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Hummink unveils the BIRD module at SEMICON Europa 2026



BIRD module © Hummink

The first industrial HPCaP solution for micron-scale deposition, designed to improve manufacturing yields

As advanced packaging plays an increasingly important role in the performance and miniaturization of electronic components, manufacturers face growing challenges in terms of yield, precision, and integration.

As the developer and exclusive provider of High Precision Capillary Printing (HPCaP) technology, Hummink introduces the BIRD module (Breakthrough Integration and Resolution in Defect Repair).

Having already demonstrated its capabilities in research and development environments, HPCaP technology is now being deployed in pilot phase on display manufacturing lines, with semiconductor manufacturing and advanced packaging as the next areas of application. BIRD brings micron-scale printing, defect repair, and surface functionalization capabilities directly into the manufacturing process.

"A single RDL defect on a high-value panel can jeopardize the production of dozens of AI chips. With BIRD, we are introducing a repair technology that acts as a surgical tool on the production floor. HPCaP technology enables advanced packaging manufacturers to reduce waste and improve yields." **Amin M'Barki, CEO of Hummink**

Reducing yield losses layer by layer: a critical challenge for advanced packaging

In advanced packaging, a single RDL defect can lead to the scrapping of an entire panel. As the industry moves toward Fan-Out Panel-Level Packaging (FOPLP) to meet advanced packaging demands, increasingly complex architectures and finer RDL lines are creating unprecedented yield challenges.

Where a defect can be repaired rather than scrapped, the value recovered can reach tens of thousands of euros per substrate. This is especially important for manufacturers in the information and communications technology (ICT), AI, and multi-chip architecture sectors.

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Key specifications

Designed for integration into production lines, the BIRD module enables:

- Micron-scale printing from **0.6 to 50 µm**;
- Localized material deposition and defect repair;
- Surface functionalization.

Performance specifications:

- Compatibility with conductive, dielectric, and functional inks up to **250,000 cP**;
- Compatibility with glass and a wide range of substrates.

With Hummink's direct additive HPCaP process, the entire manufacturing cycle, from design to finished part, takes only a few minutes. It relies on direct, maskless deposition followed by local laser sintering.

This targeted deposition process reduces material and chemical consumption. In terms of yield, the ability to repair defects also minimizes the number of parts that need to be scrapped.



Close-up of the BIRD printing head during a deposition step. © Hummink

Pilot line now underway in Asia

BIRD is currently in **pilot line** at a **major semiconductor and display manufacturer in Asia**. This marks the module's first deployment in an advanced manufacturing environment, where defect repair and the reduction of yield losses are key priorities.

Meet Hummink at SEMICON Europa 2026

The Hummink team will unveil the BIRD module from **November 10 to 13** at SEMICON Europa 2026, at Messe München, **Hall C1, Booth 1370**.

About Hummink

Hummink is the exclusive developer and supplier of High Precision Capillary Printing (HPCaP), a patented technology enabling micron-scale material deposition for advanced electronics manufacturing. From R&D to production lines, our integrated solution combines printing systems, intelligent software, and proprietary inks.

Already adopted by leading industrial and research organizations across Europe, Asia, and the US, HPCaP enables next-generation manufacturing and repair applications in displays, semiconductors, and advanced packaging.

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