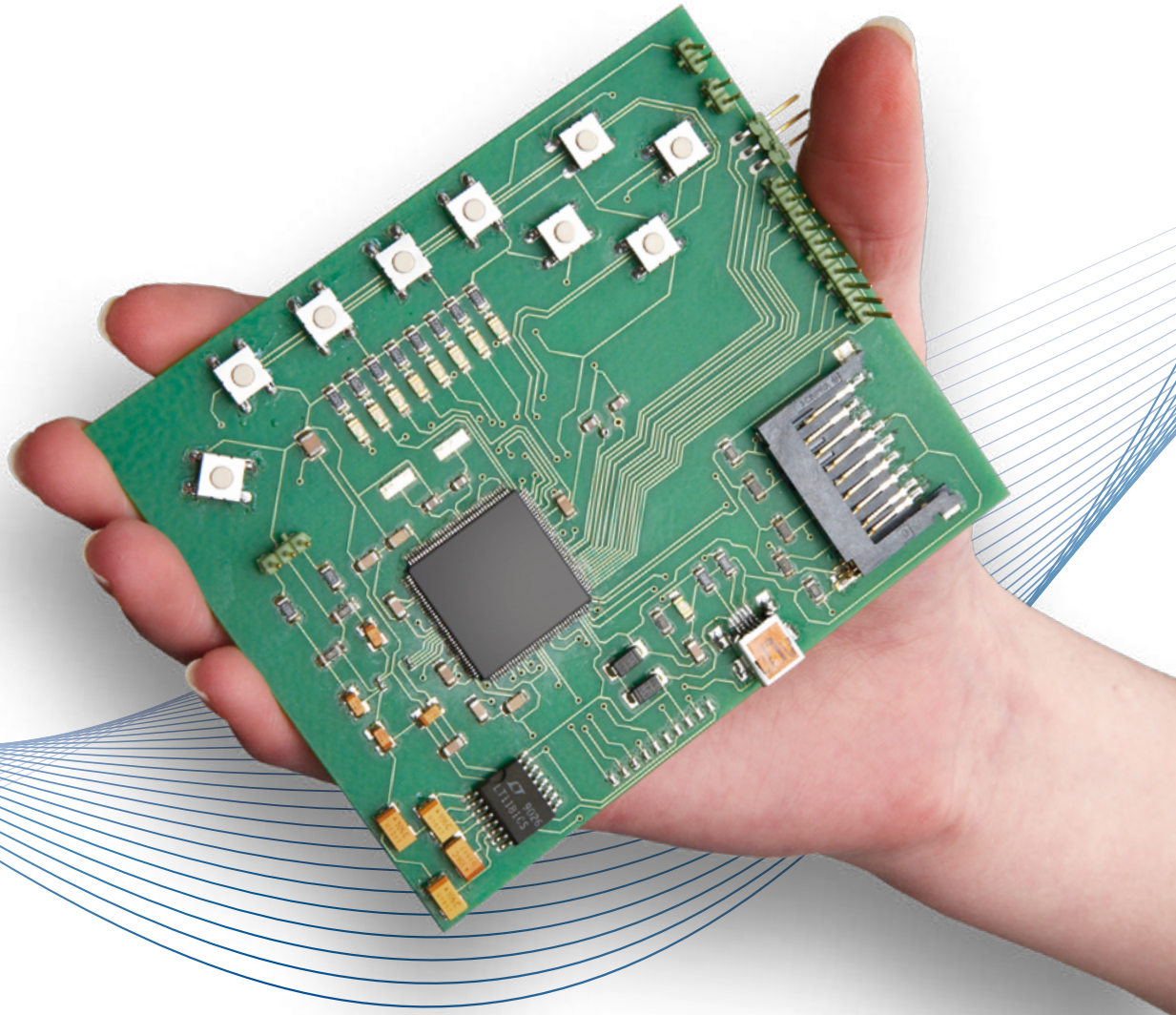


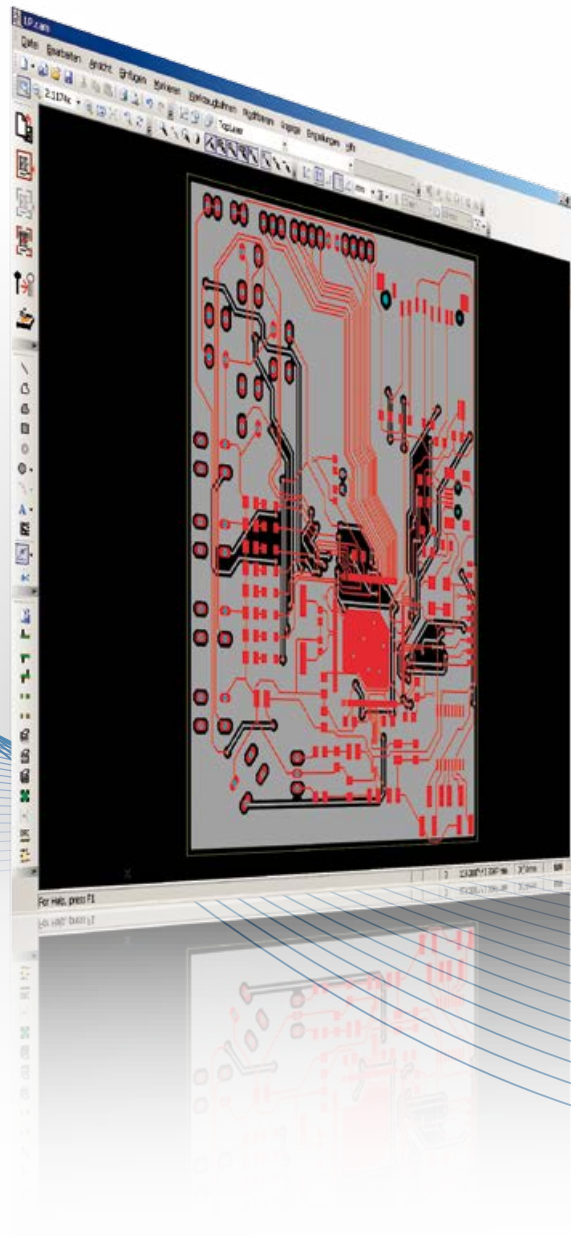
PCB Production Training

Practice, Set, Go!



