TestStation LX™ In-Circuit Test System

Highest Quality In-Circuit Test

- *Configurable from 256 to 7680 test pins*
- *Capable of testing large, complex, and heavily integrated PCBs*
- *Safe, accurate, and reliable electrical test with SafeTest™ Protection Technologies*
- *Powerful CAD preparation and automatic program development software*
- *Comprehensive fault detection using advanced digital and analog subsystems*
- *Exceptional diagnostic accuracy*
- *Designed for fast test throughput*

Teradyne's TestStation LX provides accurate, reliable and safe electrical test

The TestStation LX system is a cost-effective in-circuit test solution providing high-volume electronics manufacturers with reliable, high-quality test for the latest PCB technologies. Configurable from 256 to 7680 test pins, it is the highest-capacity in-circuit test solution on the market. Featuring SafeTest protection technologies and a turnkey test programming environment, the TestStation LX system allows direct transfer of test programs and fixtures from all 228X and TestStation in-circuit testers without extra costs or further program development. Additionally, TestStation LH and standard size test systems (3840 pin receiver) fixtures and programs are easily transferred to the TestStation LX platform, saving time and money.

Comprehensive Fault Detection

Unpowered test capabilities for the TestStation LX 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. Tests can be generated automatically using Teradyne's D2B CAD preparation software or manually generated using a simple, but powerful test programming language. Teradyne's advanced test quality software analyzes programs to show test fault coverage, and identify potentially unreliable tests that may require additional debug.

Accurate, Reliable, and Safe Test

SafeTest protection technologies featuring patented UltraPin™ driver/sensor technology assure voltage accuracy and backdrive current measurement to provide accurate, reliable, and safe powered-up testing of today's sensitive low-voltage technologies. Per pin programmable logic levels, backdrive current, and backdrive duration thresholds ensure harmful voltage and currents are not applied to boards during device testing, even on defective boards. Multi-level digital isolation software automatically isolates device outputs on nets being driven, minimizing backdrive conditions and preventing harmful voltage spikes from occurring when backdriven outputs suddenly change logic state. A specialized digital controller minimizes the duration of backdrive currents and reduces the opportunity for voltage spikes occurring from on-board activities.

Exceptional Diagnostic Accuracy and Test Throughput

Unrivalled diagnostic accuracy is achieved because the closed-loop, low-impedance driver remains accurate even under fault conditions. Additionally, unique programmable backdrive measurement and control capabilities detect faulty enable pins and marginal output transistors not detected on other in-circuit testers. The patented diagnostic algorithms SoftProbe™, BusBust™, and Adaptive Patterns are designed to minimize unnecessary board repairs and eliminate false failure reports.

