

Fixtureless Trim and Test Systems



RapiTrimä Series

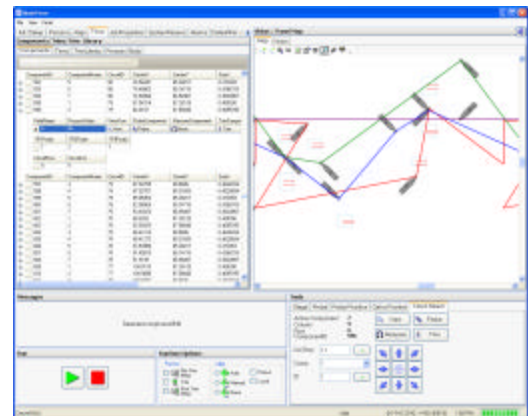
- Integrated laser trimming tool for high volume production
- Unique, proprietary fixtureless technology for rapid, accurate trim and test operations
- Optional full Kelvin probe tips
- Independent of circuit size or shape
- Independent of component size, shape or orientation
- Compatible with both thick film and thin film materials
- Fast job changeover for prototype work

Designed for Next-Generation EP and Hybrid Trim and Test Requirements:

- Lower cost of operation than fixture-based trimmers – no expensive probe cards to buy
- Enhanced layout capability – no limit on circuit size, orientation or density
- Operational flexibility – system is fully programmable, no waiting days for probe cards
- High throughput – significantly faster than conventional full-board moving probe testers

Advanced ProSysä Control Software

- Perform file conversion and job generation
- Provides a map of the job features and status on progress of the job
- Custom tool creation and assignment



Fixtureless Trim and Test Systems

RapiTrim™ is a breakthrough new concept in production workstations for embedded passive and hybrid trim and test. Users experience all the benefits of a fixtureless system without the sacrifice of slow trimming speed. Circuit designers are no longer limited by the practical size limit on probe card designs; circuits can be as large as the panel itself. Each of the four probes as well as the galvanometer-located laser beam have access to the whole 50x50mm field, ensuring that any component location, size, orientation and component density can be accommodated. Probe fields are tiled together using the high accuracy XY stages. The small field size allows the use of a smaller, lighter probe positioning mechanism, leading to rapid, accurate probe tip movement.

In addition, the system can function as a stand-alone tester, with the trimming function turned off.

RapiTrim Specifications*

System Hardware

- Fast, high accuracy probe movement over 50x50mm field
- Standard or full Kelvin probe tips
- Isolated components use two probe tips; three probes available for trimming networked resistors
- Maximum panel size: 533mm x 635mm (21"x25")
- Automated probe tip calibration
- Automated laser power calibration with integrated power meter
- Automated vision system for precision alignment, and scaling, offset, trapezoidal and rotation compensation
- Precision linear motor XY stages with linear encoder feedback
- High performance motion and laser controller
- Vacuum platen for panel hold-down
- Configured with high performance galvanometer scanners for high speed trimming
- Galvanometer scanning field: 50 x50 mm (approx. 2" x 2")
- Beam and probe placement accuracy: 15µm (3 sigma) over panel process area
- Ultrastable steel weldment frame with resonance dampening
- Compliant with CE and North American regulations
- CDRH Class 1 enclosure
- Optional automatic panel loader / unloader, available in semi-vertical or horizontal configuration

Utilities

- Electrical: 208VAC, 3φ, 15A, 60Hz, or 400VAC, 3φ, 10A, 50Hz
- Exhaust: ablation debris removal through 3" diameter duct
- Dimensions (HxWxD): 2356 x 1626 x 2192 mm (93"x64"x86")
- Weight: 2813 kg (6233 lbs) net; 3437 kg (7563 lbs) shipping

System Control

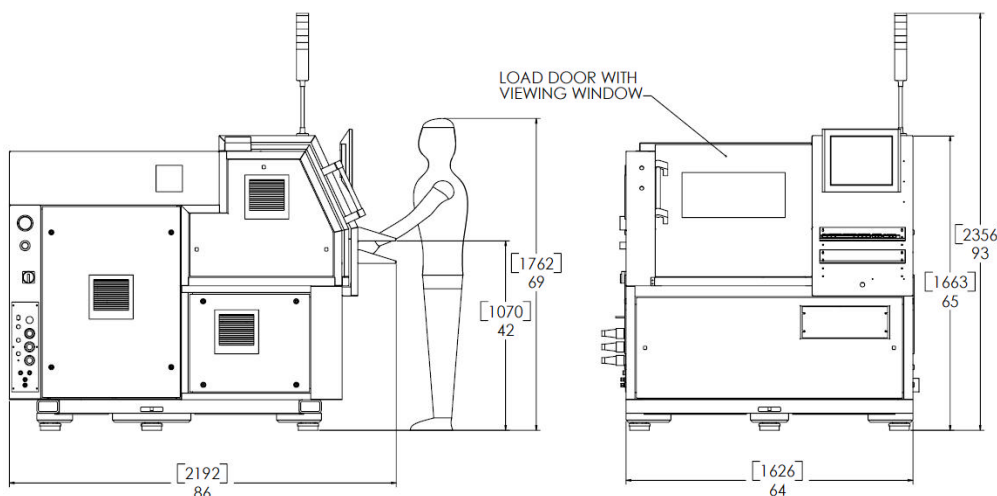
- WindowsXP® based user interface
- User friendly operator screens
- Compatible with industry standard file formats
- Rapid file conversion and path optimization utility
- Full system diagnostics
- Trim parameters are pre-defined in a tool Library, with custom tool generation available
- System monitoring for process integrity
- Saving of multiple job parameter files
- Emergency stop and safety interlock circuits
- Password protection for access to configuration, set-up, and operating screens
- Optional network interface

Process Parameters

- Single-plunge, double-plunge and L-cuts available
- Up to 50 test points per second
- Resistance measured in real time using high speed A/D converter
- All measurement data logged as part of normal operation
- Minimum test pad size: 200µm for single tip, 400 µm for double
- Resistor range: 0.1 Ohm to 100 MOhm
- Typical trimmed resistor distribution <1% (3σ)
- Wide control of laser pulse energy, repetition rate and step size

- Consult PPI for processing trials for your circuits.

*specifications are subject to revision



Shown without autoload/unload option.

Contact the team at Process Photonics for help with your process requirements.

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