**Ideal for Universities, Technical Colleges,
and Vocational Schools!**

LPKF
Laser & Electronics



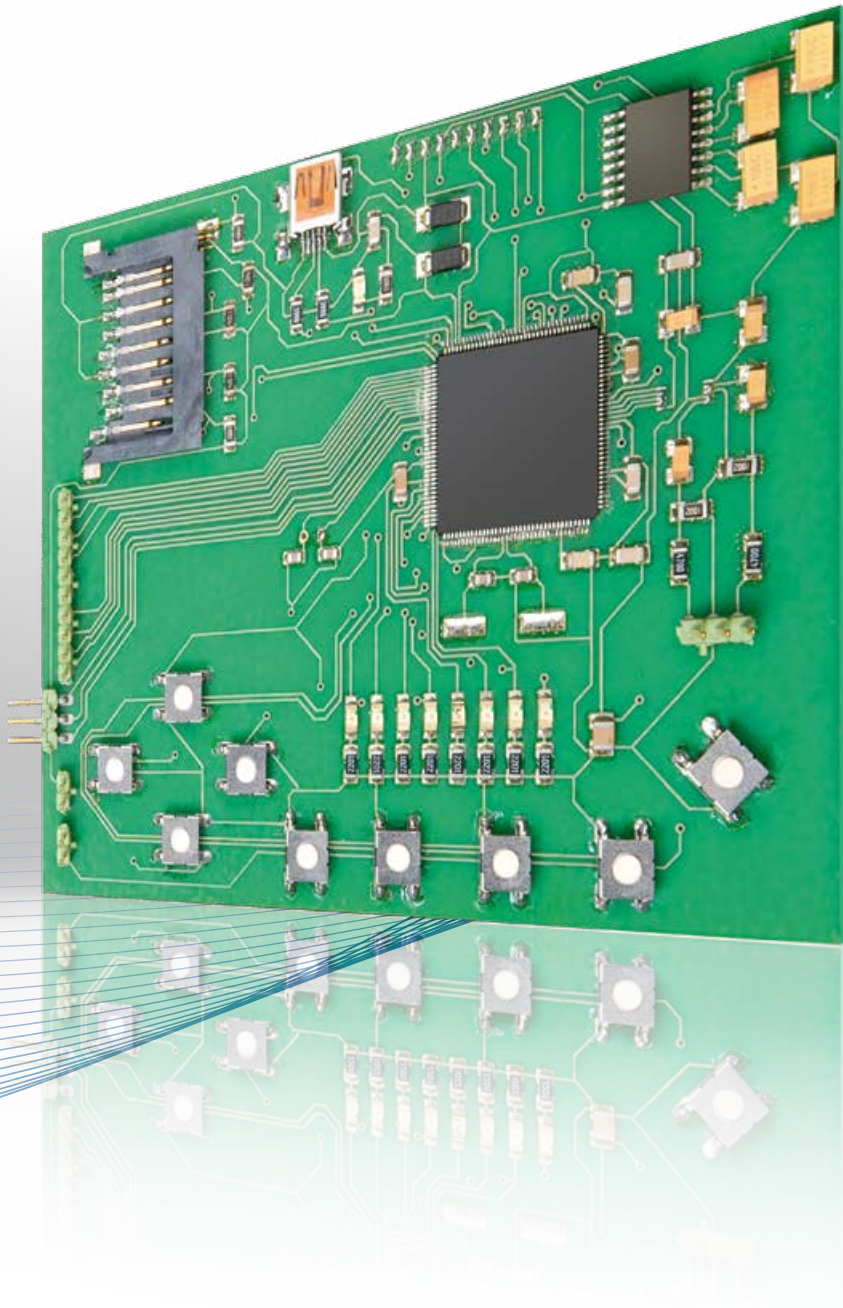
Bringing Ideas to Life

First-hand PCB Production in Training!

A perfect tool for instructors and students, the LPKF Rapid PCB Prototyping series produces near-series circuit boards in next to no time. Go from idea to finished assembly in just one day.

- Easy to use: simple operation, quick results
- Chemical-free: suitable for any environment
- Consistent: high rate of learning success, ideal job preparation
- Universal: produces any type of circuit board





Producing Fully Functional PCBs

LPKF Rapid PCB Prototyping Systems Offer Hands-on Experience

- Handles each step of the prototyping process, from editing data to finished PCB with SMD
- Accommodates most designs, from simple to multilayer, highly complex PCBs
- Requires minimal floor space
- An industry-leading product
- Chemical-free
- Easy to use

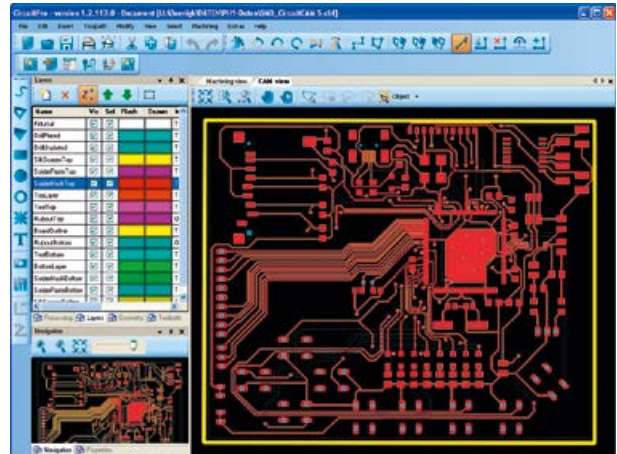
Enriched Student Training

- Boosts motivation
- Offers visual and hands-on training
- Serves as valuable teaching aid with a high level of occupational relevance
- Encourages conscientious, foresighted work habits
- Shows results immediately
- Fits as an integral part of the curriculum

One-Stop Rapid PCB Prototyping

Editing Data

The LPKF software handles any common layout data. Data is transferred in just a few simple steps and converted to milling and drilling data. A wide range of editing options supports users with various customizing tools. Smart control software ensures optimal machining of PCB structures.



