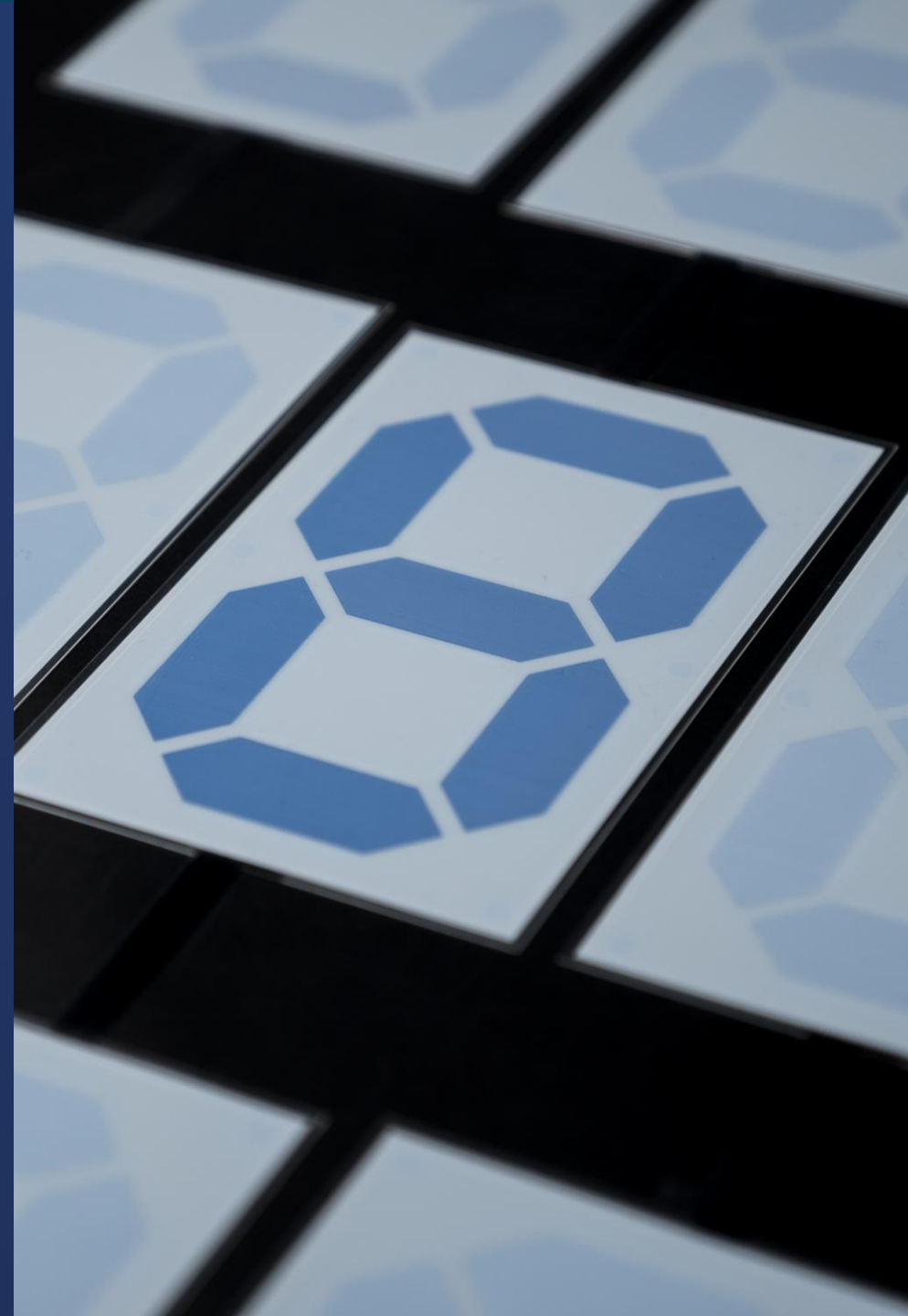


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# Printed E-paper Displays

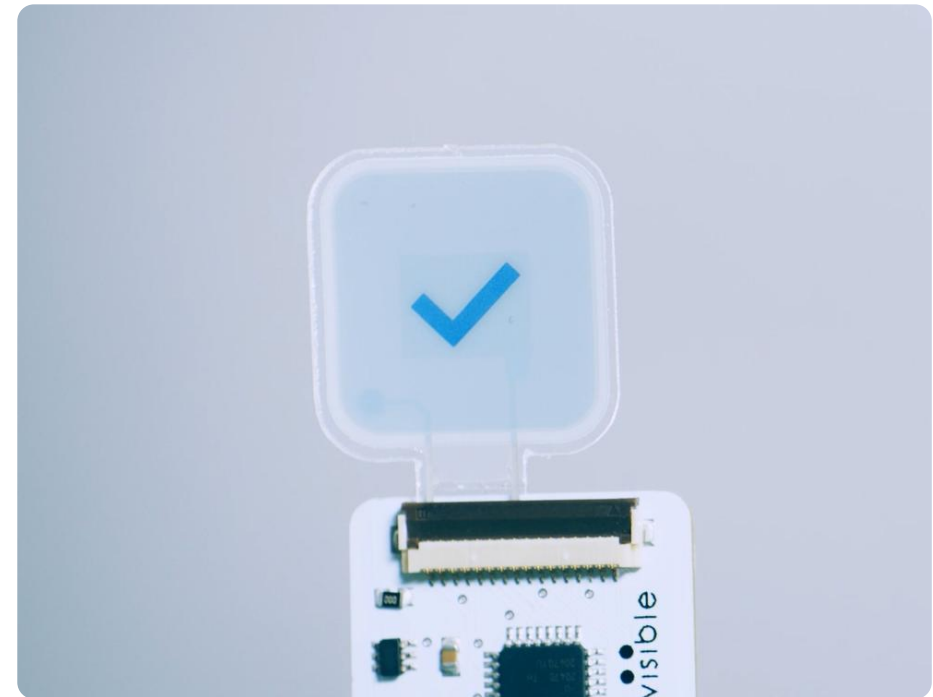
Innovation and Applications Revolutionizing Display Technology



