

# Prototype Production

Efficient development of electronics implies fast production of prototypes - we have at EKTOS our own prototype factory, where we can make low-volume prototype series in less than 24 hours from gerber-files to finished electronics.

## This is why our production is fast and cost-effective

Our facility contains PCB manufacturing and component mounting which gives us the shortest possible process time because a fast prototype allows us to easily check the effects of improvements regarding e.g. EMC, heat losses, or other changes.

EKTOS controls the logistics in and out of our prototype factory, which is placed in Western Ukraine, so we are able to produce at low cost even though prototype manufacturing involves more manual work than usual manufacturing of electronics.

## How it works

When your schematic is ready, you deliver your Bill Of Materials (BOM) to us, and we source parts for the amount of prototypes you want. You can also source components partly or fully yourself. EKTOS has supply agreements with leading suppliers, so we can usually buy components for prototypes at lower prices.

When your layout is ready, you hand over your gerber-files to us and we produce your PCBs and populate them in one uninterrupted work-flow at the same location, typically in less than 24 hours. Transport from our prototype factory to you can be arranged within a short time frame, typically one day.

The process is controlled fully by EKTOS, all you need to do is to send your production data in two deliveries: First the schematic

with BOM, secondly gerber-files when the design is ready. Already at first delivery when schematic, BOM, and the estimated size of the PCB is known, EKTOS can estimate the cost of the prototype production.

## Details about our factory

### PCB-manufacture

We have a semi-automatic line for multi-layer PCB production based on normal photo-chemical process, galvanic plating, and surface treatment, as well as a hydraulic lamination press. We operate with solder stop mask and silk-screen. The production line is optimized for fast prototype production. Our stencil production is carried out with both cutting and chemical processes.

### PCB assembly

- Solder paste is added with a precision screen-printer.
- We do mounting both with assisted manual mounting and a flexible Pick&Place machine.
- We solder with a powerful prototype batch-oven.

### Quality control

EKTOS has world-class equipment for control of each individual layer in the PCB-manufacturing process before lamination as well as control of the plating. All PCB's are checked before mounting. After mounting, soldering and placement is always visually checked, but the PCB's can also be electrically checked before delivery because we have our hardware development lab in the same facility.



Flexible prototype pick and place machine



Traditional PCB production scaled to prototype level. We don't just produce prototypes for our own projects, but also for products which we have not developed

### PCB production capabilities

- Layers: max 6
- Size: max 200x280 mm
- Material: FR-4
- Hole size: min 0,2 mm
- Annular ring: min 0,15 mm
- Track width: min 0,15 mm
- Track distance: min 0,15
- Soldermask: green
- Finished copper: max 105 um Cu
- Surface finish: ENIG Gold or SUR-Tin
- Silks-screen: blue

### Assembly capabilities

- PCB size: max 210x270 mm
- Component size: min 0201
- Component packaging: LBGA
- Lead-free or lead solder
- Two-sided assembly

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