

PDR FORENSICS

CHIP-OFF CHIP-TRANSFER CHIP-REPLACEMENT

Designed and manufactured by PDR for digital forensic laboratories.

DESIGNED AND
MANUFACTURED IN THE UK

PRECISION INFRARED SINCE
1985

OVER 5,000 SYSTEMS
WORLDWIDE

WHY

MEMORY DEVICES OFTEN REMAIN READABLE **AFTER THE ASSEMBLY IS DAMAGED.**

In many devices, the memory remains readable after the surrounding assembly has been damaged or the device has been locked. Before the memory can be read, the memory device must be removed, transferred to a working board, or damaged components replaced. PDR systems provide the controlled infrared heating these procedures require.

01

THERMAL CONTROL

Solder melts within a narrow temperature range, close to the memory die. Focused infrared and independent sensing hold the component and board on separate, controlled profiles.

02

REPEATABLE PROCESS

Thermal profiles are defined in software and can be stored, repeated and recorded, supporting the laboratory's own validation, verification and record-keeping.

03

PERFORMED IN-HOUSE

Hardware preparation is carried out on the laboratory's own bench, so the device remains within its control throughout.

04

DAMAGED ASSEMBLIES

Focused infrared removes components from fire-damaged, water-damaged, corroded or physically broken boards and delivers them intact for reading.

ORIGIN

UK DESIGNED & MADE

HERITAGE

INFRARED SINCE 1985

INSTALL BASE

5,000+ WORLDWIDE

THREE SUPPORTED PROCEDURES

01

CHIP-OFF

Remove eMMC, eMCP, UFS, NAND, CPUs and PMICs. Independent sensing holds the joints at release temperature while the data above them stays protected.

The handoff: the memory is then read in your own validated tools, for example Cellebrite, MSAB XRY, Rusolut VNR, Flash Extractor and Acelab PC-3000. We deliver the component to them intact.

02

CHIP-TRANSFER

Move a component onto a donor board with placement to 10 microns, for exhibits that can only be read live.

03

CHIP-REPLACEMENT

Remove and replace damaged surface-mount components so a dead board can power and image through your normal forensic tools.

1

WE PREPARE THE HARDWARE

Removal, transfer or replacement of the physical electronics, controlled and recorded.

2

YOUR TOOLS EXTRACT THE DATA

The removed component goes to your own validated extraction tools.

3

YOUR EXAMINERS ANALYSE IT

Analysis and reporting stay within your existing workflow.

FOCUSED INFRARED HEATING

Focused infrared delivers controlled heat to the target component without contact and without heating the surrounding assembly. Each step is visible, measured and repeatable.

1 ENERGY WHERE IT IS NEEDED

150W focused, visible infrared heats the target component in a spot adjustable up to Ø70 mm.

2 TWO TEMPERATURES, INDEPENDENT

Non-contact sensors track the component and the board separately, each on its own curve.

3 SOFTWARE-MANAGED PROFILES

ThermoActive profiles every procedure automatically, so it is repeatable and recorded.

4 EVEN CONDITIONING BELOW

A 2800W three-zone quartz infrared preheater conditions the board evenly and protects large or damaged boards.

5 PROCESS MONITORING

A live side-view camera records the procedure for the case file.

6 PLACEMENT TO 10 MICRONS

Split beam prism optics with x50 magnification, for transfer and replacement.

CHIPMATE



The entry point to focused infrared chip-off: manual operation with thermocouple board sensing, the full heating technology at its most accessible.

Focused infrared heating. 150W visible infrared, precise energy where needed.

Independent temperature control. Board and component managed separately.

ThermoActive software. Automatic, repeatable profiling.

