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# Optical Fingerprint Sensor Market Research Report - Global Forecast to 2032

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## Description:

### Global Optical Fingerprint Sensor Market Overview:

The Optical Fingerprint Sensor Market size was valued at USD 2.00 Billion in 2022. The optical fingerprint sensor industry is projected to grow from USD 2.24 Billion in 2023 to USD 5.55 Billion by 2032, exhibiting a compound annual growth rate (CAGR) of 12.00% during the forecast period (2023 - 2032). Growing proliferation and penetration of consumer electronics, the rise in demand for biometric authentication in government facilities, growth in several identity threats, and the emergence of touchless fingerprint technologies are the key market drivers enhancing the market growth.

Global Optical Fingerprint Sensor Market Overview

Source: Secondary Research, Primary Research, MRFR Database and Analyst Review

### Optical Fingerprint Sensor Market Trends

- **The extensive usage of fingerprint sensors in consumer electronic devices drives market growth.**

Market CAGR for optical fingerprint sensors is driven by the rising adoption of biometric systems in enterprises, which has accelerated the demand for fingerprint sensors. Tracking the time and attendance of employees has become easy with the implementation of biometric technology-based time and attendance registering systems. Fingerprint technology-based systems are easy to use and install. These systems help the management to track and analyze employee data. One of the biggest advantages of these systems is their ability to prevent employees from logging in for one another. Earlier, the methods such as a time clock, sign-in sheet, and ID card swiping were used to capture time and attendance, which were vulnerable to forgery, but the use of fingerprint sensors has drastically reduced fraud in attendance systems. The advent of technology has not only permitted fingerprint systems to capture data, but they can also be integrated into payroll and various software to calculate employee productivity, work hours, and salary based on attendance, among others. Several companies, including private and government companies, have deployed fingerprint sensors to capture attendance. Fingerprint sensors help in tracking employee time and attendance, as well as enhancing the security of the workplace. People not registered with the organization cannot enter the office premises as the fingerprint system blocks their entry.

Moreover, the increased smartphone adoption of in-display fingerprint sensors drives the Optical Fingerprint Sensor Market revenue. In-display fingerprint technology is utilized in many of today's top-of-the-line phones as it has a wide area to scan a finger, which gives the customer the best experience. The in-display fingerprint sensor operates with both wet and dry fingers, and its optical sensor is very light and does not take up much space in a phone. Also, the in-display fingerprint carries a shorter time than other fingerprint sensors to look at a finger. So, these benefits allow fingerprint sensors to be built into smartphone screens. With such usage of in-display fingerprint sensors, the market is said to enhance more with time, which is why continuous research and developments are going on in the fingerprint sensor market, creating huge opportunities for recent start-ups and manufacturers of such sensors.

Moreover, technological improvement in fingerprint sensor technologies and the development of advanced and innovative products, such as biometric payment cards, are other factors driving market revenue growth. Biometric payment cards are the same as debit or credit cards but are ultra-thin and built with a low-power optical fingerprint sensor. While using this card, consumers requirement to use their fingerprint instead of a PIN. Moreover, manufacturers are deploying advanced technologies to cope with increasing market demand. For instance, in May 2022, Fingerprint Cards AB registered 500 patents globally for its biometric sensor technology. The firm has also enhanced its portfolio beyond capacitive biometrics sensors to an optical fingerprint sensor with angled mirrors implanted in an active part of a display and touchless solutions.

### Optical Fingerprint Sensor Market Segment Insights:

## Optical Fingerprint Sensor Component Insights

The Optical Fingerprint Sensor Market segmentation, based on components, includes a photodiode, charged coupled device (CCD), CMOS optical imagers, cover plate, and lens. The CMOS optical imagers segment dominated the market, accounting for 35% of market revenue (0.78 Billion). In developing economies, category growth is driven by higher pixel counts and enhanced sensitivity. CMOS image sensor technology advancements have led to the development of smaller, more efficient, and low-power image sensors. However, the lens is the fastest-growing category due to growing technological improvements.

## Optical Fingerprint Sensor Technology Insights

The Optical Fingerprint Sensor Market segmentation, based on technology, includes electro-optical imaging and multi-spectral imaging. The electro-optical imaging category generated the most income (70.4%). This is due to the rising deployment of UAVs in various applications, including military surveillance. However, multi-spectral imaging is the fastest-growing category due to technological advancements, such as sensor design, high spectral resolution, and high spatial resolution.