**Printed** e-paper displays  
Printed Electronics Technology

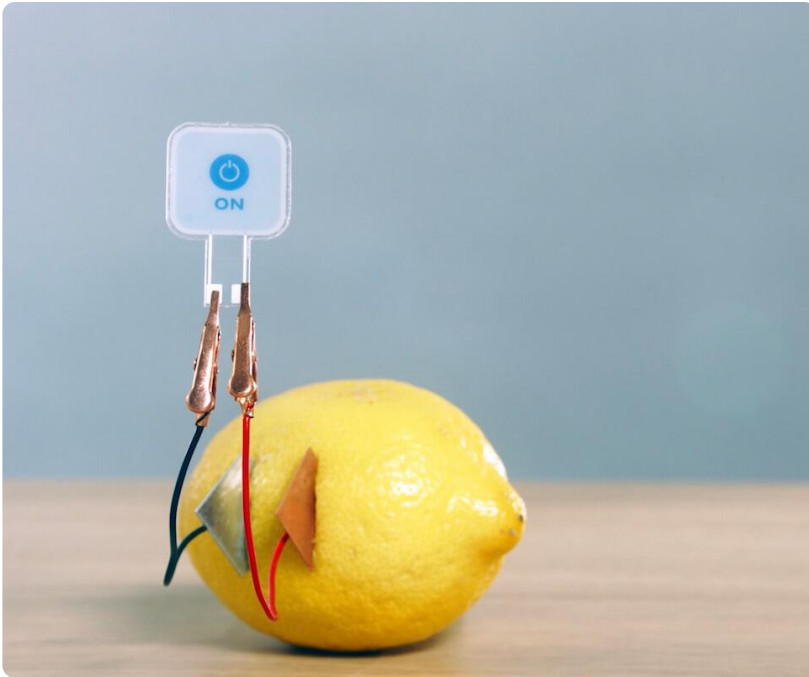
We produce **ultra-low-power printed e-paper displays** tailored to your needs.

