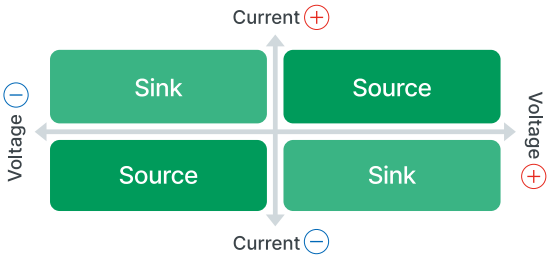
01 Vertical Probes for Higher Test Coverage

The unique 4-head & 6-flying probe system contains 2 vertical probes and 4 standard angled probes. This enables contact with previously inaccessible points, such as contact points between tall components or upward-facing connectors, significantly enhancing defect detection capabilities.



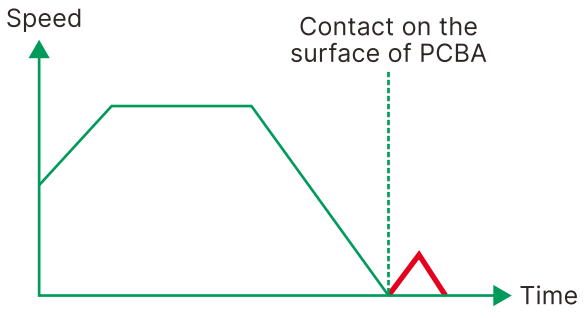
02 Advanced Measurement System

The APT-2400F series features a 16-bit DC 4-quadrant source and an AC programmable generator, allowing it to apply optimal measurement signals based on component specifications and circuit conditions. This enables both in-circuit and functional testing, effectively detecting a wide range of assembly defects.



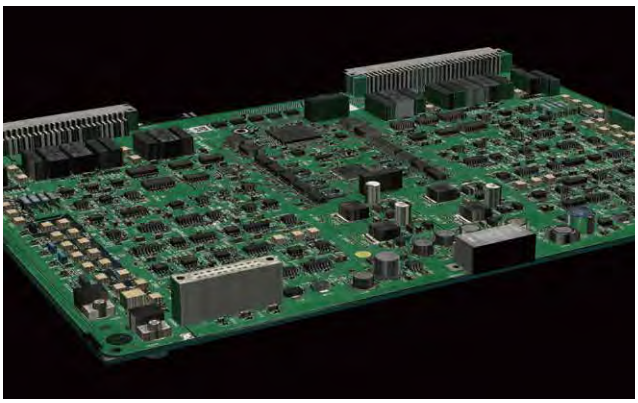
03 Zero-Impact Probe Control

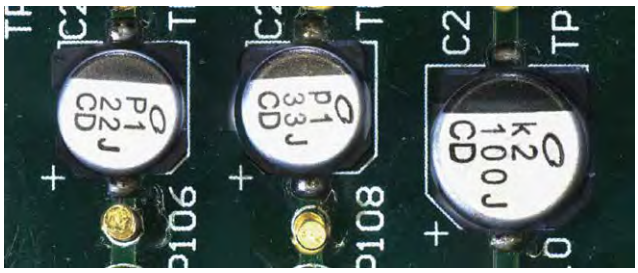
To minimize impact, the system reduces probe speed to zero just before contact, using only spring pressure. This greatly reduces stress on contact points and lowers the risk of board damage, ensuring safe, accurate testing even for delicate PCBs.



04 High-Resolution Vision System with Multi-Function

With a high-resolution camera and liquid lens technology, the system provides a wide depth of field, capturing clear images regardless of component height, making it easy to read markings on tall components. In addition to high-performance OCR and AOI, the imaging has evolved from 2D to 3D real maps, enabling checking of hard-to-reach areas and net connections between the top and bottom of the PCB.



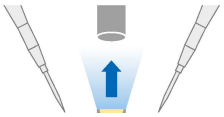


05 Temperature Sensor

The newly developed temperature sensor measures V-I curves to detect semiconductor failures and misassembled components that conventional in-circuit testing cannot.
It also offers temperature compensation and non-contact measurement to prevent temperature drift, further improving test coverage.

