

T323 and T310 In-Circuit Tester T323和T310在綫測試臺

Special Testing Features:

獨特測試功能:

- **Boardmap fault locator** 出錯元件顯示
Automatic graphic display of fault location
顯示電路板的圖形并自動顯示出錯元件的位置
- **Super debug mode** 超強測試方式
Permits fast trouble shooting. Programmable options include driving current, delay time and testing frequency.
主要針對作進一步微調學習和測試程序，優化測試結果，可編改驅動電流，延遲時間及測試頻率。
- **Waveform analyzer** 波形分析儀
Assists in determining required delay time for accurate measurement.
直接觀察測試波形，以便更改測試的延遲時間，無須盲目多次嘗試。
- **Electrolytic capacitors reverse** 電解電容反插檢測
A reverse-mounted electrolytic capacitor can be detected by probing the aluminum case of the component.
透過測量外殼的電壓或漏電電流可判別電容是否反插。
- **Bipolar Transistor 3-Point Test h_{FE}**
晶體管三點測試能測h_{FE}值。
- **Diode test** 二極管測試
Differentiates power, signal or Zener diodes.
可區別功率、訊號和齊納二極管。
- **Small Signal Power Up Test** 低功率功能測試
Applies power to a board to check signals.
提供低功率，低電壓的驅動電源，作功能測試。

Software Features : 軟件性能

- **Easy to Operate** 操作簡易
User friendly Windows 2000 or above.
采取易用的視窗2000或以上操作界面
- **Easy to program** 易于編程
Programming is easily accomplished through Auto Learn, Waveform Analyzer, Auto Guarding and Automatic Optimize testing parameters. (It will vary you if you key in cap. when you are testing coil.)
測試參數可通過自學測試而輕易獲得，強大的編輯器，波形分析，自動隔離，自動測試條件調整，提示輸入錯誤資料（例如：當測電感時，但錯誤輸入電容類別）等眾多的手段。
- **Data Transfer Generator (DTG)** 數據轉換器
Test programs of many ICT manufacturers can be converted to T323 format by DTG, avoiding reprogramming and date loss.
很多其他品牌的ICT測試程序可通過DTG轉換到T323格式，避免重新編程及數據丟失。

Auto Test Program Generator (ATG)(Optional)

測試程序產生器 (ATG) (選項)

Most CAD files can be converted without data loss to the T323 test program by FABmaster ATG, saving valuable time.

大多數CAD文件通過FABmaster ATG轉換到T323測試程序，數據不會丟失，省時，效率高。

Hardware Features : 硬件特性

- **High-speed Performance** 超高速性能
CMOS scanning switch
使用高級模擬開關器件獲得高速的開關速度
- **Accuracy** 高精度
16 bit digital-to-analog and analog-to-digital converter offers 64K resolution for accurate measurements.
使用16位 D/A 和 A/D，具備64K分辨率，獲得高精度測試。
- **Reliable measurement** 可靠測量
Direct Digital Synthesis (DDS) generates low-distortion test waveform with high frequency stability. Proprietary advanced Digital Filtering Technology (DFT) provides an excellent signal-to-noise ratio for stable measurement.
直接合成數碼波形產生器 (DDS) 及數碼濾波技術 (DFT) 提供可編程的正弦波、具有穩定，低失真，高訊噪比，從而提高了測試的可靠性。
- **6-Point Measurement Scanner** 六綫測試技術
Internal 6-point measurement scanner minimizes voltage potential drops during measurement, ensuring high accuracy.
內部六綫測試技術克服開關內阻的影響，以確保高精度準確。
- **8-Point Measurement Scanner** 八綫測試技術
Internal 8-point measurement scanner based on the Kelvin method can be selected for measuring very small resistor, capacitor and inductor values.
內部八綫測試技術採用開爾芬 (KELVIN) 電橋方式；用以精確測量低電阻、電容及電感。

Full testing features : 全面測試功能:

- Auto learn with measurement/test methodology optimization 自動學習優化和調整測試方法
- Auto guarding 自動隔離
- Missing IC and orientation check IC漏插及方位檢測
- IC protective diode learning and test IC保護二極管的學習與測試
- Loop test 重複測試
- Pin number search function 針號檢索功能
- Self diagnostic function 自我診斷功能
- Small capacitance values are measured by canceling the stray capacitance between the scanner and probes 把系統電容抵消，以準確量度小電容
- Provides daily or accumulated pass/fail statistics of the test results 提供每日或累積測試結果報告
- A fixed voltage generator offers a fast method of charging the capacitors and saves time during testing 恒壓源充電方式能提高測試速度
- Ten highest component failure display 顯示十個最多錯誤元件情況