The powerful LPKF CircuitPro software lets you convert layout data into production data with ease. Its intuitive user interface features clear icons and wizards to minimize training time.

Untreated base material,
305 mm x 229 mm (12" x 9")



Milling/Drilling

LPKF circuit board plotters selectively remove the copper layers on single- and double-sided circuit boards, thereby creating insulating channels that precisely delineate the required conductive traces and pads. The circuit board plotters also drill all the necessary holes in the boards. The systems are extremely precise, robust, and easy to operate.

Various versions of the LPKF ProtoMat are available:

LPKF ProtoMat E34/E44

Entry-level systems for rapid PCB prototyping.

- For precise circuit board milling and drilling
- Spindle speed of 30 000 RPM (E34) or 40 000 RPM (E44)
- With camera for software-assisted milling depth adjustment (E44)



LPKF ProtoMat E44

LPKF ProtoMat S63/S103

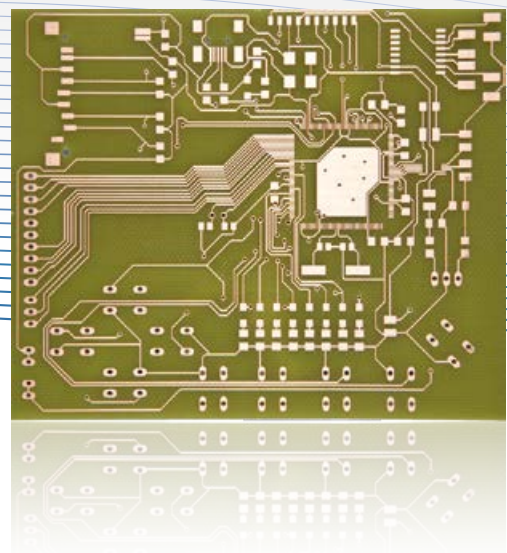
Latest-generation circuit board plotters for producing fine structures. Kit for upgrading from S63 to S103 available:

- Milled layout structure with drilled holes
- High spindle speed of 60 000 – 100 000 RPM
- High resolution (0.5 μm)
- Acoustic enclosure
- Standard features (depending on model): automatic tool change, vacuum table, fiducial detection, and dispenser

LPKF ProtoMat S103



Milled layout structure with drillings



Through-Hole Plating

LPKF ProConduct, a special conductive paste, creates electrical connection in PCBs via holes, offering a simple, reliable, chemical-free solution.



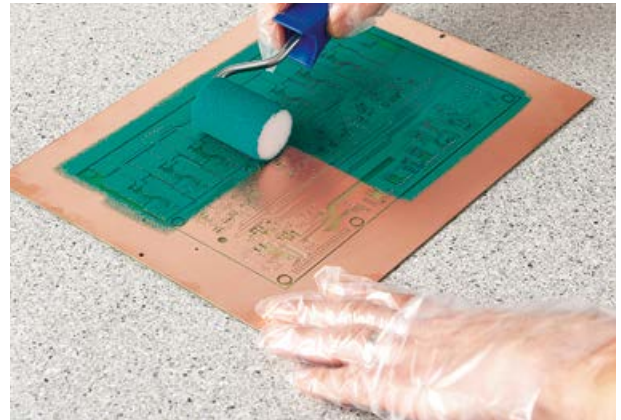
LPKF ProConduct

A proven system for chemical-free PCB through-hole plating.

- No galvanic baths or chemical processes
- Can be used with multilayers up to four layers each
- Suitable for RF materials
- Low contact resistance

Solder Resist Mask/ Assembly Print

LPKF ProMask applies professional solder resist masks to PCBs – the ideal preparation for safe soldering. All materials and tools are offered as a set. The LPKF ProLegend set labels interconnect devices.



