

TestStation TSR™ Rackmount In-Circuit Test Systems

Automation Solution for High Volume Manufacturers

Key Features:

- Modularized Teradyne ICT hardware components
- Standard integration solutions
- Customizable to match factory automation requirements
- Lower capital equipment, fixture, and operator costs
- Reduced Handling times
- Smaller tester footprint
- Three different Receiver options for maximum flexibility
- High fault coverage
- Scalable performance and test capabilities



Designed for easy integration into high volume automated manufacturing lines.

The TestStation TSR is a collection of specially designed hardware modules (computer, instrument cage, user power supplies, system power supplies, power controller and cables) that can be easily integrated into standard or custom automated handling equipment. High volume manufacturers can use the modularity of the TSR hardware components to design their own high performance Teradyne in-circuit tester solution integrated inside a second-party automated handler solution of their choice. The TSR automated solution eliminates the need for expensive over-the-top handling equipment and reduces the complexity and floor-space demands of tethered tester implementations.

Three Different Receiver Options

For maximum flexibility the TSR has 3 different receiver options. A no-receiver option provides a simple 100mil spacing wire-wrap connector which can be used to create a low cost custom fixture interface; a 19-slot (2048 signal pin) non-vacuum Pogo pin interface allows customers to create a reliable press down (PDU) fixture interface; and a 19-slot (2048 signal pin) vacuum Pogo pin receiver interface allows customers to support standard vacuum-based test fixtures.

With these options, manufacturers or third-party integrators have complete flexibility

to create an automated ICT solution for their Production environment that meets their specific throughput, footprint, fault coverage, and cost requirements. A comprehensive *TestStation Rackmount User Manual and Installation Guide* contains all the detailed specifications of the TSR components, including mechanical dimensions, which are needed by integrators to facilitate the installation of the Teradyne components into the selected automation equipment.

Manufacturing Cost Savings

High volume manufacturers who choose the TSR can achieve economic benefits through reduced operator costs, elimination of board handling time, lowered capital equipment costs, lowered fixture costs, and reduced manufacturing floor space.

Scalable Test Capabilities and Flexible Configurations

The TestStation TSR hardware and software features are scalable so manufacturers can purchase what they need today and easily add

additional capabilities later. It supports multiplexed or pure pin configurations; analog only, full digital, or a mixture of both; and a variety of vectorless test, boundary scan, and functional test options.

Comprehensive Fault Detection

All of the powerful test features that make TestStation the industry's most capable in-circuit test solution are available on the TSR, including SafeTest protection technologies, UltraPin II driver/sensors, and FrameScan FX vectorless test techniques.

Unpowered test capabilities 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.

General System Features

- PC Controller with GPIB and MXI Control cards
- PC based programming and test using Windows® operating systems
- Choice of three different Receiver options
 - Wire-wrap connector
 - 19 slot Pogo pin interface with no vacuum
 - 19 slot Pogo pin interface with vacuum
- Choice of multiplexed or non-multiplexed pin board options
 - Ultra II 121 pin boards (all real pins - max pincount 2048 pins)
 - Ultra II 124 (one-to-four multiplexing ratio - max pincount 2048 pins)
 - Analog Only (max analog pincount 2048 pins)
 - System can be configured with a mixture of 121 and Analog only pin boards
- High Performance ICA 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
 - 15mV drive and sense 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
- Alliance User Power Supply Control Rack
- Comprehensive and Fast Automatic Test Generation Software
 - Fast and simple CAD preparation using Teradyne's D2B Alchemist™ software
 - Powerful program development environment
 - 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
 - Powered Framescan for detecting opens on pins that do not have physical test access
 - Onboard programming software for performing FLASH and ISP PLD programming
 - Powerful test program language for easy creation of custom tests
 - Multi-language 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



Contact your Teradyne sales representative for more information or visit www.teradyne.com/atd.

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