

## **Multilayer Technology for the Lab**

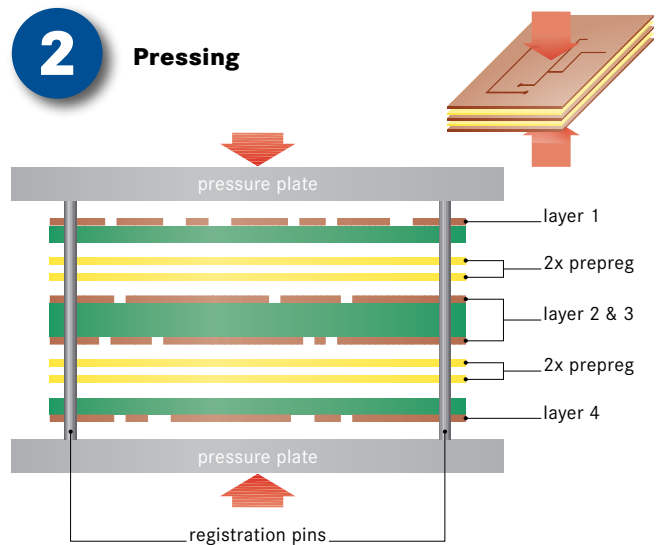
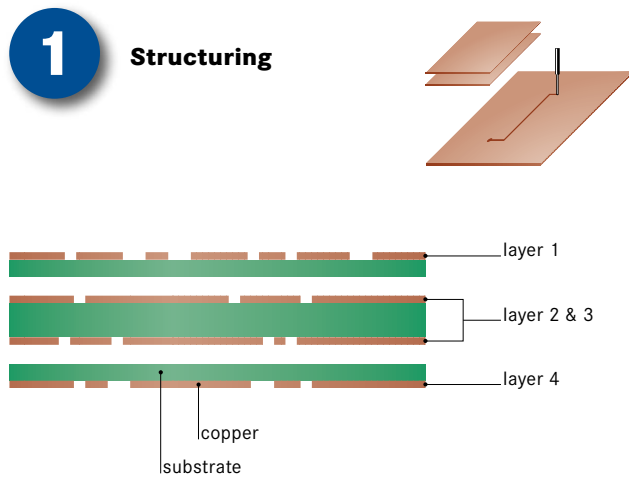
**Fabricate multilayer prototypes in-house:  
Easy, precise, chemical free**

# Structuring, pressing, through-hole plating: A complete multilayer prototype is ready.

With a growing number of manufacturers and research and development groups competing, speed has become the principle watchword in the electronics industry. Time-to-market is a critical factor and R&D the highest hurdle to leap. How can the time between design and production be reduced? One answer more companies are turning to is in-house prototyping, complete development

of fully functional electronic prototypes independent of outside vendors. LPKF offers a prime set of tools for exactly this purpose, including a powerful technique for developing complex multilayered prototype circuit boards – all within a single production day!

**Create multilayer prototypes including RF-boards in three easy steps:**



LPKF's ProtoMat circuit board plotters use exactly the same data files sent to any board fabrication house. The **LPKF ProtoMat®** includes such features as automatic tool changes and fiducial camera recognition to assure perfect alignment of all circuit layers.

After structuring the layers, everything is sandwiched carefully into the **LPKF MultiPress S**, including thin bonding and insulative layers of "prepreg". The hydraulic LPKF MultiPress includes many pre-programmed profiles, and can be fully user-programmed to meet any bonding requirement.



