

**ULTRAFAST SPEED & HIGH PERFORMANCE  
FLYING PROBE TESTER**

# **APT-1400F**

The APT-1400F is a next-generation flying probe test system which has unprecedented performance in terms of test speed, positioning accuracy and test coverage. Owing to major improvement in test speed and positioning accuracy, the APT-1400F is capable of having the probes contact extremely small test pads deployed on the latest SMT boards with a high degree of accuracy to test it in a small amount of time. In addition, the APT-1400F is provided with the breakthrough 4-heads & 6-flying probes, the sophisticated measuring system and a number of innovative test capabilities that achieve a real improvement in test coverage and contribute the detection of assembly faults which were previously impossible.



## **BREAKTHROUGH 4-HEADS & 6-FLYING PROBES SYSTEM**

In addition to the four standard moving probes which are installed diagonally to the board under test, the APT-1400F is designed to use other two Z axis units(option) where either probe or IC-open test probe can move up and down vertically. The vertical Z axis units enable to get access to the test points where are hard for the standard moving probes to do that and also enable to contact the location at different height with accuracy. In addition, it's possible to directly contact the through-holes and the head of connector pins by using dagger and inverse cone head type of probe, resulting in increased test coverage.

## **SAFE AND HIGHLY ACCURATE MEASUREMENT SYSTEM**

The APT-1400F incorporates 16-bit DC 4-quadrant sources & measurement system and AC programmable generator which is also finding uses as function generator in the measuring unit, so that the tester is capable of applying the best suited measuring signals according to specification of each electronic component and the circuit conditions and realizes the circuit test and dynamic characteristics test. Also, the dedicated measuring mode for very small capacitance and the high measuring accuracy circuit give aid to detect wide range of assembly faults.

## **STRONG AND RIGID XY STAGE**

The tester's XY stage, crucial to stable and accurate probe contact, is made of highly polished native granite, as well as the APT-9xxx series which is thought of as the global standard model of the flying probe testers. In addition, the structure of the XY stage has been completely reviewed according to faster moving speed of the probes and the precision components adopted in the tester have the quality to last long. Also the positioning accuracy is finely tuned tester by tester. Therefore, the APT-1400F ensures the superfast movement of the probes and also increases the positioning accuracy by 25% comparing to the conventional models.

## **ULTRAFAST TEST SPEED**

The state-of-the-art high power & fast-moving driving motor system and the new high-speed communication control contribute speed up test 30 ~ 50% faster than the conventional models. In addition, utilizing 3 bottom probe units makes combination test more efficient and cut the test time down.



## COLORED TOS SYSTEM AND REAL MAP

The APT-1400F is equipped with new vision test system TOS-7F corresponding to color images as standard. Owing to the megapixel color digital camera and the ring illuminations with high-intensity white LED, the TOS-7F can import sharp color image to detect missing, wrong orientation and positioning error on the spot. In addition, the TOS-7F can not only import the barcodes (include 2D codes) but also offer color identification test, OCR function and Library function which are supported by the optional software. Also, the APT-1400F is equipped with the colored Real map function which is of remarkable help to check and modify the contact points during debugging the programs.

## EASY & USER-FRIENDLY SOFTWARE AND SECURITY FUNCTION

The software builds up with easy-to-follow operation menu and is provided with versatile functions which reflect the opinions of our users from more than 40 countries, such as Menu-customized function, Multi-language display function(option), Data library function(option) and storage function that can maintain a history of automatic settings, operation and so on. All those features give aid to cut down your time to programming test and manage the test programs in safety.

## ATTENUATING CONTACT PRESSURE OF PROBES

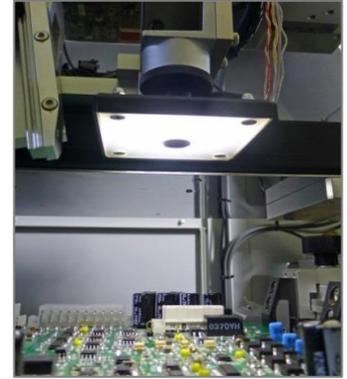
The APT-1400F has enough ability to freely control the probing speed just before it contacts. This enables to minimize the probing marks on small and sensitive test lands without the need to slow down the movement all the way to the bottom.

## TEST ABILITY IN A CONSTANT STATE OF EVOLUTION

The APT-1400F serves its customers with versatile option boards and software that achieves their particular needs, such as the LED color test system that tests color and brightness of LED devices on the board under test, the Boundary testing and the Functional testing. In addition, the tester will have even more advantages to enhance its test coverage and speed up test although they are currently under development.

## IN-LINE APPLICATION

An in-line model can be built-to-order to establish full automated operation in your production line or rack-to-rack system. To meet various user's needs, it's possible to provide the conveyor installed with buffer stations to cut down the transport time as much as possible and an auto-conveyor width adjustment unit.



## Specifications

|  |   |
|--|---|
| Flying probes for top side                           | 4 tilted+2 vertical contact probes(option), 2 IC-open test probes(option), 2 LED color test sensors(option)   |
| Fixed probes with magnet base for bottom side        | 3 vertical contact probes, 8 IC-open test probes(option)  |
| Signal terminals of bottom side for extension test   | 3 channels with power relay board(option), 8 channels with function scanner board(option), etc.   |
| Positioning resolution of flying probes              | X and Y axis: 1.25 $\mu$ m (0.05mil), Z axis: 5 $\mu$ m (0.2mil)  |
| Test time (at 2.5mm pitch movement)                  | Single test: Max. 0.05 - 0.06sec. /step, Combination test: Max. 0.02 - 0.03sec./step  |
| Positioning repeatability of flying probe (X/Yaxis)  | Approx. $\pm$ 25 $\mu$ m( $\pm$ 1.0mil) in the high precision mode  |
| Minimum pad pitch which can contact by flying probes | 150 to 190 $\mu$ m(6 to 7mil) in use of needle probes   |
| Minimum pad size which can contact by flying probes  | 60 to 80 $\mu$ m(2.4 to 3.2mil) in use of needle probes   |
| Measuring sources                                    | DC voltage/current generator, AC constant voltage generator(available as function generator)  |
| Test & measuring ranges (options are included)       | DC voltage & current, AC voltage & current, Frequency, Resistors, Capacitors, Inductors, Transformers<br>Zener voltage, Diodes/transistors/FETs, Relays/opto couplers/switching devices, Lighting color of LED<br>Open fault detection of IC leads, Isolation test, Continuity test, etc. |
| Vision test system TOS-7F                            | Application : Alignment, simple vision test, reading of barcode & 2D code, OCR/color identification(option)<br>Test item : Missing/shifting components, incorrect components, polarity, etc.  |
| Testable PCBs specifications (max.)                  | Test area: 540 x 483mm(21" x 19"), Component height: top side 60mm(2.4") bottom side 120mm(4.7")  |
| OS   | Microsoft® Windows 7 (32bit version)  |
| Power & air supply                                   | AC200 to 240V(single phase), 50/60Hz, 2.8KVA Air: 0.6 to 0.7Mpa (dry clean air)   |
| Environmental requirements                           | Temperature: 16 to 30°C ( 60 to 86°F ) Humidity: 30 to 75% (no condensation)  |
| Dimensions (excluding Display / Printer) / Weight    | W1400(55") x D1500(59") x H1400mm(55") / 1350Kgs(3000 lb)   |

※This leaflet contains untested technologies and options being developed as of March, 2014.

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



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