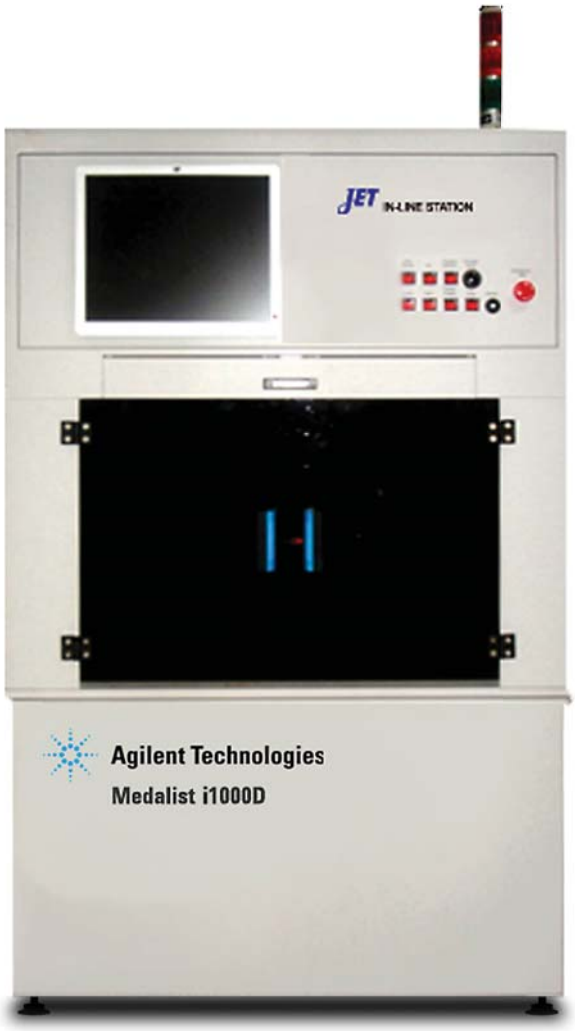
Agilent Medalist i1000D with Board Handler

Application Note

The i1000D with JET board handlers enables low-cost in-circuit test in a fully automated environment with reduced labor cost while enabling higher test coverage for components on manufacturers' printed circuit board assemblies.



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Overview

The Agilent Medalist i1000D in-circuit test (ICT) system is a revolutionary platform with best-in-class price-performance offerings. It comes with award winning state-of-the-art features to answer most test challenges faced by today's manufacturers. Advanced limited access test features, coupled with a simplified, automated software model, shortens the learning curve of new users. Field evaluations have demonstrated that the i1000D delivers the fastest ramp up of test coverage among all similar-category testers.

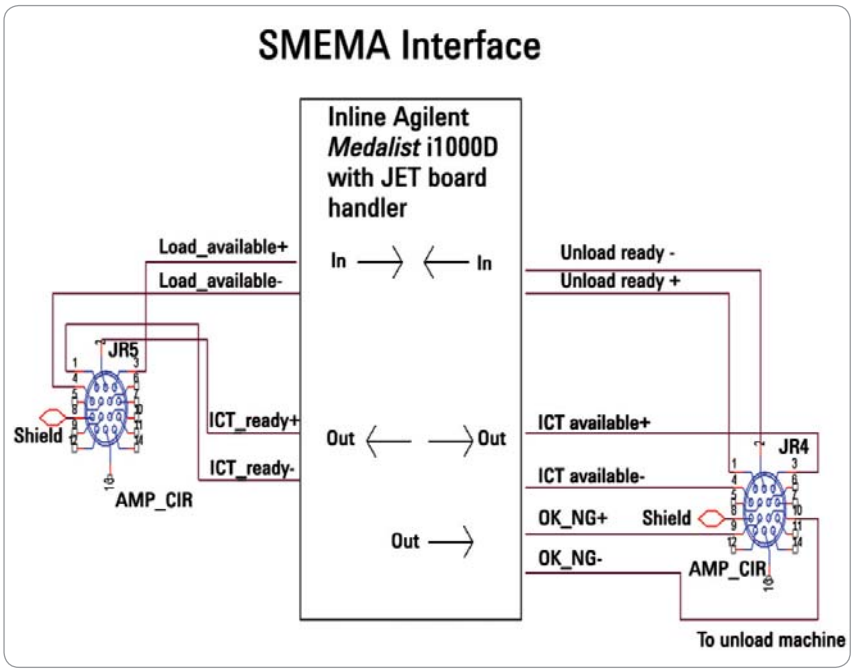
As the pressure to lower labor costs continues, improving quality and increasing throughput, as well as automation in the SMT lines have become hot topics. The i1000D can now be deployed with board handlers to provide electronics manufacturers with even greater ease of use and flexibility in their automated in-circuit test strategy. Coupled with low-cost fixturing requirements and superior signal quality, these result in significant improvements in throughput, coverage and cost savings for electronics manufacturers.