Experts in printed electronics and manufacturers of customized displays based on innovative electrochromic technology.



# Printed e-paper displays

## Low-Power Technology



## Most energy-efficient printed displays on the market

Ideal display for battery-driven or battery-less IoT devices.



### Low-Power < 1 $\mu\text{W}/\text{cm}^2$

Ideal for battery-driven or battery-less IoT devices. It's the nanowatt era.



### Bistable Image Memory

Doesn't require constant power to keep the display on.



### Low Voltage 1.5V - 3V

Operated at lower voltages. Ideal for power sensitive applications.

# Printed e-paper displays

Thin & Flexible Technology

## Thin & flexible with endless design freedom

Experiment with different shapes, forms, and colors.



### Thin

< 300  $\mu\text{m}$

Micron thin displays fit for a wide range of wearables and other products.



### Flexible

10 mm radius

Highly flexible displays fit for a wide range of applications.



### Customizable

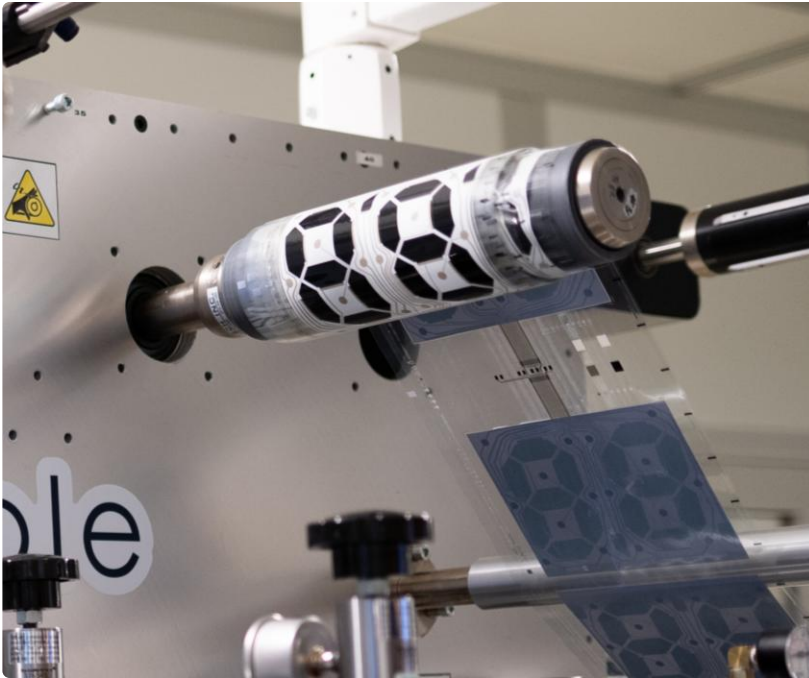
Colours & shapes

Letters, symbols, numbers, and graphic elements are all possible.



# Printed e-paper displays

Cost-effective Technology



## Cost-effective production and integration

Use Ynvisible's e-paper to reduce system and component cost



### Cost Savings Competitive Pricing

Roll-to-roll screen-printing means ultra-low-cost mass production.



### Easy to Drive No extra Components

Direct drive from the IC to each display contact/segment.



### Easy to Integrate ZIF, ACF or Glue

Versatile technology that provides different possibilities for assembly.

# Printed e-paper displays

Sustainable Technology

## Eco-friendly & sustainable e-paper display solution

Additive manufacturing process with low carbon footprint.



### Less E-Waste

#### Low metal usage

Low metal consumption compared to other display technologies.



### Non-Toxic

#### No toxic materials

No toxic and rare earth materials used in manufacturing.



### Sustainable

#### Unlike static paper

E-paper suitable for multiple times usage applications.



## Printed e-paper displays

Ynvisible Technology



The most **cost effective**,  
**energy efficient**  
and **customizable**  
electronic displays!



The logo for 'ynvisible' features the word in a lowercase, sans-serif font. Above the 'i' and 's' are two small white dots, positioned as if they are the eyes of a face.

