

SURFACE MOUNT TECHNOLOGY

What We Offer

Design &
Simulation



Prototyping &
Fabrication



Testing &
Characterization



Surface mount technology (SMT) is a printed circuit board manufacturing technique used to place and bond electronic components onto a PCB with precise control over alignment, solder deposition, and thermal profile. The process combines three core stages: solder paste is first printed onto the board's pads, components are then placed onto the paste with precise alignment, and the assembly is finally heated in a reflow oven to melt the paste and form permanent solder joints. Together, these systems support PCB assembly across prototyping and low- to high-volume manufacturing.

Key applications

Assembling electronic components onto circuit boards for prototypes and finished products

Producing small batches for testing new designs, or larger batches for production runs

Uniprint-M / Manual solder paste printer

- Printing area: up to 400 × 300 mm
- Printing method: manual squeegee pressure and alignment
- Alignment accuracy: ± 0.02 mm (manual micro-adjust)
- Frame size compatibility: 370 × 470 mm typical
- Suitable for single and double-sided PCB printing
- Adjustable PCB holder with X/Y and theta control
- Material: anodized aluminum with vacuum or clamp fixatio

Contact person:

Dr. Vaidotas Barzdėnas

Faculty of Electronics

Vilnius TECH

vaidotas.barzdenas@vilniustech.lt

Speedline IWT Accella

Stencil printer designed for surface mount technology (SMT) systems for large-scale PCB assembly

- Maximum substrate weight: 7kg
- 3-stage transport rail system
- Total system alignment: ± 12.5 μ m
- Wet print deposit: ± 25 μ m
- Cycle time: less than 5.5 s
- Maximum board size: 558 × 508 mm
- Minimum board size: 50.8 × 50.8 mm
- Board edge clearance: configurable to 3 mm or 5 mm
- Transport height from floor: 813 mm to 1041 mm
- Snap-off: -0.025 mm to 12.7 mm
- Print Speed: 6 mm/s to 305 mm/s
- Print Stroke: ± 280 mm

Contact person:

Šarūnas Jankauskas

Proto Lab, M-Lab

Kaunas University of Technology

sarunas.jankauskas@ktu.lt

Essemtec Expert M

Manual and semiautomatic SMD assembly system for prototyping

- Placement accuracy: ± 0.05 mm
- Component size range: 0201 to 50×50 mm
- PCB size: up to 400×300 mm
- Placement rate: up to 400 components/hour (operator dependent)
- Integrated vacuum pickup with footswitch control
- Rotational θ adjustment and mechanical alignment system
- Support for tape, stick, and loose components

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Essemtec MPL3100

- Semiautomatic microplacer for BGA, CSP and fine pitch components
- Placement accuracy: ± 5 μ m
- Component range: 0201 to 45×45 mm, bare dies, flip chips, μ BGAs
- PCB size: up to 400×300 mm
- Placement speed: up to 3000 components/hour (semi-automatic)
- Integrated vision system for component and pad alignment
- Adjustable vacuum pickup with programmable Z-axis control
- Support for adhesives and solder paste dispensing (optional)

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Fuji NXT-i

Pick & place machine designed for surface mount technology (SMT) systems for large-scale PCB assembly

- PCB Size: From 48×48 mm to 510×534 mm
- Patch speed: H12HS - 22500, H08 - 10500, H04 - 6500; H01 - 4200
- Patch accuracy: H12S / H08 / H04: 0.05 mm (3 sigma) $cpk \geq 1.00$
- Patch range: H12S - $\sim 7.5 \times 7.5$ mm high; H08 - $\sim 12 \times 12$ mm high, H04 - $\sim 38 \times 38$ mm high, H01/H02/OF - $\sim 74 \times 74$ mm, G04 - $\sim 15.0 \times 15.0$ mm high
- Mounted rack: maximum of 20 species/module (8 mm tape conversion)
- Air flow rate: 0.5 MPa
- LED mounter

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RO06-Plus (Essemtec AG, 2016)

Batch reflow oven for prototyping and low-volume manufacturing

- Maximum temperature: 350 °C
- Heating zones: 6 (4 top, 2 bottom)
- Temperature accuracy: ± 1 °C
- PCB size: up to 320×220 mm
- Reflow profiles: leaded and lead-free solder compatible
- Cooling system: integrated forced - air cooling
- Control: digital process controller with LCD display

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Rehm V8 Nitro 3.2 B

Reflow oven designed for surface mount technology (SMT) systems for large-scale PCB assembly

- Heating zone length 3200 mm
- Maximum permissible soldering temp.: 300°C for preheating zones and 350°C for peak zones
- Cooling zone length 1000 mm (two-stage, water-cooled)
- Conveyor system width (single): min. 50 mm to max. 400 mm
- Conveyor speed: 180 - 1800 mm/min.
- Width of a mesh belt conveyor: 400 mm
- Clearance above the mesh belt conveyor: 30 mm
- Interface: Siemens

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Features:

- A choice of manual, semi-automatic, and fully automated systems
- Suitable for R&D, prototyping, and low to large volume PCB assembly
- Placement accuracy down to $\pm 5 \mu\text{m}$ for fine-pitch, BGA, and bare-die components
- Reflow soldering with multi-zone temperature control, forced - air or water - cooling, and compatibility with both leaded and lead-free processes

If you have any questions, please contact us by email:
info@chipsc2.lt



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