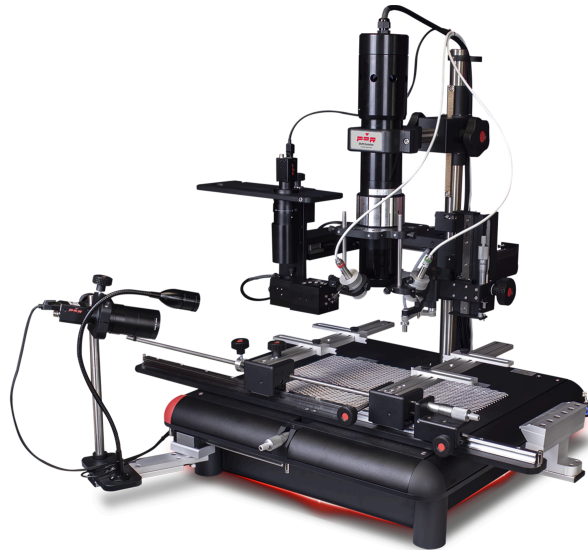
PCB preheater. 2800W three-zone quartz, even conditioning.

PCB workholder. Adjustable support that prevents warping.

SPECIFICATION

MAX PCB SIZE	300 x 450 mm
MAX COMPONENT	55 x 55 mm
MIN COMPONENT	01005 package
COMPONENT REMOVAL	Hand-held vacuum tool
TOP HEATER	150W focused IR, Ø70 mm spot
PCB PREHEATER	2800W medium-wave, 3 zones
COMPONENT SENSING	Non-contact IR sensor
PCB SENSING	K-type thermocouple

CHIPMATE PRO



The balance of capability for most forensic casework: fully non-contact sensing, split beam placement to 10 microns, and a live side-view camera with image capture.

Focused infrared heating. Precise energy that protects the surrounding evidence.

Independent temperature control. Component and board sensed separately.

ThermoActive software. Automatic, repeatable profiling.

Optical alignment. Split beam prism placement and transfer.

Side-view monitoring. Live camera with image capture.

Assisted cooling and flux. Precise paste application, stabilised joints.

SPECIFICATION

MAX PCB SIZE	300 x 450 mm
MAX COMPONENT	55 x 55 mm
MIN COMPONENT	01005 package
COMPONENT PLACEMENT	Split beam prism, x50
PLACEMENT ACCURACY	Up to 10 microns
TOP HEATER	150W focused IR, Ø70 mm spot
PCB PREHEATER	2800W medium-wave, 3 zones
SENSING	Non-contact IR, both sides

CHIPMATE AUTO



Automatic component removal and placement takes operator variability out of the most delicate step, for higher volumes or where the same procedure must run identically every time.

Automatic removal and placement. The delicate step, taken out of the operator's hands.

Focused infrared heating. Precise energy where needed.

ThermoActive software. An identical procedure every time.

Optical alignment. Accurate placement for transfer and replacement.

Side-view monitoring. Live camera with image capture.

SPECIFICATION

MAX PCB SIZE	300 x 450 mm
MAX COMPONENT	55 x 55 mm
MIN COMPONENT	1 x 1 mm
COMPONENT REMOVAL	Automatic removal + placement
COMPONENT PLACEMENT	Split beam prism, x50
PLACEMENT ACCURACY	Up to 10 microns
TOP HEATER	150W focused IR, Ø70 mm spot
SENSING	Non-contact IR, both sides

FOUR DECADES OF PRECISION INFRARED

Founded in 1985, PDR built its first infrared system in 1987 and has supplied over 5,000 worldwide. PDR Forensics is the dedicated forensic division, designed, built and supported from our UK headquarters.

FOUNDED

1985

FIRST IR SYSTEM

1987

SYSTEMS SUPPLIED

5,000+

1

SEE IT ON YOUR CASEWORK

A demonstration on the devices and boards you actually work with.

2

MATCH IT TO THE LABORATORY

We recommend honestly, including when the smaller system is the right answer.

3

SUPPORTED FROM THE FACTORY

Training, process support and service direct from the team that builds the systems.

ARRANGE A DEMONSTRATION

UK GLOBAL HEADQUARTERS

Design & Manufacturing Centre
Unit 3, Stanley Centre, Kelvin Way
Crawley, West Sussex, RH10 9SE
United Kingdom

ENQUIRIES

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