

Rapid PCB Prototyping  
**Newsletter**



**Integrated Head Lighting for ProtoMat® Systems**

Starting 2002 all ProtoMat® systems (except the ProtoMat® C20) will be shipped with integrated head lighting. This allows faster tool depth calibration and effective monitoring of the system's performance while milling or drilling. This head lighting can also be retrofitted to all ProtoMat® systems and most LPKF 91s / 92s systems. Please contact Technical Support at (503) 454-4229 to find out if your system can be upgraded with this helpful option.

Upgrade Kit Including modified mechanical working depth limiter part #109283 \$380

Upgrade Kit Including modified pneumatic working depth limiter part #109284 \$475



*ProtoMat® circuit board plotter system with integrated head lighting*

**Dear LPKF User,**

Once again I'd like to thank you for your loyalty. Everyone here at LPKF appreciates your ongoing input which helps us to design better products for Rapid PCB Prototyping. For those of you who recently became a ProtoMat® owner I would like to welcome you to the LPKF community of over 10,000 users worldwide. I'm proud to announce that now all of LPKF's three factories are ISO9001 certified. This shows our ongoing commitment to the quality in our products.

I also would like to encourage you to visit our new North American web site at [www.lpkfusa.com](http://www.lpkfusa.com). As always we will be happy to hear from you with your comments and suggestions.

Sincerely  
Stephan H. Schmidt  
Vice President & General Manager North America

**New Software: CircuitCAM 4.0 / BoardMaster 4.0**

LPKF Laser & Electronics is proud to introduce CircuitCAM 4.0. This software features new convenient applications and now is available as a full featured stand-alone CAM software package. CircuitCAM reads a broad range of artwork formats including Gerber (RS 274-D and RS 274-X), DXF, Barco DPF, ODB++, HP-GL, HP/Agilent EEsof/MDS Mask files, Excellon (I and II) and Sieb&Meier drill files. As output formats, Gerber, Gerber-X, HP-GL and Excellon are supported.

CircuitCAM 4.0 includes a large number of powerful editing tools to manipulate artwork, apertures and layers such as Layer Match-Up, Step & Repeat, Copper Pouring, Draw-to-Flash and Design Rule Check to name only a few. It contains special features that make this CAM software very powerful when handling DXF files. Among them are the One-Step Polygon Conversion and a Combine Function to mount multiple individual line items automatically to a closed entity. CircuitCAM handles multiple documents with different artworks simultaneously and also supports the Windows Clipboard, making it very user friendly.

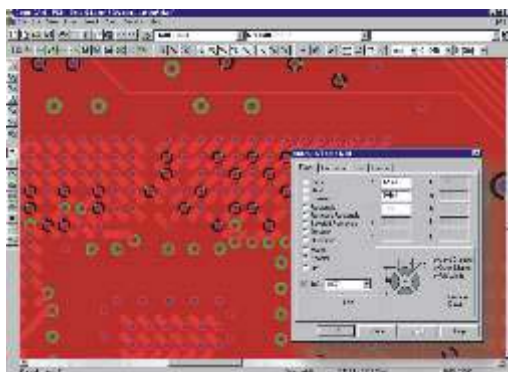
The software has a Front-to-Back, Program Wizard that drastically cuts the learning curve and also operates in an easy customizable batch mode. For file handling with RS-274-D and Excellon I files, CircuitCAM provides a graphical aperture/tool list filter.

LPKF refined CircuitCAM 4.0 from it's widely installed circuit board plotter software for rapid PCB prototyping. "With over 8 years of experience in this field and thousands of installations we were well aware of the power and versatility of CircuitCAM." said Hans-Erich Plock, Division Manager for Software and Rapid Prototyping Products at the LPKF Laser & Electronics Headquarters "After market research and a very close cooperation with our customer base we decided to take CircuitCAM to the next level and make it available as a stand-alone system for professional power-users." The software is PC based and compatible with Windows 98 and Me. LPKF recommends a Windows 2000 operating system environment for professional users. To learn more about CircuitCAM 4.0 and BoardMaster 4.0 visit [www.lpkfusa.com/software](http://www.lpkfusa.com/software).

**Same Day Shipping of Tools and Materials**

We know that your tool or material order can be extremely urgent. That's why LPKF is committed to ship your materials the same day of your order placement if received before 12pm (PST). Please make sure you specify your preferred carrier (FedEx or UPS) and method of service (Ground, 2nd Day or Overnight). If you want us to charge the shipping cost directly to your UPS or FedEx account please specify the account number with your order.

Try our new online ordering system. This way we have all necessary information by the time we get your order so we can ship it right away.



- Upgrade to CircuitCAM 4.0 for a Lite license Part# 109299 US\$ 490 (includes BoardMaster 4.0)
- Upgrade to CircuitCAM 4.0 for a PCB license Part# 109300 US\$ 1,150 (includes BoardMaster 4.0)
- Upgrade from a Lite license to CircuitCAM 4.0 PCB Part# 109301 US\$ 1,595 (includes BoardMaster 4.0)

## Group Training Classes

LPKF offers inexpensive group training classes conveniently located in the Silicon Valley at the Santa Clara Convention Center and in Dallas Texas. Within a few short hours students learn advanced software handling to streamline the prototyping process and are given many tips & skills on using the circuit board plotter hardware. Attendants will be milling their first single sided circuit board within 2 hours of the beginning of the class. Our small classes also address individual requirements. The students will be able to tailor the software and hardware to streamline the prototyping process to fit the needs of their company.

LPKF provides a complete book with sophisticated training documentation for each student. These two full day 8-hour classes can be individually booked and are ideal to re-train users or train new staff members on your LPKF equipment.

