

TestStation LH™ In-Circuit Test System

Quality In-Circuit Test at an Affordable Price

- *High fault coverage*
- *Safe low voltage test*
- *Fast test throughput*
- *Exceptional diagnostic accuracy*
- *Proven test reliability*
- *Scalable test capabilities*
- *Low cost of ownership*
- *High pin count*
- *Small footprint*



The TestStation LH features SafeTest protection technology for accurate, reliable, and safe testing of today's new low-voltage technologies

The TestStation LH™ in-circuit test system is a lower-cost, small footprint, feature scalable, version of Teradyne's popular, award winning TestStation 12X product family. The TestStation LH system features the voltage accuracy and backdrive current measurement embedded in Teradyne's SafeTest™ protection technology for accurate, reliable, and safe powered-up testing of new low-voltage technologies.

The TestStation LH system is a cost-effective in-circuit test solution for high-volume manufacturers of electronic products. The TestStation LH system has been designed to preserve the investments many manufacturers have made in 228X and TestStation in-circuit testers by allowing direct transfer of test programs and small test fixtures (those that use less than 16 pin board slots) with no extra costs or program development required. Other cost savings can be realized in the ease of transfer of fixtures and programs developed for the LH system to Teradyne's larger 7680 pin TestStation LX platform.

The TestStation LH system consolidates or eliminates many of the board types that were required on previous versions of 228X and TestStation 12X models. The resulting benefits are lower system power requirements, increased system reliability, a 52% smaller footprint, and

a price reduction of between 20 and 40 percent. It can be configured with multiplexed or non-multiplexed pin cards and used in both low and high pin count applications up to 4096 test pins. TestStation LH hardware and software features are scalable so manufacturers can purchase what they need today and easily add additional capabilities later.

Unpowered test capabilities for the TestStation LH system include shorts, vectorless opens, and analog value testing. Powered-up test capabilities include digital device vector testing, reduced access boundary scan testing, high speed FLASH and ISP device programming, frequency and time event measurements, synchronized mixed signal device testing, and functional cluster testing. These tests can be automatically generated using Teradyne's automatic test generation software or manually created using a simple, but powerful test programming language.

The strength of the TestStation LH in-circuit tester lies in its ability to perform accurate, reliable, and safe powered-up testing of technologies other in-circuit testers cannot. Patented SafeTest protection technology and advanced test quality software features combine to make the TestStation LH system the industry's most capable in-circuit test solution.

Accuracy – The UltraPin Driver/Sensor is the most accurate in-circuit test pin ever developed. The custom, closed loop, low impedance driver design can accurately deliver programmed voltages to low voltage components even under the worst backdriving and faulty board conditions. The 45mV sensor accuracy can easily distinguish between logic high and low thresholds, even on today's 0.8V low voltage logic components.

Reliability – Unique circuitry on the UltraPin card can measure real-time backdrive currents to report components that have not been properly isolated. It can also identify potentially unreliable tests that require excessive backdrive currents. Logic levels, backdrive current, and backdrive duration thresholds are all programmable per pin to ensure that potentially harmful voltage and currents are not applied to the board (even on defective boards).

Safety – The TestStation's multi-level digital isolation software automatically isolates device outputs on any nets that are being driven. This minimizes backdrive conditions and prevents potentially harmful voltage spikes that can occur when backdriven outputs suddenly change Logic State. The specialized digital controller quickly executes test vectors to minimize the duration of backdrive currents and reduce the opportunity for voltage spikes that could occur from on-board activities.

The TestStation LH in-circuit test system is supported worldwide by Teradyne's global support and service locations and by qualified fixture and programming services companies who are part of Teradyne's Support Network (TSN). For more information on the TestStation LH system, Teradyne's global support locations, or the Teradyne Support Network, please visit www.teradyne.com/cbti.

General System Features

- PC based programming and test using Windows® XP or Windows NT® operating systems
- Choice of multiplexed or non-multiplexed pin board options
 - TS121 LH (All real pins - max pincount 2048)
 - TS124 LH (one-to-four multiplexing ratio - max pincount 2048)
 - TS128 LH (one-to-eight multiplexing ratio - max pincount 2048)
 - TS128L LH (one-to-eight multiplexing ratio - max pincount 4096)
 - TS124L LH (one-to-four multiplexing ratio - max pincount 4096)
- High Performance analog instrumentation and 8 channel measurement matrix
 - Fast shorts and opens impedance measurements
 - Precision resistor, inductor, capacitor, diode, transistor, FET, OPAMP, SCR, and Zener device testing
 - Comprehensive vectorless test techniques for detecting open pins on connectors and components
 - Frequency and timing event measurements
 - Fully synchronized analog and digital subsystems for testing of mixed-signal devices such as ADC, DAC and CODECs
- High-Performance Digital Vector Testing:
 - Independent clock, sync, and trigger pins
 - Specialized digital controller able to emulate complex device timing sequences
 - Independent dual-level Driver and Sensor thresholds
 - Driver/sensor timing and voltage thresholds programmable per pin
 - Per pin programmable slew rates
- SafeTest Protection Technologies:
 - Low impedance pin driver enables testing of low voltage devices under backdrive conditions
 - 45mV sensor accuracy
 - Real-time backdrive current measurement reports
 - Programmable backdrive current and duration thresholds
 - Automatic driver verification
 - Fast test vector execution
 - Multi-Level Digital Isolation (MLDI) software
- Comprehensive and Fast Automatic Test Generation Software
 - Fast and simple CAD preparation using Teradyne's D2B Alchemist™ software
 - Selectable program preparation environments (228X or Navigate)
 - Analog, Digital, Boundary Scan, and Hybrid test generators and device model libraries
 - BasicSCAN model generator for devices with Boundary Scan testability circuitry
 - Tree2DTS model generator for devices with XOR and NAND tree testability circuitry
 - Panel Test development software
 - Automatic multi-level digital isolation and analog guarding
 - Scan pathfinder reduced access boundary scan test solution
 - Onboard programming software for performing FLASH and ISP PLD programming
 - Powerful test program language for easy creation of custom tests
 - Optional Chinese Operator User Interface
- Automated Test Quality Measurement and Debug Software:
 - Analyze software reports fault coverage and test reliability information
 - AutoDebug software attempts to debug failing or marginal tests
 - AutoAdjust software shifts or widens test limits to improve test reliability
 - AutoOptimize software optimizes instrument and program settings for maximum test throughput
 - Powerful data collection and data display software
- Easy to integrate with manufacturing automation equipment
- Compact footprint (43.5 x 35 inches)
- Program and fixture compatibility with most 228X and TestStation models



Because Technology Never Stops

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