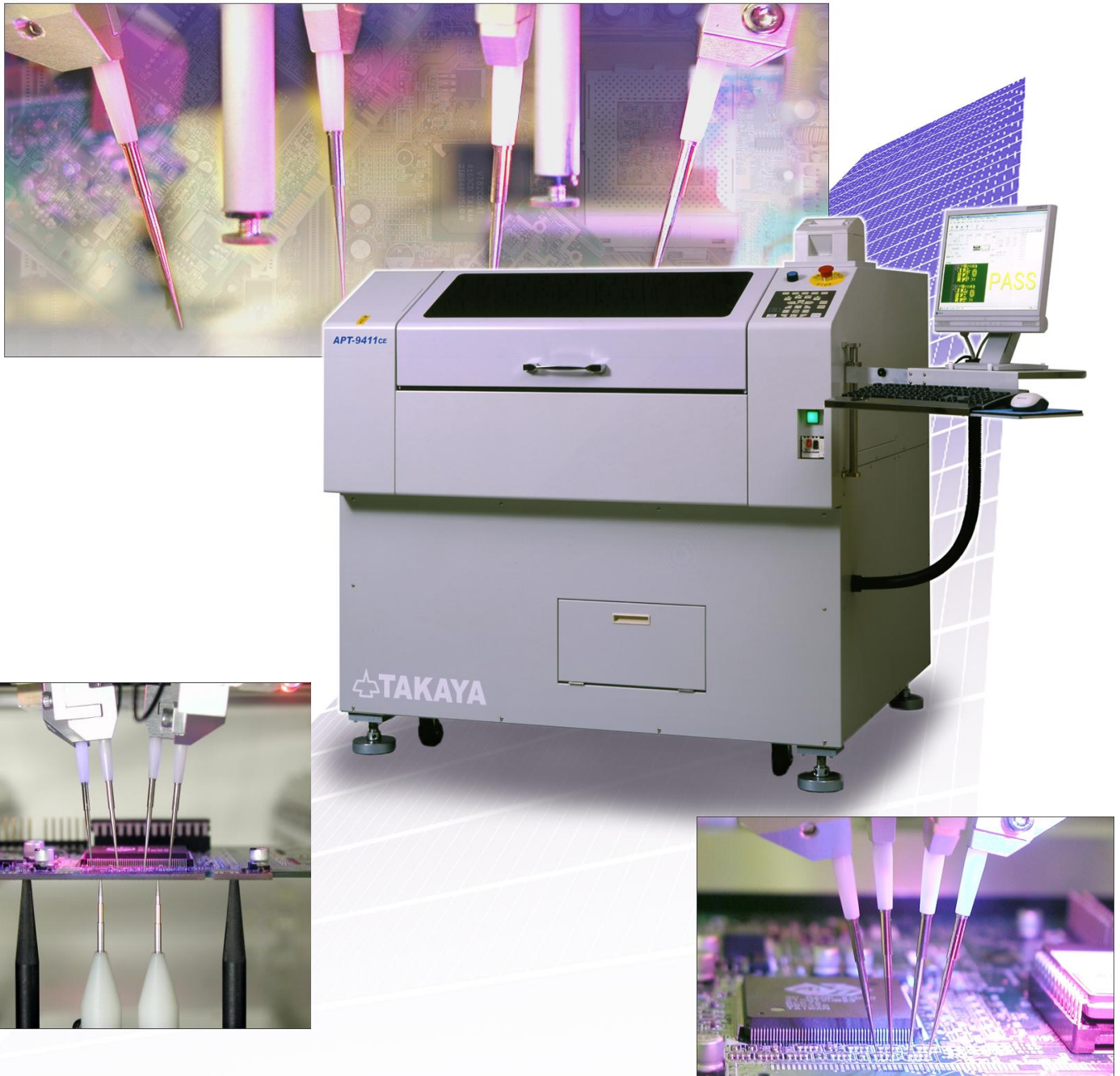


FIXTURELESS TESTER

# APT-9411CE



Takaya pioneered the concept of a flying probe test system and has a past record of selling more than 1,500 sets in major electronic makers and EMS plants in the world. The APT-9411CE is the latest model that rose out of a complete survey of the probe movement and positioning control and the measuring technique that Takaya has been accumulating for all these years. The APT-9411CE that achieved higher positioning accuracy and high-speed inspection and expanded the test coverage as well as the AOI function and other options will make a big contribution for your development in the EMS business, as well as cost-cutting measure and quality improvement in a wide range of your SMT products.

**TAKAYA CORP.**

## THE WORLD'S HIGHEST POSITIONING ACCURACY

The XY stage, crucial to stable and accurate probe contact, is made of highly polished native granite, whose surface accuracy remains unchanged even after years of prolonged use. Therefore, the APT-9411 series ensure high precision and stable probing contact.

## SUPERFINE MECHANISM

All the mechanisms of the APT-9411CE are designed based on a thoroughgoing analysis of structure, vibration and material, and the tester is extremely durable and is stable in the XY positioning contact due to the high-precision components used in the actuators. The probes enable to be spaced as close as 0.2mm and are accessible to high-density SMT boards easily.