Board Handler Integration

Agilent has partnered with JET Technology to integrate an in-line board handler to the i1000D ICT system with a unified software and hardware platform. The handler hardware and its control signals are fully controllable from the i1000D software graphical user interface. The hardware is SMEMA compatible with additional pass/fail signals communicable to downstream conveyors to separate 'passed' and 'failed' boards for follow up actions.

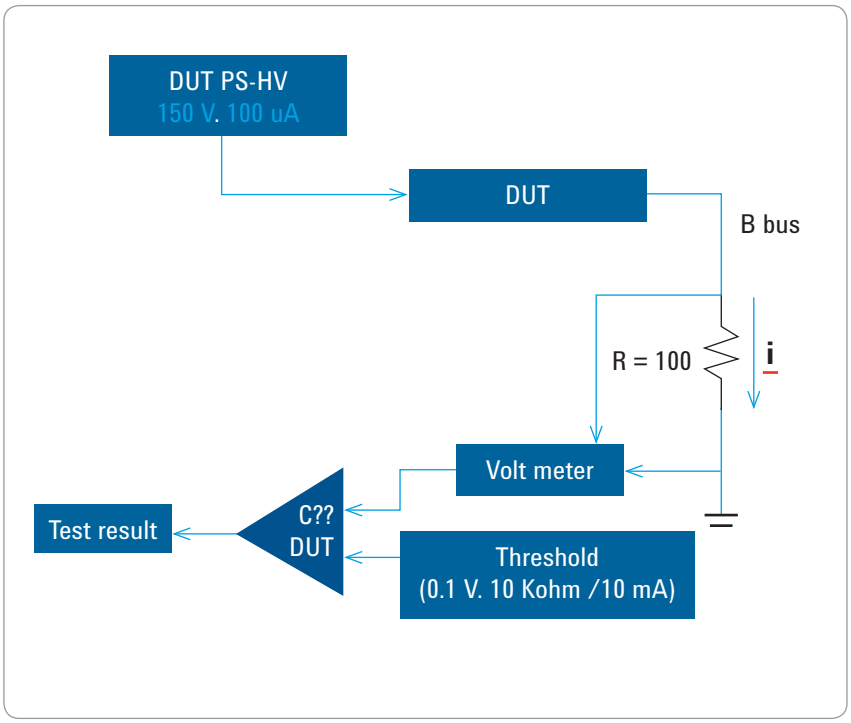
Ensuring Board Safety

A specially designed control path for board alignment verification, together with a protective mechanism, prevent the press-down fixture from engaging when the board is not accurately placed on the fixture. High clearance space on both the upper and lower sides provide greater flexibility by allowing boards with very long connector pins, such as fuse contact fins found in automotive applications, to flow through without obstruction along the SMT conveyor. Deploying the i1000D with a board handler is easy, with its simple and robust design enabling excellent reliability, ease of maintenance, and of course, automation.



High-Voltage and High-Current Tests

In addition to the board handler, the i1000D offers additional application capabilities to meet customer needs. A new plug-in card supplies up to 150 VDC currents, with a source of up to 100 uA that can be used to verify the locations requiring 1.5 MΩ or higher. The high current card is also designed to supply up to 1 A current at 1 V, together with high-current switching circuits which are used to verify the performance of the circuit in high-current scenarios.

