

Design

Draw

Demonstrate

Electronics is now **3D**

Represents:

monobee



**Monobee** from Beespenser accelerates R&D across a wide range of applications from solid PCBs up to 10 cm thickness to custom 3D electronics, with precise dispensing capabilities. It supports the micro dispensing of liquids, integration of batteries and capacitors, and enables the development of bio-sensors, RFID/NFC tags, and more empowering innovation with unmatched speed and flexibility.

Solid &  
Flexible  
Electronics

Sensor  
Applications

Wearable  
Electronics

RFID/NFC  
Tags

Liquid  
Dispensing

Batteries and  
Capacitors

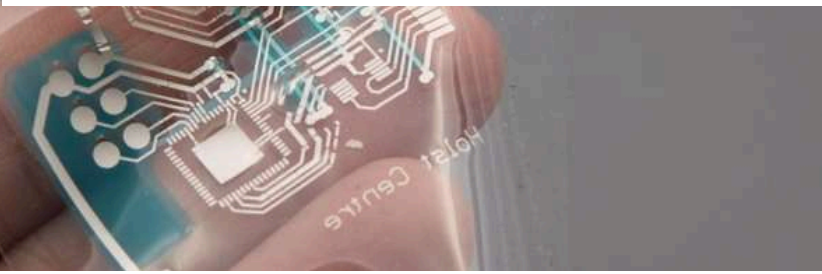
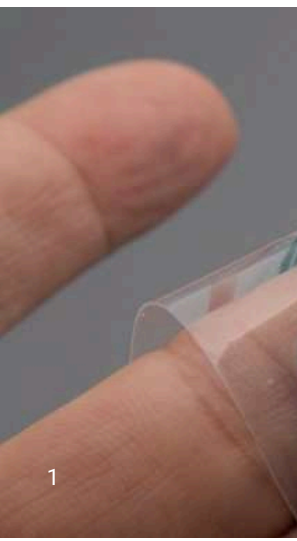
Fast  
Prototyping

Open Defect  
Reparing


Application Areas

## The Next Generation of Speed and Flexibility in Electronics Prototyping


Monobee is equipped with a high-precision direct ink writing (DIW) head, enabling the creation of multilayered rigid and flexible circuits on substrates like FR-4, Kapton, PET or any custom surface of your choice. Its all in one design streamlines the process by combining conductive adhesive dispensing and curing in a single device replacing traditional solder paste and eliminating the need for additional equipment. Each project is produced confidentially, ensuring your designs stay secure.



## Your All in One Solution for Research and Prototyping





Dispensing Probe designed for precise, controlled dispensing of conductive inks, adhesives, and similar materials, ensuring smooth and accurate application.



Calibration Probe provides accurate height measurements across surfaces of varying elevations. By precisely detecting height differences, it enables seamless PCB printing on uneven or multi layered surfaces even on challenging substrates, making it

Heating bed plays a crucial role in ensuring the optimal performance of conductive inks and solder pastes during the printing process. By gently heating the surface, it facilitates the curing of the ink and solder, promoting stronger adhesion to the substrate without cracks or deformities.

Drilling probe is designed to facilitate clean and precise hole formation, enabling reliable electrical connections between layers especially for dip components.

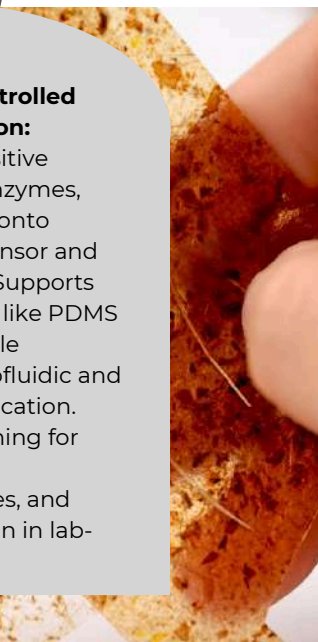
# LIMITLESS APPLICATIONS

for different types of usage areas

1

## **Breakthroughs in Controlled Bio-Material Application:**

Accurately applies sensitive biomaterials such as enzymes, proteins, and peptides onto surfaces, ideal for biosensor and biochip development. Supports deposition of materials like PDMS and other biocompatible polymers used in microfluidic and biomedical device fabrication. Enables precise patterning for biosensor prototypes, microchannel structures, and surface functionalization in lab-on-a-chip applications.



2

## **Surface Coatings Made Simple**

Supports the preparation and testing of hydrophobic or superhydrophobic surfaces and allows you to apply conformal coatings directly over your printed patterns to improve reliability.



3

## **Precision in Every Drop: Nanoparticle-Based Ink Application**

Enables controlled application of conductive, semiconductive, or optical materials for high-resolution circuit designs with micro-scale precision, allowing researchers to develop complex interconnections effortlessly.



4

### Revolutionizing Solar Cell Prototyping

Simplifies the preparation of solar cell prototypes, providing a cost-effective solution for lab-scale performance testing.

5

### Prototyping Advanced Materials

Achieve high repeatability and precision when working with polymer, composite, or hybrid material formulations. Critical for testing new formulations in electronic products to ensure reliability and performance.

## S O F T W A R E



Seamlessly control your printing process with Beespenser's user friendly interface. Designed for precision and simplicity, our software enables effortless production from material selection to curing, making it easy to create complex, double sided circuits, with exceptional accuracy.

## W H Y M O N O B E E ?

**All-in-One Solution:** Combines material dispensing and curing in a single device for a seamless workflow.

**Innovative Versatility:** Supports a wide range of research fields, electronics to biomedical sciences.

**Material Flexibility:** Ensures even distribution across various substrates like FR-4, Kapton, PET and custom surfaces.







## Where Precision Meets Possibility: Revolutionizing Electronics with Monobee

Imagine a world where every idea no matter how intricate or bold can be realized with precision. Monobee combines advanced dispensing technology with innovative features like multi-material compatibility, heated beds for flawless adhesion, and micro-scale accuracy. From flexible wearables to 10 cm solid PCBs, Monobee turns technical challenges into seamless creations.

**Trace widths as fine as 0.2 mm**  
**FR-4, PET, TPU, and more**  
**Drilling, heating, and dispensing in one device**

Resolution 

Precision & Accuracy 

Custom Inks &  
Flexible Substrates 

## Technical Specifications

### PRINT

Minimum Trace Width	0.2 mm
Minimum Passive Component Size	1005
Minimum Distance Between Pins	0.4 mm
Volumetric Resistivity	7.5 $\mu\Omega$ *cm
Provided Substrate Material	FR4, PET, TPU
Maximum Board Thickness	10 mm
Maximum Heated Bed Temperature	200°C

### DRILLING

Maximum Spindle Speed	12.000 RPM
Operating Voltage	24 V
Nozzle Diameter	3.175 mm
Material	Tungsten
Tip Set Diameter	0.2-3 mm

### DIMENSIONS

Weight	19 kg
Dimension(L × W × H)	59x53x38 cm
Maximum Printing Area	22x22 cm

### SOFTWARE REQUIREMENTS

Windows Operating System Type	Windows, macOS
Compatible File Format	Gerber X2, Gerber X3
Compatible File Connection	USB



beespenser  
draw the future

## Our Supporters



Manufacturing

Co-funded by the  
European Union



SABANCI

Arf  
ALMOST  
READY  
TO FLY



TÜBİTAK

SPIN | SU|NUM



TÜRKİYE  
KALKINMA  
FONU

ITUARI  
TEKNOKENT

BRIGHTER  
TOGETHER


For Different Applications

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