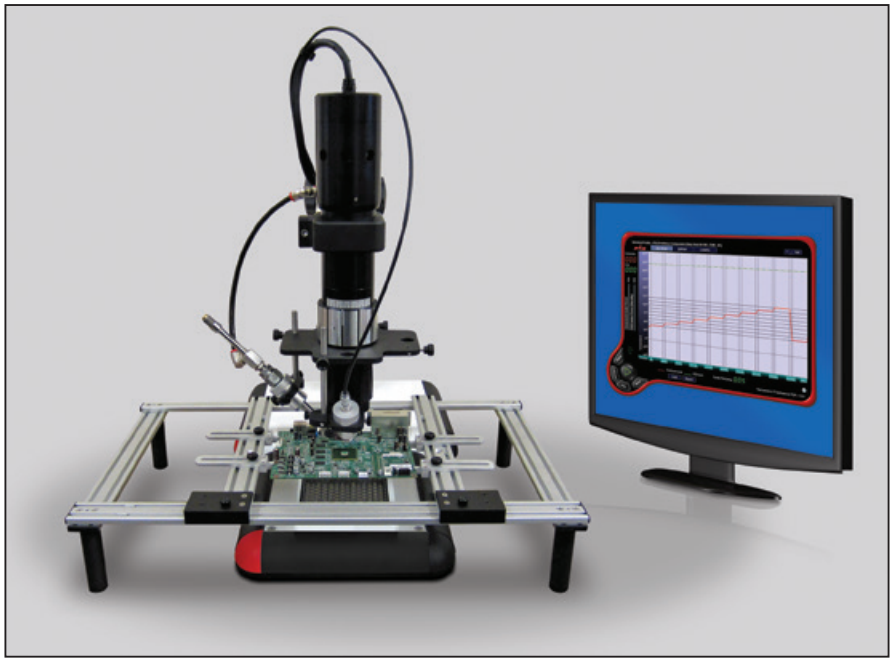
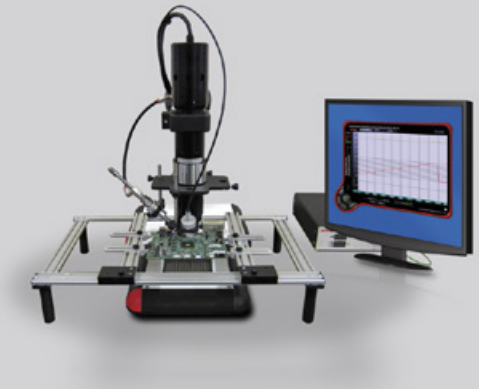
The Next Generation of Rework and Test



Rapid Dual Thermal Defect Detection
Component and Solder-Joint Validation

PDR IR-TS One Micro-Focused HALT/HASS Thermal Test System



Advanced features:

- **Advanced Focused IR component heating**
  150W, Focused IR heating with adjustable image system
- **Quartz IR PCB preheating**
  1200W, two zone (240mm x 240mm heating area)
- **Forced Air Component Cooling**
  Effective and safe directed component cooling
- **Portable PCB Workholder**
  Professional benchtop PCB workholder
- **Component Temperature Sensing**
  Standard non-contact IR temperature sensor
- **PCB Temperature Sensing**
  Standard non-contact IR temperature sensor
- **Advanced Thermal Process Control**
  Software based auto profile thermal control

PDR IR-TS One
HALT/HASS Thermal Test System

Micro-Focused HALT/HASS Thermal Test System

The PDR IR-TS One has been designed to thermally cycle key critical components and assemblies to detect defects. Using PDR's unique Non-Destructive Dual Thermal Stress Screening Process, based on a variation on HALT/HASS principles, the system is able to focus the testing on suspected problem areas to safely screen out early field failures caused by design, environmental, production and structural defects.

PDR's Dual Thermal Step Test Process

The TS One uses PDR's unique dual zone IR heating and gas cooling process that independently heats the PCB and component in a safe thermal cycle and can be used during live system/function HALT/HASS testing.

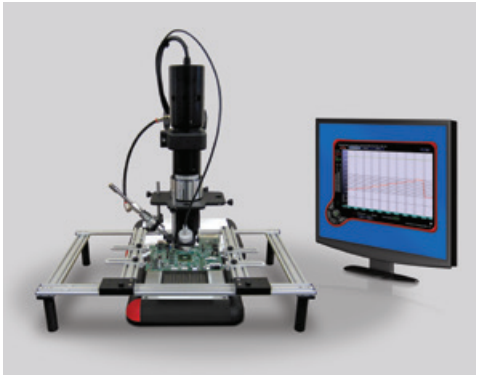
In component testing, the PCB is preheated whilst the Focused IR is aimed at the centre of the component to directly heat up the die, in either cycle or step test modes to check the design integrity. For Solder-joint validation the whole component is heated. All parameters such as target temperatures, ramp-rates, soak times and number of cycles are easily set and precisely controlled using PDR's ThermoActive control software.