### Refresher Course

**Qualifications:** Basic understanding of CAD or CAD/CAM processes. Familiarity of LPKF Systems and their uses. This class is basic but is hands on and moves very quickly.

**Contents:** File management, importing and processing of Gerber data and NC Drill Files, CircuitCAM and BoardMaster software, hands-on machine operation and tool selection.

**Objective:** Student will be able to take CAD data to a physical prototype and to produce a single layer board using default and basic software settings.

This class is also ideal to train staff that has been recently assigned to existing LPKF equipment.

Cost per student US\$495

### Advanced Course

**Qualifications:** Experienced user who creates regular double-sided boards or has completed the basic course. User who desires to make full use of the powerful and versatile CAD/CAM software package. Have knowledge to manipulate system to produce complex PCB's including multilayer, plated thru holes and exotic substrates.

**Contents:** Setup of import assignment, insulation strategies, design manipulation, machine configuration and tool management. This class also covers insulation and material handling for RF and Microwave substrates as well as DXF file processing and setup of multi layer data.

**Objective:** Student will be able to produce complex double-sided boards with various substrates and will be able to manipulate software and hardware to suit more complex needs. The enhanced training will give the student a working knowledge of all aspects of prototyping.

Cost per student: \$495

### Spring Schedule:

Santa Clara, CA

May 7<sup>th</sup>, 2002  
Refresher Course

May 8<sup>th</sup>, 2002  
Advanced Course

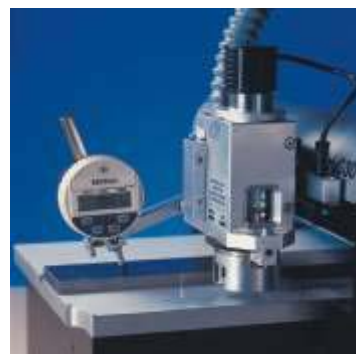
Dallas, TX

May 21<sup>st</sup>, 2002  
Refresher Course

May 22<sup>nd</sup>, 2002  
Advanced Course

## Plotter Maintenance Program

LPKF now offers maintenance on your LPKF circuit board plotter. We will perform complete maintenance on your LPKF 91s, 92s, or any ProtoMat system. This includes cleaning, lubrication, and calibration of all rods and lead screws. Our technicians will also check alignment of the registration system, (includes new INI files) and check alignment of motor height and angle. Parts and labor for these maintenance tasks are all included in the fixed price. In addition we will install integrated head lighting on your system for no extra charge. This maintenance job is available for a fixed price of \$500 plus shipping and handling. We understand the busy schedule and time constrictions engineers have, therefore this service is available at your convenience. Please call customer service to make an appointment for you circuit board plotter. In the special case that our service technicians finds necessary repairs on your system that would exceed a maintenance job, we will make a recommendation on any hardware upgrade or repair separately. Such repairs would be subject to separate authorization and billing.



This maintenance program will assure reliable service of your LPKF circuit board plotter system and protect your investment for years to come.

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**25** Serving the  
**Electronic**  
**Industry**  
Years

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www.lpkfusa.com  
info@lpkfusa.com

**Tech Support Group:**  
1-503-454-4229  
6am-5pm (Pacific)  
support@lpkfusa.com

**System Sales:**  
1-503-454-4219  
or toll free 1-800-345-LPKF  
sales@lpkfusa.com

**Tool & Material Sales:**  
1-503-454-4242  
or toll free 1-800-345-LPKF  
tools@lpkfusa.com

## New Tech Support Web Site

We would like to introduce you to the new LPKF Laser & Electronics customer support home page [www.lpkfusa.com/support.htm](http://www.lpkfusa.com/support.htm). You can register for access to a large number of FAQ's, Downloads, How To Documents, and a newly designed User Forum.

Registering helps us to serve you with a more customized support experience and keep you informed on new products and updates.



- The [FAQ's](#) (Frequently Asked Questions) and solutions section is updated and expanded frequently.
- The [User Forum](#) is an interactive application allowing you to communicate with our technicians and other customers, your questions and needs with fast response time.
- The [Tech Support](#) section of this site is a fast and effective way to receive technical support. All you have to do is submit your question, and you will receive a rapid response to your inquiry.
- The [Software Download](#) section has free downloadable software and drivers for you to utilize. Including the most recent versions of CircuitCAM and BoardMaster and our useful Template Editor.
- The ["How to" documents](#) contain information about a large range of application from cleaning your machine to creating templates used in your Circuit CAM software.
- The [Manuals download](#) section contains manuals to download

## New Auto-Switched Vacuum System

LPKF offers a new heavy-duty fully automatic dust extraction system. This industrial quality vacuum unit is equipped with HEPA filtration and fully capable to handle all milling and drilling dust including glass fiber reinforced substrates. The LPKF dust extraction unit can be directly connected with any LPKF ProtoMat® and most older plotter systems to be turned on and off synchronized with the milling motor. This system is capable of permanent operation and guarantees 100% absorption of the milling dust, minimum noise and maximum life of the vacuum system.

The new LPKF dust extraction system (p/n 050114) operates at 115V and is available both online and by conventional order for US\$680.



### FAQ

**Q** When should I initialize my milling machine?

**A** The ProtoMat® machine should only be initialized when instructed by LPKF Technical Support. This process will generally only be performed when there has been calibration adjustments made to the system or if the system seems to be sizing itself abnormally. Doing this when it is not needed may cause delays in production and unnecessary work.



It will always be necessary to re-drill your set-pin alignment holes in order to maintain front to back registration. You will find instructions for this procedure under the support section of our website [www.lpkfusa.com](http://www.lpkfusa.com).

