

Laser Depaneling Services

LaserMicronics – Excellence in Contract Manufacturing

LaserMicronics is a specialist in precision laser micro-machining with unsurpassed quality – from low to high volumes.

With a comprehensive portfolio of UV, green, IR, and ultrashort-pulse laser systems from LPKF, printed circuit boards, plastics, and stainless steel can be processed with micrometer-level accuracy and without damaging the materials.

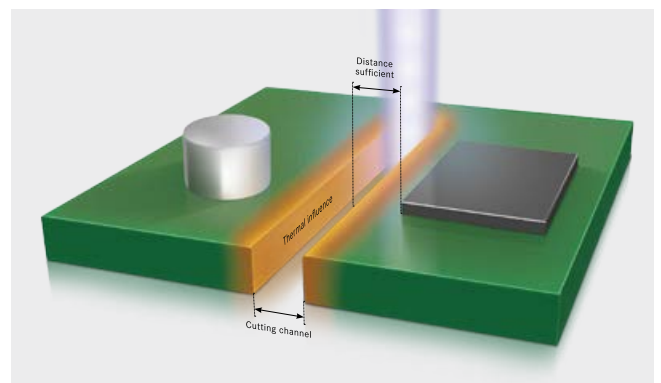
Each process is precisely tailored to the respective customer requirements – especially for demanding applications in the medical, electronics, and automotive industries.

Maximum Precision

In electronics manufacturing, precise cutting tasks must be performed at various points in the manufacturing process. The tasks range from processing of individual components of complex layered structures to stress-free depaneling. The laser process is the first choice for high-quality, clean cuts in PCB materials.

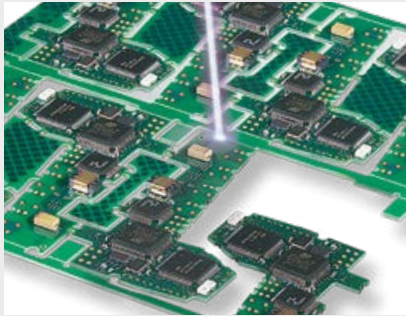
Advantages at a Glance

- Depaneling of populated and unpopulated substrates
- Processing is carried out without any mechanical loading
- There are no restrictions on possible cutting contours
- The cutting channel is just a few micrometers wide
- High-precision cuts can be made close to the edges of delicate components or conductive traces
- The process yields a minimal heat-affected zone, no cracks, and no delamination

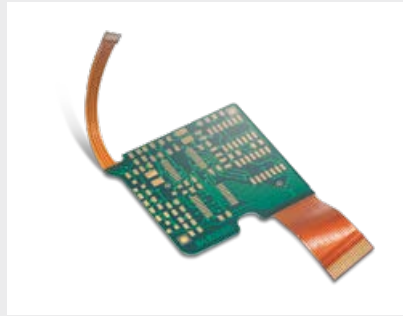


Application Areas

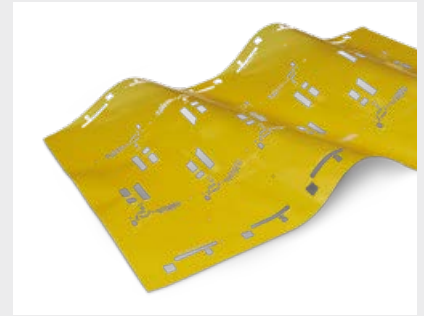
Laser depaneling is used in the final phase of assembly production. Individual boards are precisely separated from the panel. The laser can cut through tabs or cut complete contours with extremely high precision and with absolutely no mechanical loading of the materials. The exact cutting position for the tab or contour can be selected flexibly and adapted to the respective requirements.



FR4 materials



Rigid-flex boards

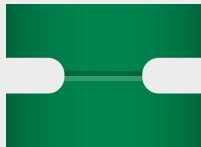


Flexible circuits boards

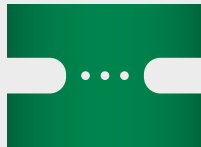
Various Cutting Contours at a Glance



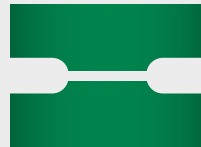
Contour cut



V-cut



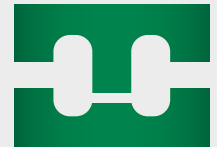
Perforated tab



Center tab-cut



Edge tab-cut



Recessed tab

Vision Assistant for Process Reliability

Intelligent vision software ensures superior process reliability during cutting: by means of marks, it recognizes the exact cutting position and automatically compensates for warpage and position deviations. The result: consistently precise cuts.

Scanner-Controlled Precision

A special scanner system guides the laser beam to the cutting position without contact, reaching speeds of up to several meters per second. Depending on the material thickness, the contour may be traversed multiple times – quickly, flexibly, and without mechanical contact.

Versatile Processing Capabilities

- Substrate size: Up to 610 x 533 mm
- PCB types: Bare, single-sided or double-sided populated
- Component height: Max. 30 mm
- Material thickness: Up to 1.6 mm (larger upon request)

Three Cutting Technologies – One Goal: Optimal Quality

Depending on requirements, LaserMicronics offers three proven technologies – from Standard-Cut through Fast-Cut for optimized efficiency to Clean-Cut for pristine cut edges.

Why LaserMicronics?

- Expertise gained from 30+ years of experience in demanding industries
- Use of LPKF technology: The latest generation
- Full service from feasibility study to mass production



Ready for More Precise and Efficient Depaneling?

Contact us to get started.