Fingerprint Scanning Display

Summary

Profile type
Business Offer

Company's country
Germany

POD reference
BODE20250829013

Profile status
PUBLISHED

Type of partnership
Commercial agreement
Investment agreement
Supplier agreement

Targeted countries
• World

Contact Person
Enrico FRANZIN

Term of validity
29 Aug 2025
29 Aug 2026

Last update
29 Aug 2025

General Information

Short summary

A German company has developed a novel fingerprint scanning display that has the unique feature to scan the fingerprints on any place of the entire surface of the display. This enables scanning of up to 4 fingers at once, with a security level up to almost 100%. The company is looking for a cooperation partner and/or distribution partner to support it in marketing its innovative technology.

Full description

Conventional fingerprint recognition systems typically rely on capacitive or optical surface sensors to capture the characteristic features of a fingertip. These signals are then compared with stored fingerprint data of authorised users, allowing access if a match is found. However, existing systems face limitations: they are often vulnerable to forgery attempts, such as the use of severed fingers or replicas made from films and moulds, and they restrict scanning to a specific sensor area.

A German company has developed a patented fingerprint recognition display that overcomes these challenges. The technology enables fingerprint scanning across the entire surface of a display, making it possible to capture and verify up to four fingerprints simultaneously. This allows a significant increase in security—approaching 100%—while also improving usability. For instance, in collaborative work environments with large displays, each user can log in with personal permissions, and the system can combine access rights dynamically, depending on the group of users

present.

The core innovation lies in the use of fibre optic strands integrated into the display surface. These strands transmit infrared light from an embedded light source to the fingertip and back to a photosensor in a reflected-light process. Since human skin has a higher refractive index than air, the system detects variations in reflection depending on whether a fingerprint ridge or valley is present. This principle not only ensures highly accurate fingerprint recognition but also makes the surface resistant to scratches and wear, ensuring long-term reliability.

Beyond biometric applications, the technology offers multifunctional benefits. The same optical principle enables the display to act as a scanner for documents, business cards, or tickets. On larger displays, this eliminates the need for external scanners and provides geometrically precise scans. The system also facilitates data exchange between mobile devices by simply placing two screens together. Moreover, integrated infrared scanning allows the detection of counterfeit documents and banknotes, further extending its security applications.

This versatile fingerprint scanning display can be integrated into a wide range of products, including biometric security systems, document scanners, secure communication devices, and even health monitoring solutions.

Advantages and innovations

1. Full-surface and multi-finger recognition

This technology allows fingerprint capture across the entire display surface. Up to four fingerprints can be scanned simultaneously, enabling a security level close to 100% and facilitating collaborative use cases where several users log in with individual access rights.

2. Fibre-optic architecture – robust and reliable

The use of fibre strands integrated into the display allows infrared light to be transmitted and reflected according to the refractive index of human skin. This results in highly accurate recognition, resistant to scratches and wear. In comparison with conventional optical sensors, the fibre-based system maintains measurement accuracy even under demanding conditions.

3. Extended functionality beyond biometrics

The system transforms the display into a multifunctional scanning platform. It can:

a) Perform document and business card scanning directly on the screen, removing the need for separate scanners.
b) Enable secure data exchange between mobile devices by placing their displays together.
c) Detect counterfeit documents and banknotes using infrared scanning.
d) This integration of biometric authentication with document management and security applications clearly differentiates it from existing single-purpose solutions.

4. Advanced anti-spoofing capability

By leveraging reflection-based optical properties within the fibre structure, the display technology increases resilience against such forgery attempts, offering a strong anti-spoofing potential comparable to or exceeding that of multispectral or ultrasonic approaches.

5. Enhanced usability in collaborative environments

The technology allows a natural and intuitive interaction. Multiple users can authenticate simultaneously, with the system dynamically combining their access rights. This flexibility offers a clear advantage for shared workstations, large interactive displays, and secure communication environments.

Technical specification or expertise sought

Stage of development

Already on the market

Sustainable Development goals

- **Goal 17: Partnerships to achieve the Goal**
- **Goal 3: Good Health and Well-being**
- **Goal 9: Industry, Innovation and Infrastructure**

IPR Status

IPR granted

IPR Notes

Partner Sought

Expected role of the partner

The company is seeking international partners to support the further development, manufacturing and commercialisation of its fingerprint scanning display technology. Different forms of cooperation are envisaged depending on the expertise of the partner:

1. Manufacturing Partners

Manufacturing partners are expected to:

• Possess expertise in the production of advanced display technologies and biometric components.
• Have access to suitable production facilities, ideally with experience in integrating fibre-optic or optical sensor technologies.
• Ensure compliance with international quality and safety standards (e.g. ISO, CE, FCC).
• Contribute to scaling up production from prototype to industrial volumes.
• Ideally have experience in OEM/ODM manufacturing for consumer electronics, security devices, or interactive displays.

2. Marketing and Commercialization Partners

Marketing-oriented partners should:

• Support the promotion of the technology within their respective markets.
• Develop marketing campaigns targeting sectors such as consumer electronics, secure communication, banking, or healthcare.
• Possess knowledge of regulatory requirements and certification needs in their region.
• Have established contacts with technology integrators, innovation hubs, or government security agencies.
• Provide feedback on market trends and customer requirements to adapt the technology to specific use cases.

3. Distribution Partners

Distribution partners are sought to:

• Facilitate access to international markets and ensure broad adoption of the technology.
• Maintain an established sales network in relevant industries (e.g. mobile devices, display manufacturers, security solutions, digital health).
• Offer after-sales support and customer service for integration projects.
• Strengthen brand visibility and recognition in both B2B and B2C markets.

• Act as strategic multipliers by introducing the technology to key industrial players and large-volume customers.

Type of partnership

Commercial agreement

Investment agreement

Supplier agreement

Type and size of the partner

• SME <=10

• Big company

• SME 11-49

• Other

• SME 50 - 249

Dissemination

Technology keywords

• 05003002 - Optics

• 01003012 - Imaging, Image Processing, Pattern Recognition

• 01003009 - Data Protection, Storage, Cryptography, Security

• 01002009 - Peripherals Technologies (Mass Data Storage, Displays)

• 01002008 - Optical Networks and Systems

Market keywords

• 02006004 - Data processing, analysis and input services

• 03006 - Fibre Optics

• 01001004 - Other commercial communications

• 03008004 - Other electronics related (including alarm systems)

• 02004004 - Other scanning related (incl. image processing, ...)

Targeted countries

• World

Sector groups involved

Media

PDF documents

ScanDisplayPrincipleEN.pdf
0

Fingerprint_Scanning_Display_2025_EEN.pdf
0