06 Flying LED Color Sensor

The flying LED color sensor detects differences in LED emission colors without dedicated fixtures. By quantifying hue, saturation, and luminance — difficult to distinguish visually — it ensures stable inspections with clear, precise criteria.

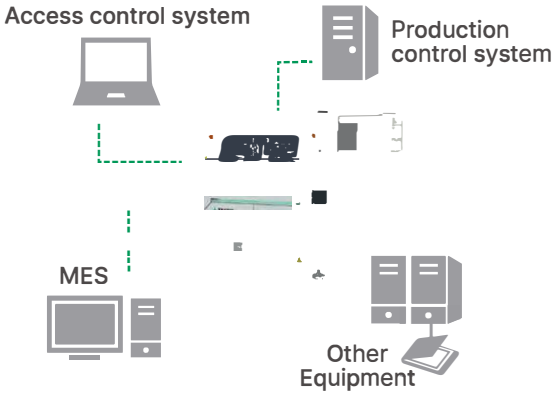


07 IC-OPEN System for Detecting IC Lead Solder Failures

The proprietary IC-OPEN test system detects IC lead solder failures in bus circuits, which are challenging to identify with standard QFP lead or BGA solder ball inspections.

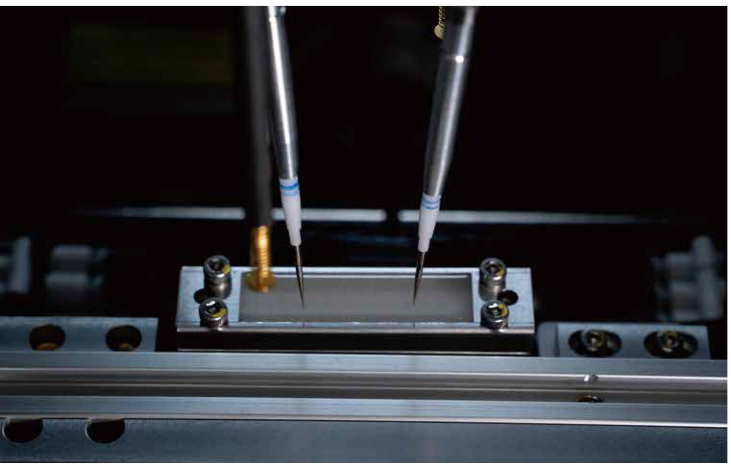
08 Industry 4.0 Ready

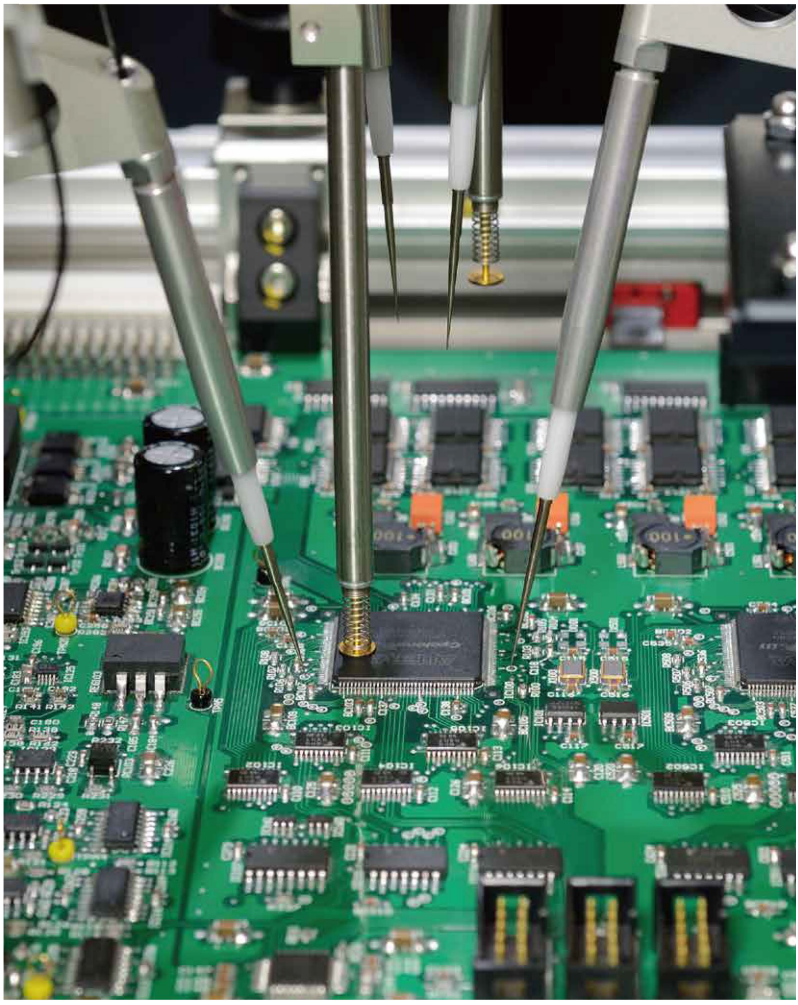
Multiple interfaces are available for seamless integration with your factory's network, enhancing QCD (Quality, Cost, Delivery) through quick traceability, inspection visualization, and rapid issue response.