**0 min**

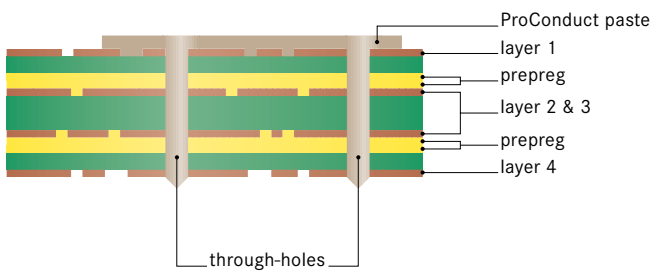
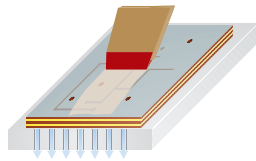
Structuring

**90 min**

Pressing



### 3 Through-hole plating



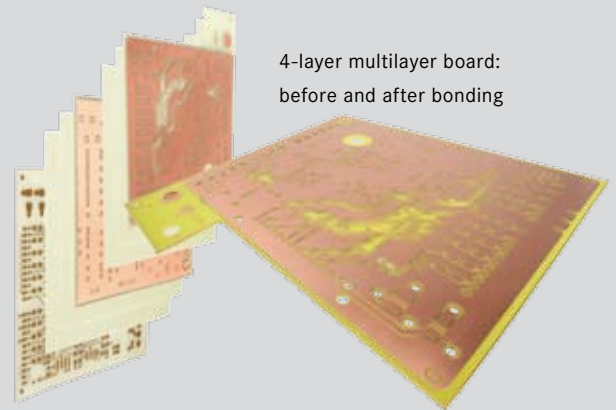
After pressing, drill through-holes with an LPKF ProtoMat® circuit board plotter, then plate the through-holes. Creating conductivity is easy with **LPKF's ProConduct**. This method uses a specially-developed conductive polymer to quickly plate vias in a chemical free process that can be performed in parallel.



### Integrated systems, proven technology. Take advantage of LPKF's multilayer technology.

LPKF's multilayer technology offers every tool needed to create completely functional prototype boards of professional quality, in a matter of hours – hours that could be critical in this highly competitive field.

LPKF's applications team is available to answer any questions or help produce a winning solution to any manufacturing or R&D problem in rapid PCB prototyping. Now is the time to take control of the complete process, from start to finish, from design to production.



4-layer multilayer board:  
before and after bonding

210 min

250 min

Through-hole plating

# Start producing multilayer prototypes independent of outside suppliers tomorrow.

LPKF Laser & Electronics provides a complete suite of tools for the creation of in-house PCB prototyping. The systems below are all that's required for a complete prototyping solution, ideal for prototype-board sizes up to 229 x 305 mm (9" x 12").

Additional tools include e.g. the LPKF ProMask, an easy-to-apply solder mask, protecting traces and preventing soldering-based short circuits. Contact LPKF to learn about high-quality rapid prototyping solutions for SMT/SMD systems.

## 1 Structuring



The **LPKF ProtoMat® S100**, a high-speed circuit board plotter structures precise circuitry in minutes. Including a fiducial recognition camera and a vacuum table top, the LPKF ProtoMat S100 is ideal for multilayer applications.

## 2 Pressing



The key to in-house multilayer work is the **LPKF MultiPress S** hydraulic press, reducing the pressing process time to only 90 minutes. Many pre-programmed profiles, as well as user-programmable options, make the process easy.

## 3 Through-hole plating



The final step to a successful multilayer board is a consistent, high-quality method of creating through-hole continuity. The simple chemical free **LPKF ProConduct** system is ideal for in-house rapid PCB prototyping environments. The LPKF ProConduct set includes all the necessary tools and supplies.

### Learn about more in-house prototyping solutions by LPKF.

**LPKF ProMask/LPKF ProLegend:** Kits for in-house solder-resist masks or legend printing.

**LPKF MiniContac RS/LPKF Contac RS:** Compact stand-alone system for galvanic through-hole plating.

**LPKF ZelPrint LT 300:** This manual fine-pitch stencil printer deposits solder paste in exact amounts and locations.

**LPKF ProtoPlace:** A manual precision desktop pick & place machine to place SMT components.

**LPKF ProtoFlow:** This state-of-the-art lead-free reflow oven is the final step in producing an SMT rapid prototype.

**Please feel free to ask for more information.**

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