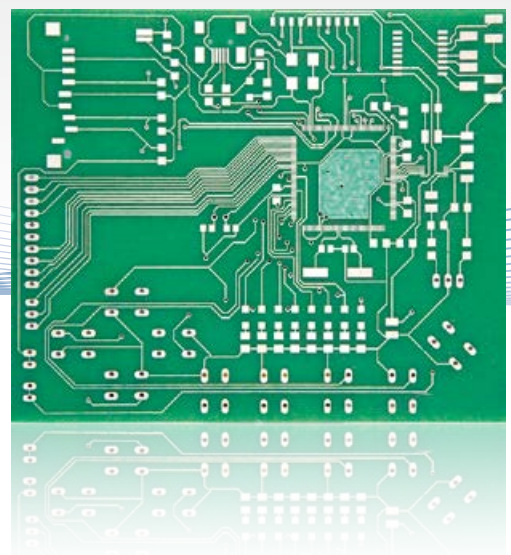
LPKF ProMask and LPKF ProLegend

Easy to apply solder resist and assembly print.

- Perfect surface finish
- Minimal training
- Flexible
- Environmentally friendly



Through-plated PCB with surface finish



Soldering Paste Printing, Assembly and Reflow Soldering

LPKF products are simple and easy to use. From soldering paste printings to SMT component placing and even component soldering, LPKF equipment allows every step of the production process to be performed quickly and accurately with minimal training.



LPKF ProtoPrint S

Manual stencil printer for applying soldering paste.

- High positioning accuracy
- Up to 0.3 mm resolution (fine pitch)
- For use with polymer and stainless steel stencils



LPKF ProtoPlace S

Semi-automatic, ergonomic pick & place system for accurate component assembly.

- Micrometer screw fine-tuning
- Precise assembly of complex components like QFPs, BGAs, etc.



LPKF ProtoFlow S

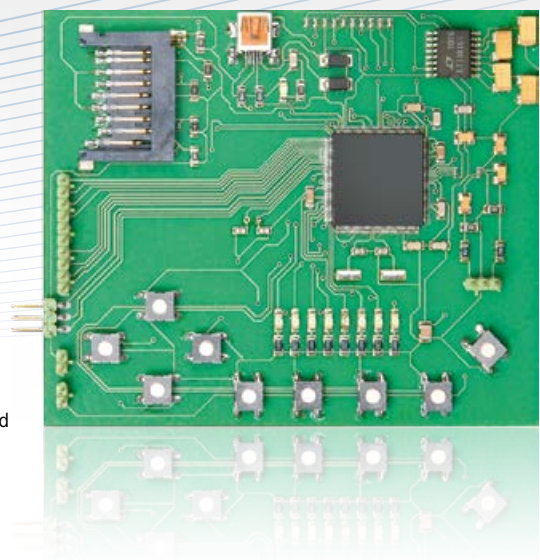
Reflow oven for soldering lead solders and lead-free, RoHS compliant solders.

- Pre-programmed profiles
- Simple menu navigation
- Inert gas option and additional temperature sensors available

> Find an overview of all systems at www.lpkf.com.



Finished PCB: assembled and soldered



Practical Experience has its Advantages

“With LPKF equipment, we are now able to optimally combine theory and experience. Students learn how to correctly prepare a PCB project, guide each individual phase of the production process themselves, and handle machines and processes used in the industry professionally. They learn how to work responsibly and with foresight.

The freedom to learn from mistakes is especially valuable. Instructors don't have to start out checking everything in detail and correct potential errors beforehand. Production steps can be reconstructed quickly, easily, and in detail.

Of great benefit to a future job: Our students can fall back on practical experience when the time comes to apply for job ... a skill which they would normally only be able to gain in the field. A truly competitive advantage.”

Roald Blei, Dipl.-Ing.-Päd., Berufskolleg Olsberg, Germany



> For more information, visit www.lpkf.com

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