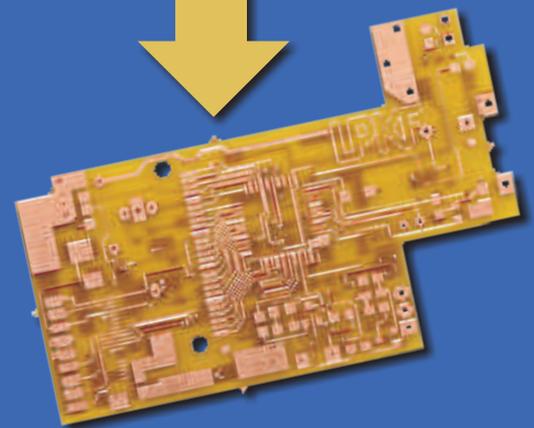


Make your own prototype boards

When YOU want them!



Go from CAD design to
a circuit board in just a
few minutes with LPKF
in-house circuit board
prototyping equipment.



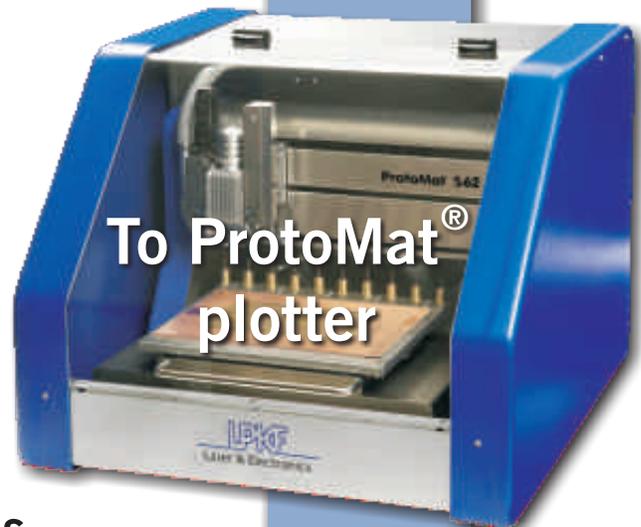
Rapid PCB Prototyping



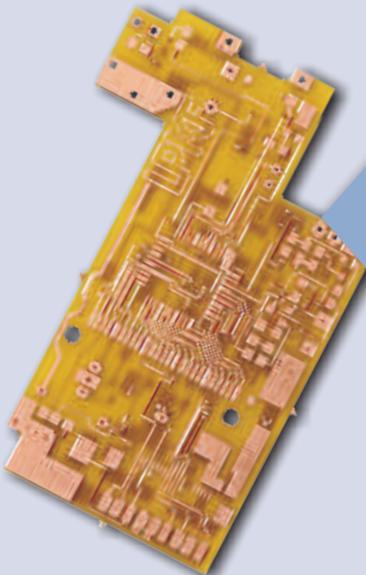
✓ In-house, chemical-free
PCB production systems!

CAD data from
any system

- ✓ Liberate your designers from outside suppliers
- ✓ Accelerate your project to market
- ✓ For single-sided, double-sided and multilayer boards



To ProtoMat[®]
plotter



To finished circuit board
in just a few minutes!

*"This machine is the most useful piece of
equipment in my lab!"*
- Ben Weinberg
PCA Electronics, Inc.

Through-Hole and Multilayer

Through-Hole

Double-sided PCBs of many different shapes, sizes and component densities are easily made in-house using LPKF systems.

An important design consideration for a double-sided board is through-hole plating, which can allow the fabrication of more complex boards while drastically reducing the number of vias. LPKF offers a range of systems to facilitate in-house through-hole plating.

Conductive paste



LPKF ProConduct
Easy conductive paste through-hole plating without chemicals.



Electroplating

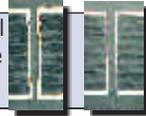


LPKF MiniContac and **LPKF Contac** electroplating systems with reverse pulse plating technology.

Tin plating option.



Conventional through-hole plating.



Reverse pulse plating.

Multilayer

LPKF has all the required equipment you need to produce multilayer PCBs, including the circuit board plotter, a multilayer press and a production-quality electroplating system.