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# Innovative Technology

From Idea to Mass Production





# Manufacturing Process

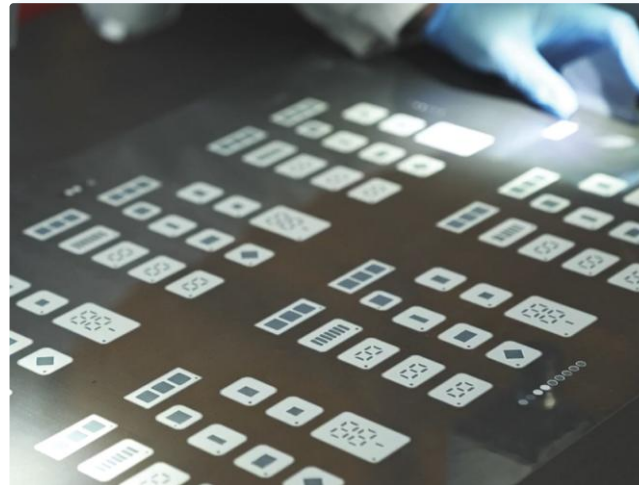
From idea to mass production



## Prototyping

Sample Production

Rapid and cost-effective prototype production with your customized display design



## Sheet to Sheet

Low Volume Manufacturing

Production suitable for low volumes and pilot runs for verification and validation.



## Roll to Roll

High Volume Manufacturing

Mass production of printed displays and contract manufacturing services

# Sheet to Sheet Production

Rapid and Cost-effective Displays with Your Design



## Prototyping

From sketch to delivery in a few weeks with your specific display design.



Fixed fee of **3.500 EUR** for customized display prototypes



## Low Volume

Suitable to produce low volumes between 1000 and 5000 units.



## Design Support

We help you throughout the entire design process



# Volume Production

Displays Mass Production & Printed Electronics Manufacturing Services



## Printing

Versatile printing and coating equipment.



Cost effective production for **customized display solutions**



## Conversion

Slitting, cutting and lamination capacities.



## Quality Assurance

Automated production with electrical and optical testing.