實板圖顯示錯誤元件位置
Boardmap display of fault location

波形分析儀
Waveform Analyzer

雙壓頭測試環境
Display for dual head test environment

Options 多種選項



- Functional Test Module 功能測試模塊**
 Applies power to PCB to check signals. It also can connect external signal source, instruments and oscilloscope for further critical performance test.
 提供電源作功能測試，更可連接外置訊號源、儀器、示波器作關鍵的履行測試。

TestJet probes can be used alone or combined with standard pins on the same test fixture. TestJet technology is recommended for detecting open pins of SMT semiconductor packages, BGA



HP TestJet 技術在SMT中的應用
 HP TestJet Technology available for SMT application

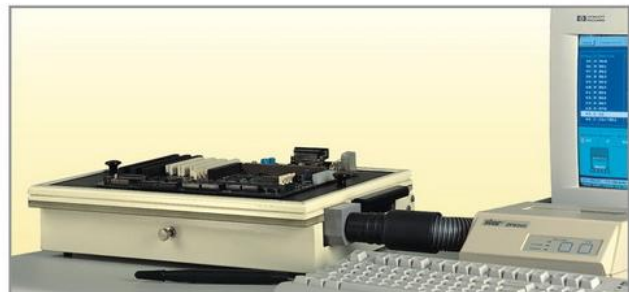


雙壓頭系統
 加一個雙壓頭可測試兩個不相同電路板使生產更靈活、提高效率。
 For the same Unit Under Test (UUT) or a different UUT reduces handling time for PCBA loading and unloading.

- Auto stamp 自動印章**
 Imprints a stamp, indicating passed UUTs.
 自動打印圖章在被測部件，以顯示通過檢測合格。
- External discharge module 外置放電模塊**
 Discharges residual high voltage and ESD on UUT before testing.
 Protects input circuits.
 釋放殘余高壓電以保護被測電路板。
- Bar Code 條碼記錄**
 Keeps track of UUT's test status and failed records.
 保存被測部件測試狀況與失效報告。

(without internal ground plane), sockets and connectors. The photograph on the left shows TestJet electronic probes integrated in a Concord Technology test fixture. The Purchase price for this option includes an HP TestJet license.

HP TestJet 針床可單獨或組合用于在用的測試針床，此技術可用于測試元件腳的開路和空焊，例如：SMT元件、BGA元件、插座及連接器。左圖可見 HP TestJet 探頭安裝在振華之測試針床，此配置價格包含 HP TestJet 的使用許可權費。



真空針床
 In-circuit tester equipped with a vacuum fixture.

Specification 技術指標

Concord Technology T323 and T310

General:

Basic channels installed: 512 test channels
 Maximum expandable test channel: 1024 test channels (expandable to 2048 test channels)
 Configuration of scanner board: CMOS switching technology. Typical 6-wires measurement for general purpose component test. Aggressive 8-wires measurement method for high-precision, small value component.
 Guarding circuitry: 5 guard points per step
 A/D, D/A: 16-Bit
 Signal source: DC measure: programmable current source 0.1 μ A - 20mA
 programmable voltage source 0V - 10V
 AC measure: Digital Synthesis Sine Wave Programmable Frequency from 1Hz - 64KHz

Open/short Testing

Threshold value: Programmable range from 1 Ω - 99 Ω
 Testing current: 1mA - 10mA
 Testing speed: 500 test points per second

Resistance

Range: 0.1 Ω - 40M Ω
 Speed: 2.6ms - 100ms(Typical: 2.6ms)

Capacitance

Test range: 1pF - 50,000 μ F
 Speed: DC method: 8.6 ms - 60 ms
 AC method: 18 ms - 36 ms
 RC Parallel Test: Bi-frequency method
 ECAP Polarity Check Case Voltage measurement

Inductance

Range: 1 μ H - 40 μ H
 Speed: 15 ms - 55ms (Typical: 20ms)

Diode, Zener, Transistor, Photocoupler & Ic Diode Test

Test Current: 0.01mA - 20mA Programmable Current Source
 Test Voltage: -2V - 10V Programmable Voltage Source
 Zener Test: Max. 10V (Optional 40V)
 Transistor, FET & Photocoupler: Vce (or Vds), hfe
 Programming steps: Approx. 10,000 test steps per test program

Type Of Fixture

Pneumatic Fixture: 12" x 17" (305mm x 432mm) Max.
 Vacuum Fixture: 17" x 20" (432mm x 508mm) Max.