PDR's Dual Thermal Cycle Test Process

Applications include testing electronic assemblies, electronic devices, bonded structures of plastics and ceramics in a wide variety of fields including, Medical, Automotive, Avionics, Space and Defence.

PDR's IR-TS Ones work alongside HALT/HASS Test Chambers, with the convenience of a benchtop system, so that you can FOCUS on the problem areas, greatly accelerating the process during design testing.

Gold standard sales and support



PDR was formed in 1985 and our first pioneering IR SMD Rework system was launched in 1987. In the early 2000s, we developed our IR heating technologies to be used in environmental chambers for HALT/HASS testing applications.

From our base in the United Kingdom with three regional technology centers in the USA, France and India, we design and manufacture production and test equipment for the electronics assembly industry. Using only the finest components for optimum precision, our BGA Rework Stations and Thermal Stress Screening Systems are some of the best available worldwide.

Nearly thirty years after our start, PDR is still at the forefront of electronics manufacturing technology working with many of the world's top names in,

- Aerospace, Weapons, Avionics, Automotive, Transport electronics
- Mobile Phone, PDA, Tablet, Laptop, Desktop, Server repair
- Consumer electronics, Set-top, TV, Game Console repair
- Control and systems repair, R&D, assembly and repair rework

To support our customers, we provide a Gold Standard Sales and Technical Support service from our PDR regional offices plus a global network of professional sales/support partners and since 1987 we have successfully supplied over 4500 systems to the world's electronics industry.

There are many different system choices out there but our customers feel comfortable to choose PDR, returning to us time and time again to benefit from our advanced precision thermal engineering.

Details and specifications of advanced features available

- **Advanced Focused IR component heating**
  150W, lens based Focused IR heating with adjustable image system
  PDR lens attachments with IR image from 4 to 70mm diameter

- **PDR Lens Attachments**
  F200 (Ø10 - 28mm spot size) optional
  F700 (Ø25 - 70mm spot size) standard

- **Quartz IR PCB preheating**
  High power, medium wave quartz IR
  Large area IR PCB preheater system
  Standard 1200W, 2 x 600W zones (240mm x 240mm heating area)
  Optional 750W, single zone (120mm x 120mm heating area)

- **Forced Air Component Cooling**
  Highly effective, integral Component cooling with forced air system
  Switched compressed air flow, directed at component

- **Portable Benchtop PCB Workholder**
  650mm, up to 12" x 10" (300mm x 250mm) PCB capacity

- **Component Temperature Sensing - Non-contact, IR Sensor**
  Manually adjustable, K-type non-contact IR sensor, Ø7-10mm spotsize
  Real time monitoring of component temperature throughout process

- **PCB Temperature Sensing - Non-contact IR Sensor**
  Manually adjustable, K-type non-contact IR sensor, Ø7-10mm spotsize
  Real time monitoring of component temperature throughout process

- **Auto Profile Process Control Software**
  PDR ThermoActive software suite
  Digital controller with multi-functional features
  Advanced, Windows 7+ ThermoActive software suite
  Two channel, real time, closed loop component and PCB temperature control
  'Auto-profile' temperature profiling, data logging and reporting
  Multi K-type thermocouple (x4) capacity for temp/time testing

- **Typical Temperature Ranges**
  The systems uses a variation on the HALT/HASS cycle, using the positive temperature Cycles, whilst heating the PCB and component differentially.
  PCB Temperature range = ambient to +180°C
  Component Temperature range = 10°C to 180°C

- **Future Developments in Progress**
  The system can be used as a single unit as pictured, or as part of a Production test cell, robot loaded with pallets, conveyors and buffers. New features will include Vibration generation, refrigeration and cryogenic cooling.

System Requirements

Top heat power	150W IR
Back heater power	750W or 1200W IR
Total Power Input	up to 1400W
Voltage/frequency	110-240 volts 50/60Hz
Floor area	1000mm (w) x 600mm (d)
Weight	45Kg

The above features are mostly optional and also, PDR reserves the right to improve or change specifications without giving notice.

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PDR's products are available worldwide via our international distributors, all offering professional sales and support.

For contact, product and company details please visit www.pdr-rework.com

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