## FAST PROBE MOVEMENT

All the XYZ axes combined with AC servo motor that has a superior rotating characteristic and the servo drive system employing the latest digital control technology are controllable on high speed and smoothly and cut down the stabilization time for the probe's positioning and inhibit vibration of the probes occurring when they come to a standstill. In addition, the APT-9411CE incorporates an excellent algorithm to rearrange test steps and the feature to optimize the flying height according to each component which will result in faster probe movement.

## ACCURATE, WIDE TEST COVERAGE

The APT-9411 series, taking advantage of the latest measuring technologies, measure a wide range of components on high speed and accurately, and the measuring signal is quite low and does not give electric stress to any device under test. In addition, the test capabilities of the APT-9411CE are further expandable via a wide variety of inspection systems in the market such as Boundary Scan and programmable power supplies for Power-on test etc.

## SIMPLIFIED VISION TEST SYSTEM

The APT-9411CE incorporates a micro CCD camera, high performance image processing unit and the two-colored LED lighting systems to ensure reliable and accurate vision test in the whole work area of the flying probes. In addition, you have a chance to install the second camera with a wide-field lens ensuring faster vision test and wider test coverage.

## EASY & USER-FRIENDLY SOFTWARE

The basic parts of test program are converted from the existing CAD data in an incredibly short time and versatile programming support tools helps automatic generation of reference value and measuring conditions so on. And ATG function and many powerful debug tools facilitate speed test generation. Thus even beginners can create high-quality programs with ease. In addition, the APT-9411CE offers a wide variety of options according to the user needs.

Contact probes	4 independently moving probes ( top side ) 2 adjustable probes ( bottom side )
Sense probes for IC open test ( option )	2 independently moving sense probes ( top side ) 6 ( max. ) adjustable sense probes ( bottom side )
Signal terminals for extension test ( bottom side, option )	3-ch terminals for power supplies 12-ch coaxial terminals for external measuring signal 64 terminals for analog in-circuit test probes
Motors	High speed / high torque AC servo motors ( X, Y, Z axes )
Test speed ( at 2.5mm pitch movement )	Combination test method : Max. 0.03 ~ 0.05sec / step Single test method : Max. 0.08 ~ 0.10sec / step
Positioning resolution	X, Y axes : 1.25 $\mu$ m Z axis : approx. 50 $\mu$ m
Minimum probe contact pitch	Approx 0.2mm ( in use of needle probe )
Guarding	Max 2 points/step
Test steps	Max 320,000 steps
Measuring ranges	Low value resistance : 40m $\Omega$ ~ 400 $\Omega$ ( in 4-wire Kelvin measurement ) Resistors : 0.4 $\Omega$ ~ 40M $\Omega$ Capacitors : 4pF ~ 40mF Inductors : 4 $\mu$ H ~ 400H AC impedance : 33 $\Omega$ ~ 330K $\Omega$ Diodes / Transistors / FETs : 0.1V ~ 2.5V ( VF ), ON test, Gain ( option ) Zener diode : 0.4V ~ 40V DC voltage : 80mV ~ 80V AC voltage : 80mV ~ 50Vrms ( f = 2KHz or less ) DC current : 100 $\mu$ A ~ 1A ( option ) Opto couplers : ON test, Gain ( option ) Relays/Switching devices : ON test ( Max. driving voltage DC24V/1A, option ) IC leads in bus-circuits : Open test ( option )
Vision test system	System model : TOS-5 or TOS-4, TOS-41 ( Customer choice in the order ) Camera : B/W micro-CCD camera, View field : 12 $\times$ 8mm, approx. Camera-2 ( option ) : B/W micro-CCD camera, View field : 32 $\times$ 24mm, approx. Illumination : Red/Blue-LEDs ( illumination intensity is controllable ) Application : Coordinates alignment, Simple vision test, Visual test aid, etc Simple vision test : Missing, Position, polarity, etc.
Testable PCBs specifications	XY : Max. 540 $\times$ 460mm Thickness : Max. 5mm Clearance : Top side 40mm or less Bottom side 95mm or less
PC Specifications	PC / AT compatible ( CD-ROM drive, Full keyboard, Mouse ) OS : Windows $\text{\textcircled{R}}$ XP
Display	15" LCD
Printer	Small thermal type
Power	AC200V, 220V, 240V ( Single phase ) 50/60Hz 2.5KVA
Environmental requirements	Temperature : 23 $\pm$ 7 $^{\circ}$ C Humidity : 20 ~ 80% ( no condensation )
Dimensions	W 1,375 $\times$ D 1,265 $\times$ H 1,300mm ( excluding Monitor / Printer ) 1,200Kgs
Options	IC Open test system for Top side, IC open sense probes for bottom side Programmable DC power supply board, Programmable DC power supplies for power ON test, GP-IB card for programmable DC power supplies, Power relay board, Extension scanner board, Coaxial scanner board Coaxial robot cable with buffer AMP, I/O board for external equipment, Bottom fixed probe unit, Shuttle conveyer station for APT-9411CE-A, so on.

\* Windows $\text{\textcircled{R}}$  is a registered trademark of Microsoft Corporation.

\* Specifications are subject to change without any obligation on the part of the manufacturer.

## GENERAL SPECIFICATIONS



## Distributor



**Accelonix BV**

Luchthavenweg 18b • NL-5657 EB •

Eindhoven • The Netherlands •

T: +31 40 750 1650 • E: info@accelonix.nl