

Technical Equipment and Methods

Hahn-Schickard in Stuttgart is equipped with a comprehensive pool of technical equipment, processes and measuring methods, especially for research, development and qualifying of MID. Hahn-Schickard supports customers from the idea of a new product over prototyping and optimization steps to the qualified product. Services in printing technology, assembly and packaging technology, injection moulding, tooling, measurements and environmental testing are also provided by Hahn-Schickard.

Mechanical Processing

- High Speed Cutting (with CAD/CAM): Fehlmann Picomax 60 M and Primacon 24 Compact Cell
- Ultraprecision Machining: PRECITECH Freeform 700A (Five Axis UPM)
- Precision Turning Machine: Benzinger GoFuture B2 (Two Axis)

Injection Molding and Transfer Molding

- Arburg Allrounder 270 A
- Arburg Allrounder 370 A 600 – 70/70 (Two Shot) with micro injection molding module
- Arburg Allrounder 375 V (Vertical) with thermoset module
- Boschman Unistar Molding System with film assisted molding technology

Printing Technology

- Aerosol Jet[®]: Optomec M³D 300
- Inkjet: Schmid DoD 300 Inkjet System
- Pad printer: Tampoflex miniSeal80
- Screen printer: DEK 248
- 3D Printer: Prodways ProMaker L5000
- Flash Curing: Novacentrix PulseForge

Assembly and Packaging Technology

- Automated SMD assembly system: heeb inotec Inoplacer HP advance
- Automated 3D assembly cluster: 4 inline machines with wafer handling, dispensing units, optical inspection, laser soldering etc.: Häcker Automation
- Vapour phase reflow oven: IBL SLC-500
- Convection reflow soldering system: SMT XXS N₂
- High speed deep access fine wire wedge bonder: Hesse & Knipps Bondjet BJ820 PIQC
- Semi-automatic thermosonic ball/wedge bonder: F&K Delvotec 5610
- Manual flipchip bonder: Finetech Fineplacer 145
- Semi-automatic bondtester: Dage Series 4000
- Micro resistance compacting, spot and parallel welding unit: Miyachi Unitek
- Atmospheric plasma pretreatment: Plasmatrete
- CO₂ snow jet cleaning: acp JetStation JS-121

Hot Embossing Equipment

- Hot embossing tool: Schmidt ServoPress 420 LV

Laser Processing

- 2x LPKF MicroLine3D 160i (1064 nm, spot size 60 µm, 85 µm)
- LPKF MicroLine 2120 P (355 nm, spot size 20 µm)
- Edgewave PX25II-A (picosecond, 532 nm, spot size 10 µm)

Selective Electroless Plating of Plastics

- Processes for LPKF-LDS[®] technology (Cu/Ni/Au; Cu/Ag; Cu/Sn; Cu/Pd/Au)
- Process for LCP

PVD

- Creavac CREAMET 750-CL2

Physical and Chemical Analysis

- SEM: JEOL JSM-6490LV with EDX and integrated tensile test equipment
- X-Ray spectrometer: Fischerscope XDVM[®]-µ
- X-Ray and computed tomography: XTEK HMXST CT 160 micro focus CT-sys
- Thermographic camera: InfraTec VarioCAM[®] hr
- FT-IR spectrometer: Bruker Vector 22 with ATR Device Golden Gate (diamond)
- White light interferometry: Bruker Wyko NT 9100 (1,25x up to 100x)
- Optical profiler: FRT Microglider with AFM + CWL
- Stylus profilometer: Zeiss Surfcom 5000
- 3D coordinate measuring machine: Werth VideoCheck-IP 400x400x200
- DSC: Netzsch DSC 204 Phoenix
- Thermomechanical analysis: Netzsch TMA 202
- Tensile testing equipment with integrated temperature / humidity chamber: Tira TT 2810
- Equipment for materialographic preparation and analysis
- Thermal Analysis: Netzsch LFA 467

Environmental Testing

- 2x Thermal shock chamber: CTS
- 2x Temperature / Humidity chamber: CTS
- Shock and vibration (Shaker): LDS V780 /HPA-K

Testing and Measuring Tool

- Diverse electronic measuring tools, mechanical measuring tools and optical measuring tools