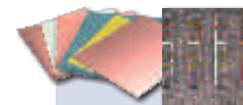
The advantage of having this equipment in-house is that you can produce multilayer boards cheaper and quicker than by using an outside vendor. Your development time is shorter and your product's time to market is much faster.

LPKF plotter



Quality multilayer boards
Exceptional multilayer board production when you combine an LPKF plotter with an LPKF MultiPress and an LPKF Contac or MiniContac electroplating system.

LPKF MultiPress



Electroplating system



Multilayer starter set
Carefully selected components that ensure the best results and smooth production of multilayer prototypes.

Solder Mask

Modern board technology can produce PCBs with densely-packed through-hole and SMT components. Soldering for these complex boards is easier and more reliable if they have a solder resist mask. This protective mask is typically applied in board mass production, but it has been largely omitted from board prototyping because of the messy, costly and time-consuming screen printing process.

LPKF provides easy, environmentally-friendly solutions for adding solder resist to milled prototype PCBs.



LPKF EasySolder
Instant solder mask for prototype circuit boards.



Solder mask application process.

Solder mask lamination with LPKF MultiPress

The LPKF MultiPress can also be used to laminate prototype solder masks. The advantages are a shorter process time and the ability to handle larger circuit boards. The complete laminating process is fully automatic and press parameters are conveniently pre-programmed.

ProtoMat[®] Product Line

S-Series

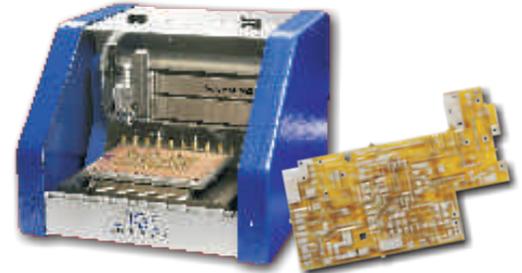
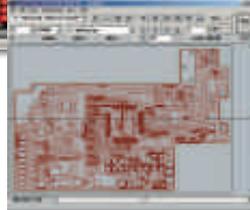


ProtoMat[®] S62

The LPKF ProtoMat[®] S-Series plotters deliver superior speed, precision and performance at an affordable price. An automatic tool changer simplifies operation, and a motorized Z-axis makes them ideal for producing front panels and housings, as well as any PCB. Additional equipment like a vacuum table top and a fiducial recognition camera system extends their capabilities.



Import Gerber data from any CAD system.



Mill the artwork and drill the holes in the PCB with the ProtoMat S62.

Finished milled and drilled circuit board.

Producing a board using CircuitCAM, BoardMaster and a ProtoMat S62

M-Series



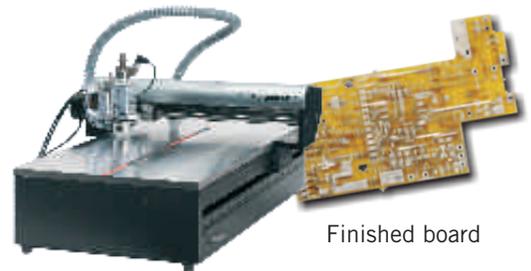
ProtoMat[®] M60

The LPKF ProtoMat[®] M-Series plotters provide a variety of generous table sizes. These systems are ideal for milling artwork and drilling holes on large analog and digital multilayer boards, or for producing multiple copies of the same or different layouts.



Create the front panel artwork in AutoCAD.

Import Gerber data from any CAD system.



Finished board

Mill and drill the board and front panel on a ProtoMat M60.



Finished front panel

Producing a board and a front panel with a ProtoMat M60

H-Series



ProtoMat[®] H100

The LPKF ProtoMat[®] H-Series plotters are designed for PCB labs that need to produce large volumes of varied prototypes, or for users that require a high level of system automation.



Mill and drill the board layers on a ProtoMat H100.



Bond the board layers with a multilayer press.



Plate the through-holes with an electroplating system.

Producing a multilayer board with a ProtoMat H100

"Excellent! It's a wonderful machine that saves me a lot of time. I love it!"
- Frank Galica
Supertex, Inc.