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# Industry Applications

Key Case Studies





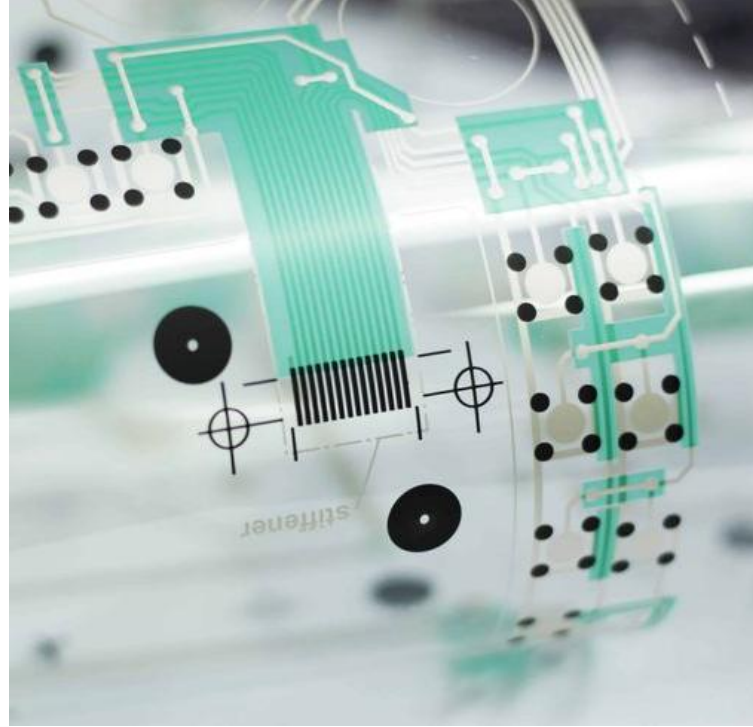
# Market Drivers for E-Paper

Market Insight and Opportunities Identification



## Sustainability

Bringing positive change



## Printed Electronics

Breaking the cost model



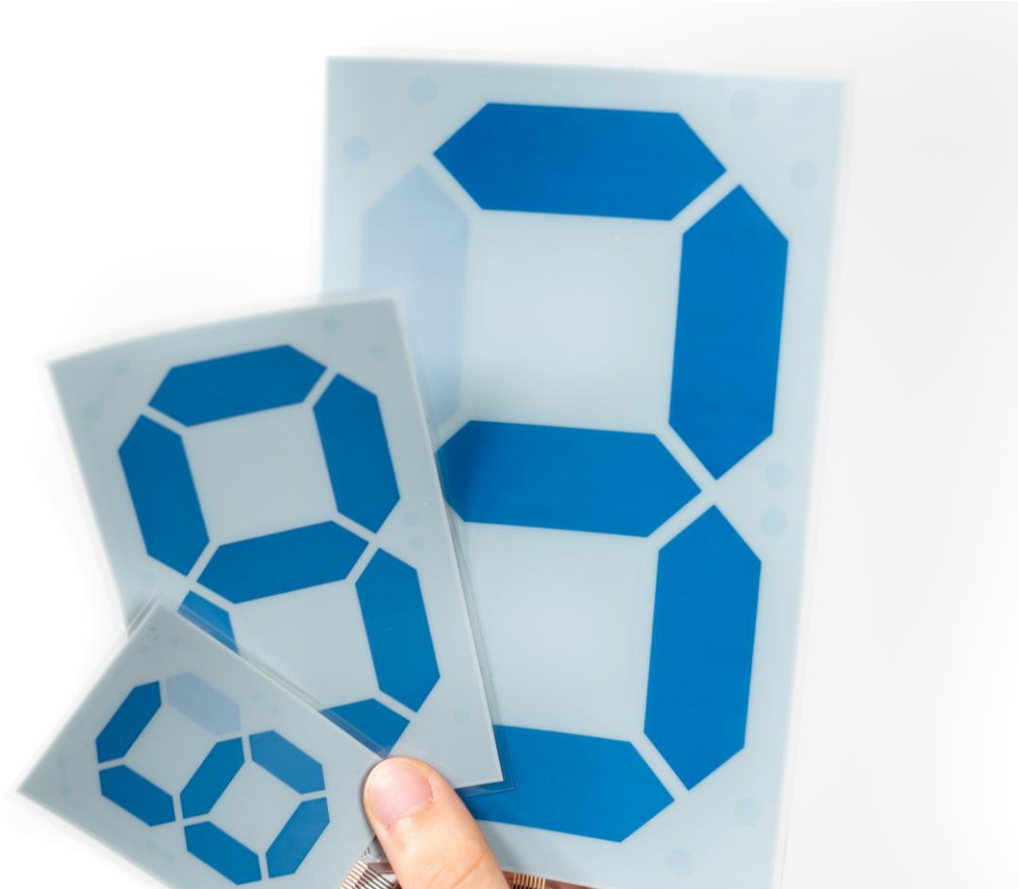
## Digitization

Bridging the digital and physical worlds



## Printed **E-paper** vs LCD

The Most Sustainable Display Technology



Ynvisible E-  
paper Displays  
are the **Most  
Sustainable  