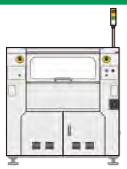
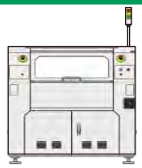
09 Automatic Probe Cleaning for Reliable Testing

The system includes a probe cleaner that automatically removes flux and dust from the flying probe tips, with adjustable cleaning interval. This reduces false judgments and ensures stable, reliable inspections.





Lineup

		Standard Size		Large Size	
Model		APT-2400F	APT-2400F-A	APT-2400F-SL	APT-2400F-SL-A
					
In-line system		—	Support In-line	—	Support In-line
Probes	Top*1	4 tilted contact probes, 2 vertical contact probes, 2 IC-open test probes			
	Bottom	3 fixed vertical contact probes with magnet base			
Testable PCB	Size(L×W)	540mm(21") × 483mm(19")	540mm(21") × 483mm(19") 890mm(35") × 483mm(19") *2	635mm(25") × 610mm(24")	635mm(25") × 610mm(24") 985mm(38.7") × 610mm(24") *2
	Thickness	6.35mm (0.25")		12.7mm (0.5")	6.35mm (0.25")
	Weight	5Kgs (11 lbs)		15Kgs (33 lbs)	
Component height	Top	60mm			
	Bottom*3	120mm			
Component-free area	Top	3mm			
	Bottom	3mm			7mm
Test time*4	Single test	0.05~0.06sec. / step		0.07~0.08sec. / step	
	Combination test	0.02~0.03sec. / step		0.03~0.04sec. / step	
Positioning repeatability of flying probes(XY)*5		±25μm			
Minimum pad size for flying probe*5		50μm			
Minimum pad pitch for flying probe		150μm			

*1 Dual vertical Z-axis equipped. *2 Divided PCB test function required. *3 PCB thickness included. *4 XY 2.5mm pitch movement.
*5 In high precision mode with high accuracy needle probe used.

■ Automated Conveyor System

By connecting the flying probe tester with a loader/unloader, a continuous automated inline system with speeds of up to 40 m/min can be established. To meet diverse user needs, the system supports buffer stations equipped with conveyors to minimize transport time and communication interfaces compliant with the IPC-HERMES-9852 standard.

Loader Unloader

Specification

■ Electrical tests

In-Circuit Testing / Open & Short Testing / On-Test for Passive Components
Lead & BGA Soldering Defects Testing / NSW Testing / Functional Testing / Voltage & Current Measurement
Frequency Measurement / In-system Programming / Boundary Scan Testing / Leakage Current Measurement ...

■ Other tests

Optical Testing: Presence, misalignment, polarity, incorrect part, color differences, etc.
Laser Testing: Component height, presence, misalignment, PCB warping, etc.
Temperature Testing: Temperature monitoring, semiconductor failures, incorrect part
LED Color Testing: Hue, saturation, and luminance of LEDs

■ Option

LED color test system / DC ±80V/±1A programmable source & measure board unit / Function scanner board / Marking unit
Temperature sensor / Probe cleaner / Multi-probe system / Lateral illumination / Fast track...

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