Computer

CPU: Intel celeron 3.06GHz or above
 Memory: 2G or above
 Hard Disk: 250G or above
 Monitor: LCD high resolution monitor
 Printer: 40 columns

Electrical Supply

Operating Voltage: 110 / 220V AC Single Phase
 Frequency: 50Hz / 60Hz

Working Environment

Temperature: 0 $^{\circ}$ C - 45 $^{\circ}$ C
 Humidity: 10% - 90%

振華科技T323和T310

一般情況

基本測試通道: 512個測試通道
 最大測試通道: 1024 測試通道(選用擴充機箱, 可達2048個測試通道)
 通道板: 使用CMOS模擬開關, 8條模擬總線, 常規使用6線測量, 小值元件可用8線測量消除接觸電阻(選配8線通道板), 每通道板容量64個通道。
 隔離電路: 每測試步驟5個隔離點
 A/D, D/A: 16 Bit
 信號源: DC: 恒流0.1 μ A-20mA (連續可調)
 電壓0V-10V (連續可調)
 AC: 正弦波頻率1Hz-64K Hz (連續可調)

開/短路測試

開短路閾值: 1 Ω -99 Ω 之內二極可編程
 電流測試: 1mA-10mA
 測試速度: 每500個測試點需1秒

電阻

範圍: 0.1 Ω -40M Ω
 速度: 2.6ms-100ms(典型為2.6ms)

電容

測試範圍: 1pF-50,000 μ F
 DC量度方式: 8.6ms-60ms
 AC量度方式: 18ms-36ms
 RC並聯使用雙頻量度方式
 ECAP 極性測試外殼電壓量度

電感

測試範圍: 1 μ H-40H
 測試速度: 15ms-55ms(典型為: 20ms)

二極管、齊納二極管、場效應管、晶體管、光電耦合管和IC的保護二極管

電流測試: 恒流0.01mA-20mA (隨意可調)
 電壓測試: 電壓-2V-10V
 齊納二極管測試: 最高10V, 最高可達40V(選項)
 晶體管及光藕合管: Vce, hfe
 元件測試步數: 每測試步程試最多可有10,000步的測試

針床類型尺寸

氣動針床: 15in. x 22in. (381mm. x 533mm.) 最大。
 真空針床: 17in. x 20in. (432mm. x 508mm.) 最大。

電腦

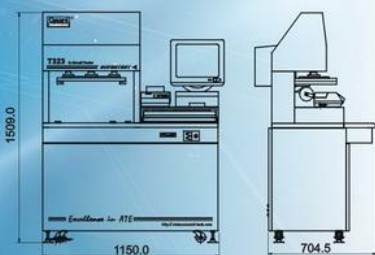
中央處理器: Intel celeron 3.06GHz 或以上
 儲存器: 2G 或以上
 硬盤: 250G 或以上
 顯示器: LCD高分辨彩色顯示器
 列印機: 40行高速列印機

電源要求

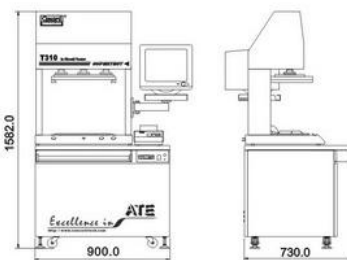
電壓: 110/220V AC 單相
 電頻: 50Hz/60Hz

標準工作環境

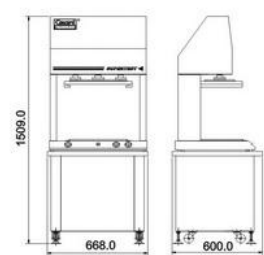
溫度: 0 $^{\circ}$ C-45 $^{\circ}$ C
 相對濕度: 10%-90%



T323/230kg



T310/180kg



雙壓頭/150kg



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振華科技成就:

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 1992年—總督工業獎; 廠商會機器及設備設計獎
 1994年—總督工業獎; 廠商會機器及設備設計獎
 1995年—榮獲香港政府研究及發展基金
 1996年—香港工業獎; 廠商會機器及設備設計獎
 1997年—香港工業獎; 廠商會機器及設備設計獎 優異證書
 1998年—香港工業獎; 工業科技中心之科技成就 優異證書

代理商