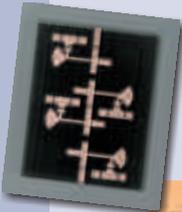
Applications



Single-sided, double-sided and multilayer circuit boards

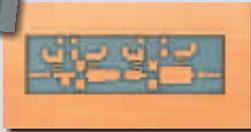
LPKF plotters are versatile performers for producing standard printed circuit boards on common FR4 copper-clad material.

Multilayer boards can be rapidly completed in-house when an LPKF plotter is combined with a multilayer press and an electroplating system.



RF and microwave circuits

LPKF plotters are ideal for producing high-precision RF and microwave circuits on PTFE-based substrates like RT/duroid®.



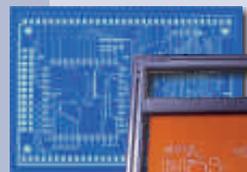
Flex and rigid-flex circuits

Flexible and rigid-flexible PCBs are easily manufactured in your own electronics lab by LPKF plotters employing non-contact air bearing depth limiter capabilities.



Front panels and sign engraving

Drilling, milling and engraving in plastics, plexiglass and non-ferrous metals like aluminum or brass.

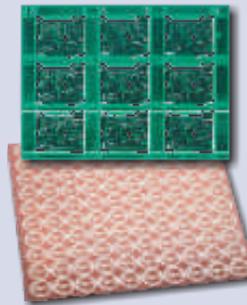
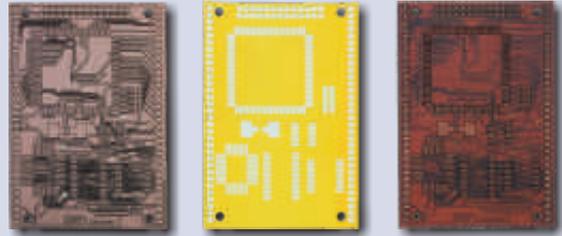


Cutting and engraving plastic foils

Polymer SMT paste stencils and assembly inspection templates are easily manufactured with LPKF plotter systems.

Solder mask

PCB solder masks are easily produced by using an LPKF plotter to cut into adhesive polymer material, then the material is bonded to the finished board.



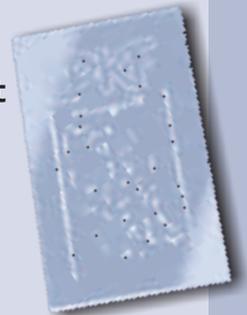
Rework of assembled and bare boards

LPKF ProtoMat systems are ideal and cost-effective solutions for depaneling, track modifications, drilling and the creation of holes and openings after board manufacturing.

Drilling circuit boards or test adapters

By reading in drilling coordinates from circuit boards, LPKF plotters can be used as CNC drilling machines.

Test adapters for automatic board testing systems can be drilled or milled in various materials.



Inspection templates

A crucial aspect in the production of inspection templates is precise machining of the carrier materials to ensure a perfect fit with the mass production circuit boards. LPKF plotters provide this high degree of precision.



"We have had our LPKF ProtoMat system for five years now and find it invaluable for boards and other components. It was the best investment this company ever made."

- Nigel Robb
System Sound

SMT Assembly

LPKF offers a complete line of high-quality SMT assembly equipment for PCB prototyping and small-scale production.

Our selection of manual stencil printers, semi-automatic pick-and-place systems and benchtop reflow ovens provide the precision needed to assemble circuit boards with surface-mounted components in your own facility.

"LPKF provides the top-notch kind of technical support that reflects the high quality standards that LPKF has set forth."

- Charles Grey
RF Micro Devices



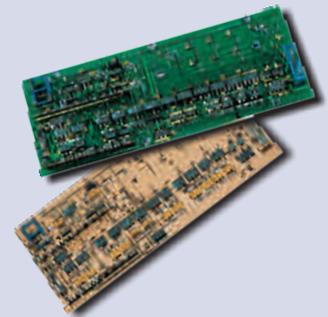
Apply solder paste to the SMT board with a solder paste screen printer.



Place the components with a pick-and-place system.



Bond the components to the board with a solder reflow oven.



Assembled prototype and chemically-etched production boards.

Assembling an SMT board



Laser & Electronics

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