Display Option**

**-200X**CO<sub>2</sub>

Carbon Footprint

*\* Preliminary Findings*

# Segment Markets for E-Paper

Target Market Segments

## Retail



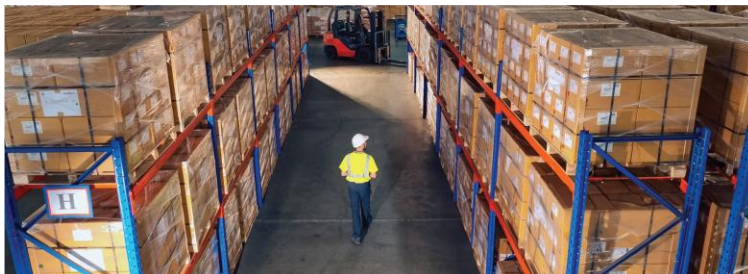
## Healthcare



## Industrial



## Supply Chain & Logistics



Markets that  
we **currently  
serve** with  
**custom display  
solutions!**



# Battery Powered Digital Signs

Dynamic Daily Prices





# Home Medical Test Indicators

Visual feedback of test results



# Indicators for Hygiene Solutions

Intuitive feedback on battery life and sanitizer readiness and use



# Industrial Maintenance Indicators

Visual indication of equipment's maintenance needs and timings





# Smart Labels

Dynamic expiration dates for clinical trials



# Smart Labels

Visual feedback for temperature alarms and product status



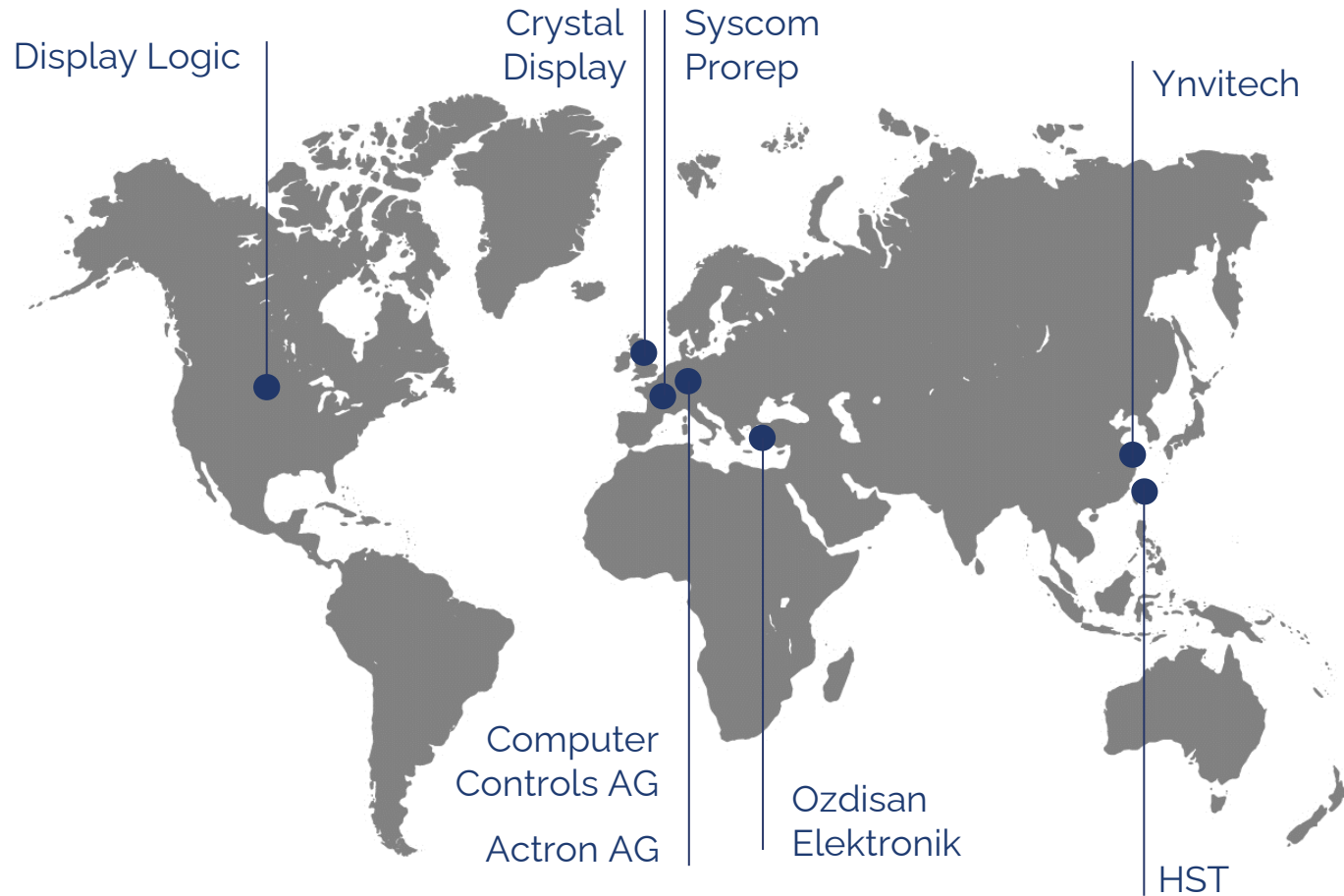


# Pharma Supply Chain Labels

Visual feedback for temperature alarms and product status

# Ynvisible

Distribution Network and Market Reach

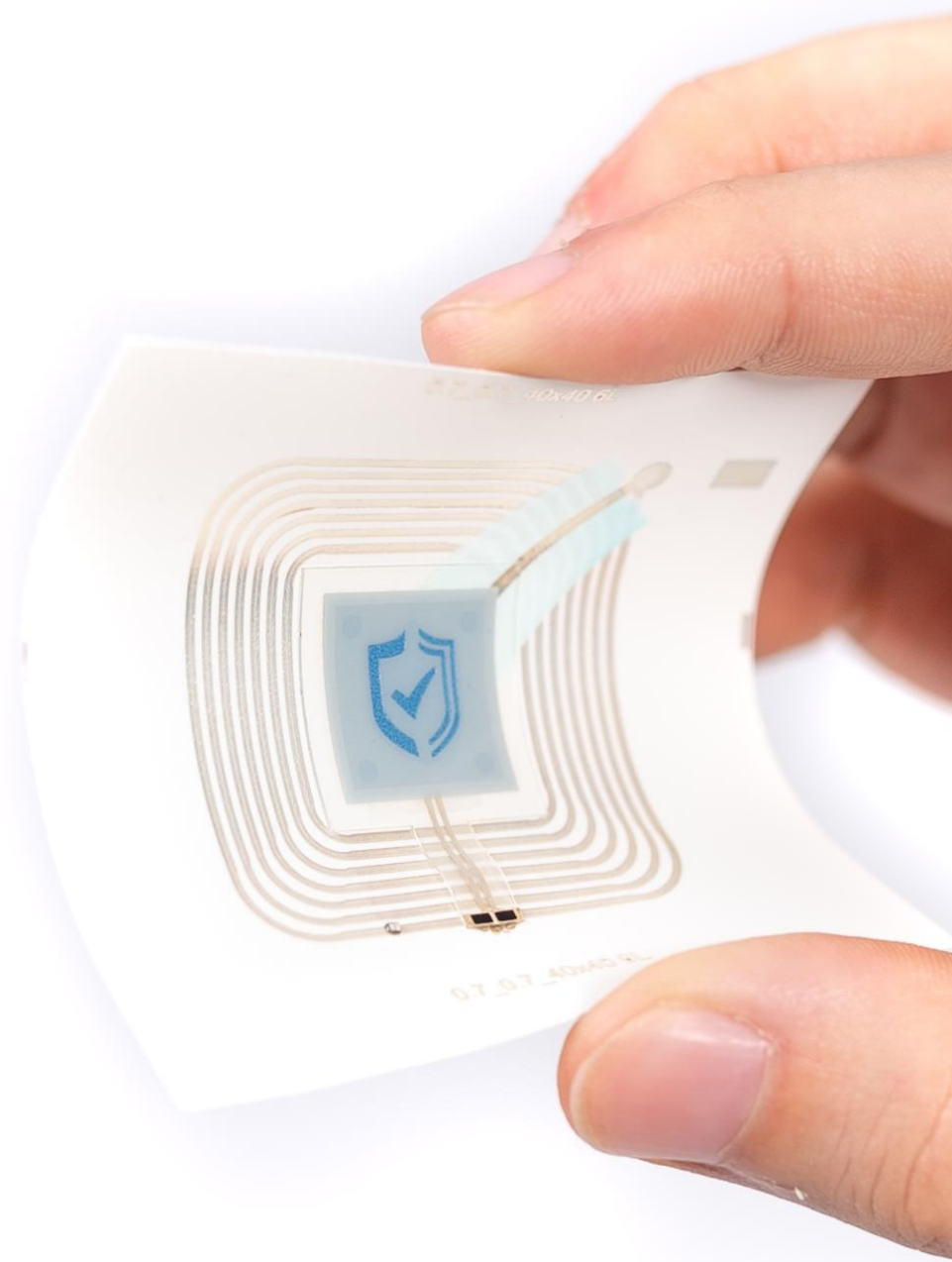


We **commercialize printed e-paper products** using a global distribution network!