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Specifications

Base System	– Synchronized Analog and Digital Subsystems – Standard (3840 pin) or Large (7680 pin) receiver – All pins have parallel drive and sense capability – Pentium-based PC system – Color LCD monitor on adjustable height platform – Premium software support	– Ethernet Networking Interface (10BASE-T/Thinware) – Hardware Warranty – Automatic Vacuum Control for single and dual well fixtures – System Footprint 66" x 44.5" – Keyboard with integratede mouse
Analog Hardware	– Measurement Matrix: 8 lines by n pins – 2 Sources, configurable as current or voltage – DC Voltage Source: programmable, 16-bit, 0 to ±18 V over 4 ranges, to ±500 mA, programmable current limiting – DC Current Source: programmable, 16-bit, 0 to ±500 mA over 8 ranges, to ±18 V, programmable voltage limiting – DC Voltmeter: 0 to ±200 V over 9 ranges – DC Ammeter: 0 to ±160 mA over 7 ranges – Arbitrary Waveform Generator – Reactance Module • Programmable frequency from 15Hz to 100 kHz • Programmable AC level to 7 Vrms, 12-bit • Programmable DC offset, 16-bit	– True RMS-DC Detection – Differential Detector/DVM/Digitizer – Coherent Transfer Function Measurement – Component Measurement Capability • Resistive (R) Range: 0.1 to 30 Mohm • Capacitive (C) Range: 1 pF to 10,000 µF • Inductive (L) Range: 10 µH to 1,000 H – External Instrument Matrix: 9 BNCs to 8 line to internal instruments or n pins – Traceable Calibration Daughterboard – High Voltage Source configurable as current or voltage, programmable voltage limit, ±120V, ±50mA – IEEE-488 Interface Controller
Digital Hardware	Common Driver Characteristics – Range: 26 programmable drive levels from + 5.5 V to – 2.5 V – Automatic drive verification at each pin: Four voltages selectable for each pin – Output Current (with automatic compensation circuitry)>600 mA; – Programmable Slew Rates 50 – 300 V/µS – Typical Output impedance: <2.0 ohm – Software Programmable Pull-up/Pull-down loads – Driver Memory: 64K behind each pin	Common Sensor Characteristics – 26 programmable dual sense thresholds from + 5.5 V to – 2.5 V. Sense thresholds independent of programmed drive level – Input impedance = 100 Kohm – Bit by bit compare and CRC capture modes – Sensor Memory: 64K behind each pin Clock Generation/Synchronization Characteristics – Clock Generation frequency programmable up to 20 MHz – Clock Synchronization frequency programmable up to 20 MHz
Hardware Options	– Test Points expandable to 7,680 – Dedicated Accessory Slot: • Deep Serial Memory Instrument • Analog Functional Test Module • Vehicle Control Interface • System Frequency Test Module • Custom Function Board • Multi Protocol Instrument – Flexible Power Supply Package - choose up to 14 power supplies from the following: 0-60 V @ 2.5 A, 0-20 V @ 8.0 A, 0-7 V @ 15 A	– Fixed Power Supplies: +5 V @ 6 A, ±15 V @ 1 A or +5 V @ 6 A,±12 V @ 1.3 A – Ethernet Networking Interface (Thickwire/AUI) – Automation Ready Option – Power Tilt – Choice of multiplexed or non-multiplexed pin board options • TS121 (Non-Multiplexed - 3840 pins max, 3840 real pins) • TS124 (one-to-four multiplexing ratio - 3840 pins max, 960 real pins) • TS128 (one-to-eight multiplexing ratio - 3840 pins max, 480 real pins) • TS LX 128L (one-to-eight multiplexing ratio - 7680 pins max, 960 real pins) • TS LX 124L (one-to-four multiplexing ratio - 7680 pins max, 1920 real pins)
System Software	– Windows XP Workstation – Test/Debug System Software License • Advanced AutoDebug • Program Xplorer Graphical Real-Time Debug Station • Automatic Fault Grading • Test Execution Software • Panel-Test Software • Memory Bank Test Software • Diagnostic Software tools • Guided Probe • SoftProbe for automatic diagnosis of open input and output pins on digital ICs • BusBust isolates and diagnoses failures of ICs driving a common bus	• Real-Time Data Collection • Flash ISP • Throughput Optimizer – SafeTest 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 guarantees pin drivers reach programmed thresholds • Fast test vector execution • Multi-Level Digital Isolation (MLDI) software
Software Options	– Program Preparation License • Navigate Program Prep Environment • D2B Alchemist CAD preparation software • Analog, Digital, Boundary Scan and Mixed-Signal Device Libraries • Hybrid Test Generator for mixed-signal applications • Panel-Test Development Software • Flash ISP Development Software • Xpress Model for automatic device models of non-standard components • Circuit Analyzer-Based Test Generator – Scan Pathfinder boundary scan test generation, execution, and diagnostics for boards with a mix of boundary scan and conventional devices	– BasicSCAN model generator for boundary scan devices – Graphical Repair Network – Junction Xpress vectorless test technique for detecting open device pins and marginal solder connections – Opens Xpress Vectorless Test Technique for detecting: • Open device pins • Open connector pins • Polarized capacitor orientation • Correct device orientation – Powerful test program language for easy creation of custom tests – Optional Chinese Operator User Interface

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Because Technology Never Stops

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