

## Laser cutting of printed circuit boards with even more Power

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**LPKF Laser & Electronics AG supplements the MicroLine laser machine series with even more powerful variants**

**Increased laser power of about 80% makes this possible: The effective cutting speed of the LPKF MicroLine systems can be significantly increased with the new UV laser - even doubled, depending on the layout and material used. In addition, the quality of the result increases. Laser-assisted processing of substrates in PCB production and the separation of assembled printed circuit boards becomes even more efficient. Users of flexible and sophisticated printed circuit board materials in particular benefit from the expanded possibilities offered by the new laser source.**

UV lasers are ideal tools for processing substrates under minimal thermal or mechanical stress in the surrounding material. The LPKF UV laser systems MicroLine 2000 and MicroLine 5000 are highly specialized machines for micro-precise cutting, drilling, separating or material removal of organic and inorganic substrates.

Compared to mechanical processes, the use of UV lasers offers many advantages: there are no limits to the geometries. The UV laser processes the material contactlessly and can be used without any previous machine changeover times. The thermal influence zone in the surrounding material is practically negligible, so that a high packing density can be achieved. In addition, the MicroLine systems are burr-free and virtually dust-free. This produces ideal results for microelectronics.

The MicroLine 5000 can be used to process a wide variety of PCB variants - whether rigid, rigid-flexible or flexible. As a universally applicable system, the MicroLine 5000 is suitable for all industry-standard material dimensions up to 21" x 24". The system achieves precise cuts at high speeds, especially for particularly demanding geometries. With the machine, vias in sizes > 20 µm can be realized.

The MicroLine 2000 is an ideal system for separating assembled printed circuit boards as well as for cutting and separating flexible printed circuit boards and cover layers. Minimal protection zones for traces and components allow optimum utilization of the available PCB surfaces and sup-

ports the megatrend miniaturization.

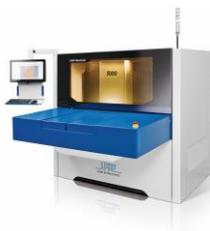
With the existing interfaces, MicroLine systems integrate seamlessly into existing Manufacturing Execution Systems (MES). The laser system transfers operational parameters, machine data, tracking & tracing values and information on individual production runs. This means that production data can be reliably tracked - a particularly important point for safety-relevant applications.

**Figure 1: LPKF\_1409\_MicroLine 2000\_Ci**



The MicroLine 2000 with its new, powerful laser source increases the cycle times of SMT lines as an inline variant.

**Figure 2: LPKF\_1501\_MicroLine\_5000\_TF\_004**



The MicroLine 5000 achieves a doubling of the performance with the new laser source: Faster cuts and shorter drilling times with even higher machining quality

**About LPKF**

LPKF Laser & Electronics AG manufactures machines and laser systems used in electronics fabrication, medical technology, the automotive sector, and the production of solar cells. Around 20 percent of the workforce is engaged in research and development.