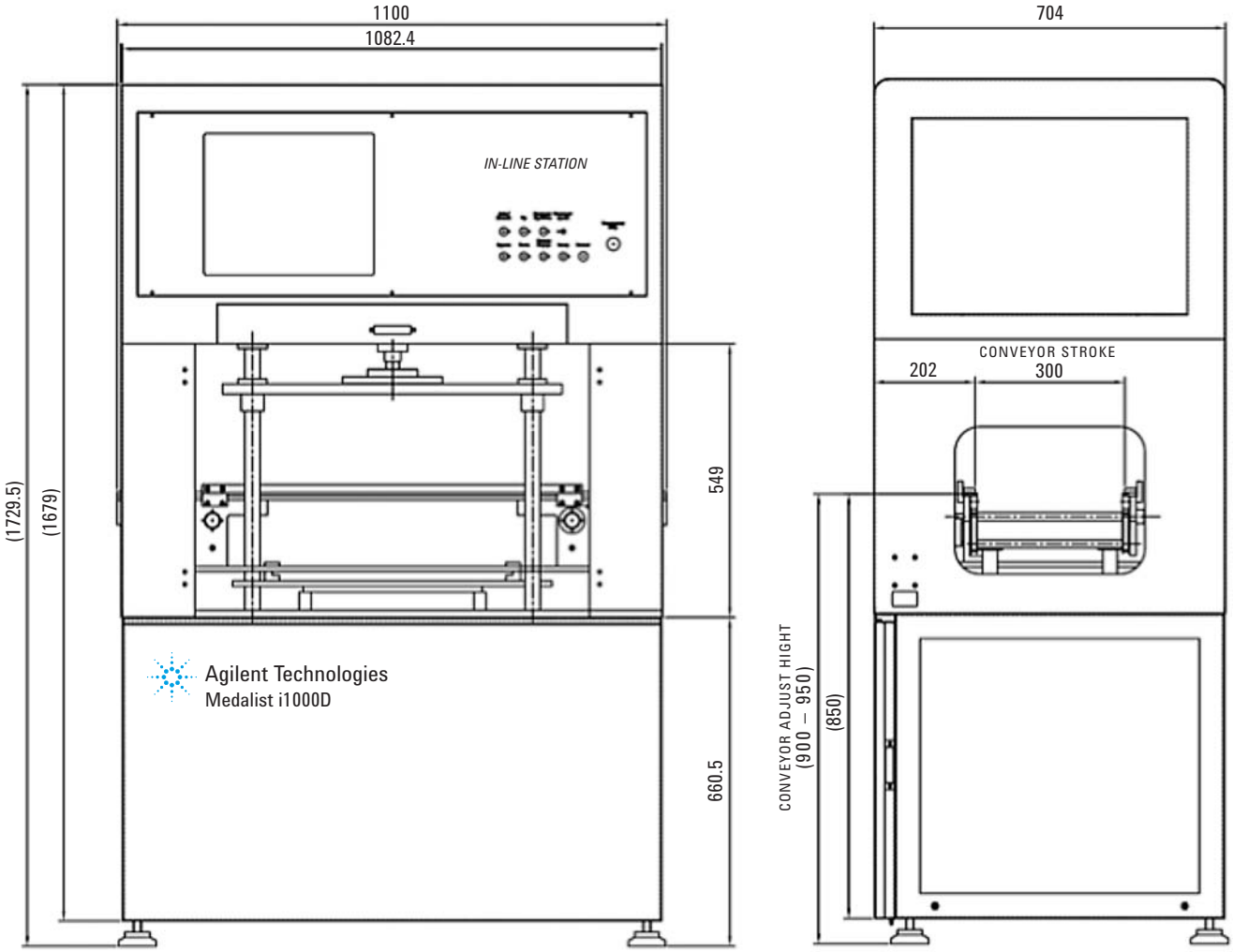


JET Handler Specifications

Device Under Test Specifications	
Maximum PCB size	430 mm x 300 mm
Minimum PCB size	50 mm x 80 mm
PCB guide hole diameter	2 - 4 mm
PCB guide hole location	Minimum 10 mm from center
Bottom side clearance height	40 mm
Top side clearance height	100 mm
PCB thickness	0.5 - 4.0 mm
PCB shape	Square
Deviation	1 mm (maximum)
PCB weight	1.5 kg (maximum)
PCB margin for conveyor	3 mm
PCB alignment	Fixed by 2-4 guide pins
Maximum test points	2,112

Mechanical Specifications	
Conveying direction	Left to right
Conveyor belt width	3.0 mm
Height of conveyer	920 mm (± 20 mm)
Power	200 V - 240 V AC
Power frequency	50 Hz / 60 Hz
Air pressure	6 kg/cm2
Working temperature	5 - 45 degree C
Working humidity	20 - 80%
Total load/Unload time	4 seconds
Board markers	Up to 6
Fixture lock mechanism	Automatic engagement

Handler Dimensions



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