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# Future Trends

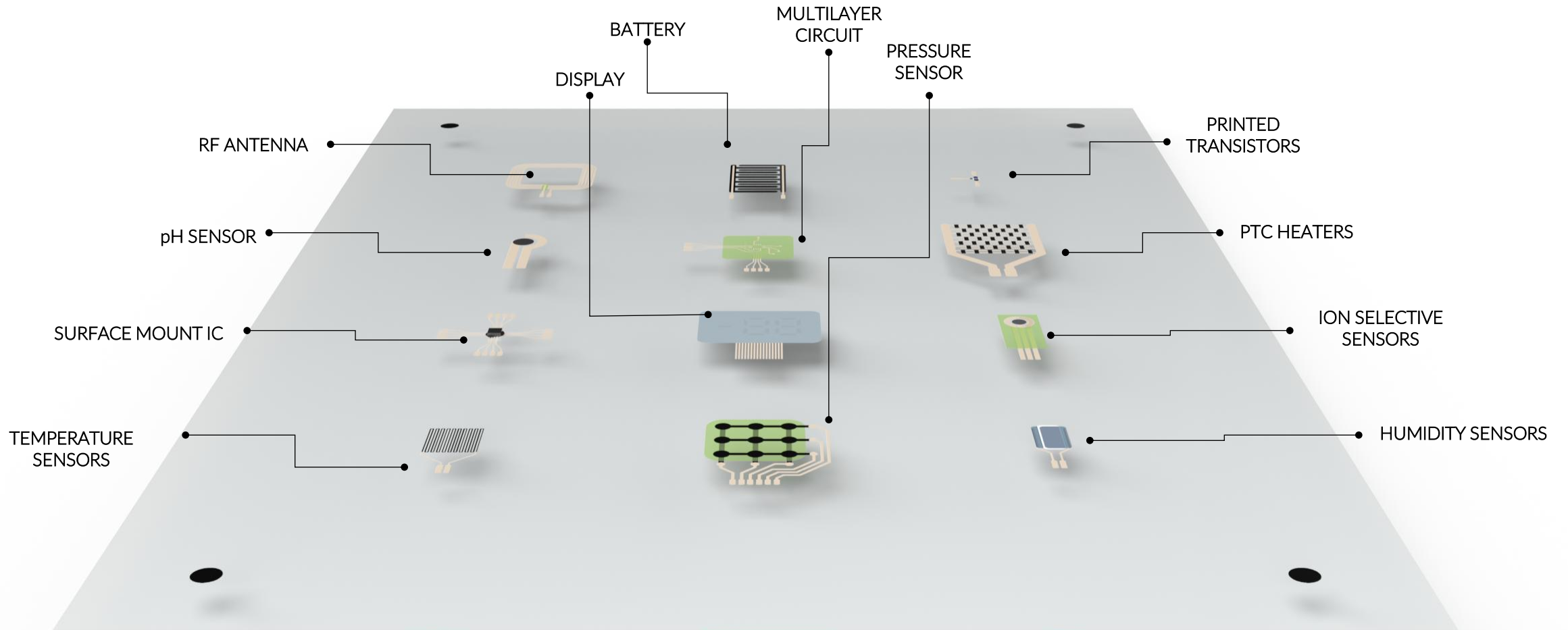
Next Generation Applications





# Printed Electronics Modularity

Sensing, Communicating, Powering, Computing







# Retail Price Tags

Self powered price tags for apparel



# Intelligent Wearable Patches

Visual feedback for wound care management



# Thank You!

**Ynvisible**

Printed E-paper Displays

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