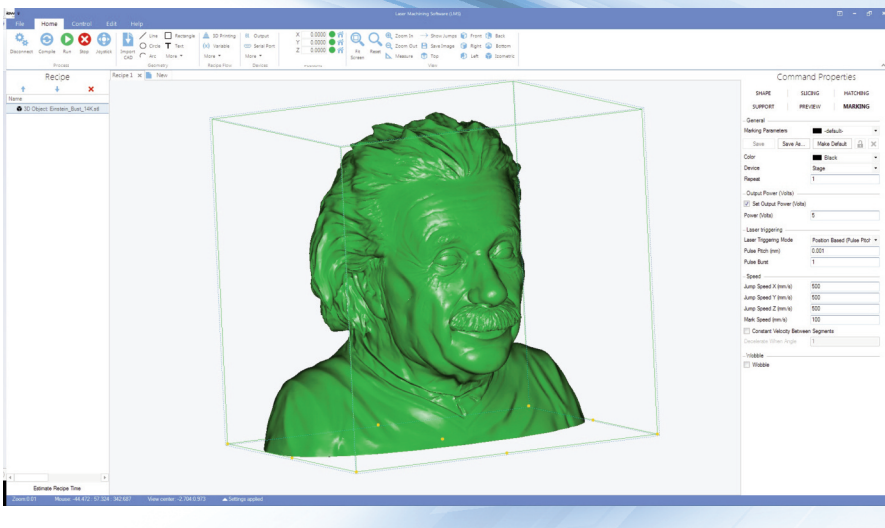
# Laser Machining Software

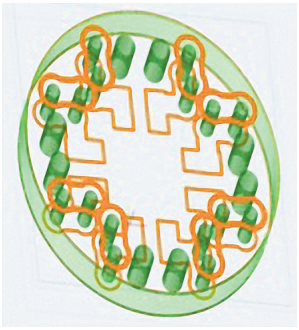
**L M S**



Laser Machining Software is an all-in-one solution to control your laser machining system. LMS is easy to learn and requires no specific skills to use it. Just enter parameters and click!

- Easy to learn and intuitive
- Single window functionality
- Saves time with fast processing
- Controls most of machining processes right away
- Can be tailored to your needs with a special GUI, special functions or new hardware
- Open architecture allows adding user created plugins

## SOFTWARE VERSIONS

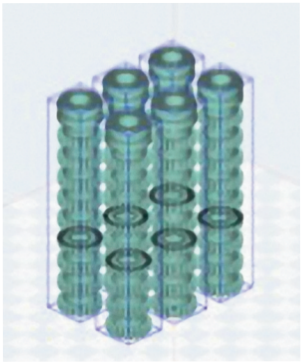


### Pro Version

One size fits all engine to control laser machining processes, from laser marking and direct laser structuring, to laser additive manufacturing.

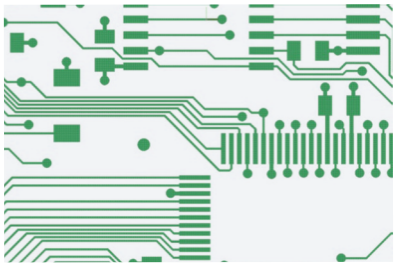
**Key Features**

- CAD import and design
- Process automation
- Hardware control



### OEM Version

- Tailor-made to hardware
- Application development via plugins
- Task optimized HMI
- Specific functions
- Encrypted process parameters
- Specific hardware support



## COMPATIBLE CONTROLLERS

### XPS

- Universal Controller/Driver
- Single enclosure up to 8 Axis
- User Friendly Interface and API's
- Research and Generic applications

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## LMS FEATURES

### CAD Import and Design

- Import CAD files (DXF, DWG, STL, Gerber, NC Drill, etc.) or design using with built-in tools.
- All shapes can be hatched with advanced LMS hatching algorithms, enabling fast and uniform fill.
- Objects are parametrized, for precise control and easy editing or described using math functions.

### Automation

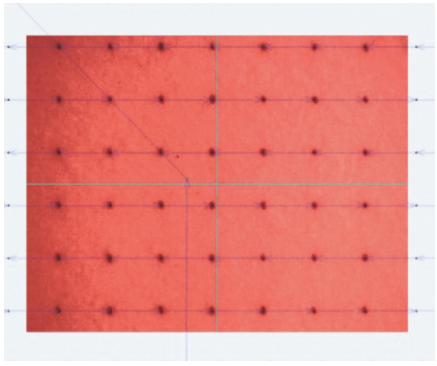
- Complex laser machining recipes can be created and automated with LMS software.
- Galvo scanners and positioning stages are controlled automatically, using Stitching function. Objects are split to smaller parts to fit in galvo field or centered in it.
- All the actions in the machining recipe are controlled by parameters and variables. Loops can be created for repetitive patterns.
- Recipe or parts of it can be triggered by digital inputs.
- Machining trajectories can be adjusted automatically to compensate for sample tilting or flatness using camera autofocus or different sensors.
- All in a single interface and requires no special programming knowledge.

### Hardware Control

- Single-window control of hardware directly using .dll libraries, no need for G-Code.
- LMS controls positioning stages, galvo scanners, laser sources, sensors and power meters and many other devices can be controlled via digital or analog I/O and serial port.
- Support for additional hardware or writing plug-ins.

### Machine Vision and Alignment

- Seamlessly integrates machine vision for laser machining processes including simulation and setup.
- Several cameras can be calibrated to precisely match position and scale of stages and scanners.
- Autofocus allows precise surface detection down to sub-micron, depending on optics.
- Automatic and manual alignment procedures compensate sample misplacement or rotation.

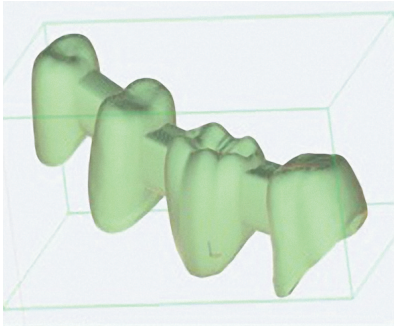


## APPLICATIONS

### Laser Additive Manufacturing

LMS software is a great tool to prepare and control laser additive manufacturing/3D printing processes like SLS, SLM, SLA and others.

- Use multiple STL models for single process
- Fast STL slicing and hatching
- Repair faulty STL models
- Various hatching modes
- Control of the process



### PCB Laser

Gerber and NC Drill files can be imported to LMS laser machining software and prepared for machining in a single window.

- PCB laser etching
- PCB laser drilling
- PCB laser cutting

Process can be implemented with both, galvo scanners and linear stages for greater speed. Machine Vision is used to realign after flipping or board replacement.

### Laser Engraving

- Import DXF and STL files or design using built-in tools. Use designs for 3D and deep laser engraving.
- Integrated Machine Vision allows manual or automatic alignment of sample for precise positioning.
- LMS controls both galvo scanners and positioning stages, optimized for large field and high accuracy.

### Laser Drilling

- Import NC Drill and DXF files or user-add holes Complex hole patterns can be created using Recipe Flow tools.
- Laser and motion parameters are controlled at the single-window interface.
- Stitching tools enables use of galvo scanners for drilling and linear stage translation between vias – each via or group of vias can be centered in the galvo scanner field automatically. This way speed, size and accuracy of the process can be maximized.
- Alignment with cameras and machine vision is available as an option.

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