**Figure 1: Optical Fingerprint Sensor Market, by Technology, 2022 & 2032 (USD Billion)**

Optical Fingerprint Sensor Market, by Technology, 2022 & 2032

Source: Secondary Research, Primary Research, MRFR Database and Analyst Review

## Optical Fingerprint Sensor Application Insights

The Optical Fingerprint Sensor Market segmentation, based on application, includes consumer electronics {mobile/tablets/laptop}, military & defense, banking & finance, telecom operators, government agencies, healthcare, smart homes, and commercial security. The consumer electronics {mobile/tablets/laptop} category generated the most income as optical fingerprint sensors in smartphones increase the privacy and security of the devices and are much harder to fake. However, government agencies are the fastest-growing category as governments of numerous countries are highly adopting biometrics sensors to enhance the security of their residents.

## Optical Fingerprint Sensor Regional Insights

By region, the study provides market insights into North America, Europe, Asia-Pacific and the Rest of the World. The North American optical fingerprint sensor market will dominate owing to advancements in fingerprint sensor technologies, and the presence of key market players will boost the market growth in this region. Further, the US optical fingerprint sensor market held the largest market share, and the Canadian optical fingerprint sensor market was the fastest-growing market in the North American region.

Further, the major countries studied in the market report are The US, Canada, Germany, France, the UK, Italy, Spain, China, Japan, India, Australia, South Korea, and Brazil.

**Figure 2: Optical Fingerprint Sensor Market SHARE BY REGION 2022 (USD Billion)**

Optical Fingerprint Sensor Market SHARE BY REGION 2022

Source: Secondary Research, Primary Research, MRFR Database and Analyst Review

Europe's optical fingerprint sensor market accounts for the second-largest market share owing to advancements in fingerprint sensor technologies and the presence of key market players in this region. Further, the German optical fingerprint sensor market held the largest market share, and the UK optical fingerprint sensor market was the fastest-growing market in the European region.

The Asia-Pacific optical fingerprint sensor market is expected to grow at the fastest CAGR from 2023 to 2032. This is due to rising applications of fingerprint sensors for law enforcement drives the market growth in this region. Moreover, China's optical fingerprint sensor market held the largest market share, and the Indian optical fingerprint sensor market was the fastest-growing market in the Asia-Pacific region.

## Optical Fingerprint Sensor Key Market Players & Competitive Insights

Leading market players are investing heavily in research and development to expand their product lines, which will help the optical fingerprint sensor market grow even more. Market participants are also undertaking multiple strategic activities to expand their global footprint, with important market developments including new product launches, contractual agreements, mergers and acquisitions, higher investments, and collaboration with other organizations. To expand and survive in a more competitive and rising market climate, the optical fingerprint sensor industry must offer cost-effective items.

Manufacturing locally to minimize operational costs is one of the key business tactics manufacturers use in the global optical fingerprint sensor industry to benefit clients and increase the market sector. Major players in the optical fingerprint sensor market, including Goodix (China), Fingerprint Cards AB (Sweden), Synaptics (US), Apple Inc. (US), Egis Technology (Taiwan), and others, are attempting to increase market demand by investing in research and development operations.

Qualcomm Inc designs and develops wireless telecommunication products and services. The firm offers integrated circuits and system software for mobile devices and other wireless products. Its product offerings include radio frequency transceivers, consumer wireless devices, cellular modems, application processors, power management and wireless connectivity integrated circuits. The company's products find applications in mobile devices, laptops, tablets, cellular handsets, cameras, servers, wireless devices and network infrastructure equipment, routers, access points, wearable devices, voice and music devices, gateway equipment, consumer electronic devices, desktop computers, and IoT devices. In January 2021, Qualcomm

launched the second-generation in-display fingerprint sensor. The 3DSonic Gen 2 offers a larger surface area for the sensor and faster processing. The product is 50% faster and 77% larger than the first-generation sensor.

Vivo is a technology company that offers telecommunications solutions. The company's cell plan includes prepaid and postpaid such as mobile and TV plans. The company services comprise recharge, connectivity, fiberoptic solution, broadband, payment solution, 4g, 5g and 4.5g, among others. It also provides a combo of TV and cell, internet and mobile plan, and home and mobile pack. The company also allows the user to buy gadgets online. It also provides live channels and subscription and recording of digital content services. The company provides mobile apps for both Android and iOS users. In January 2022, The Vivo launched IQOO 9 Pro, the first smartphone to include Qualcomm's 3D Sonic Max ultrasonic fingerprint reader, and it is powered by the brand-new Snapdragon 8 Gen 1 processor. The IQOO 9 Pro's Qualcomm 3D Sonic Max enables a lightning-fast fingerprint enrollment process with just one tap. Once the user's fingerprint is registered, it unlocks the phone in just 0.2 seconds.

### **Key Companies in the Optical Fingerprint Sensor market include**

- Goodix (China)
- Fingerprint Cards AB (Sweden)
- Synaptics (US)
- Apple Inc. (US)
- Egis Technology (Taiwan)
- Crucialtec (South Korea)
- Next Biometrics (Norway)
- Novatek Microelectronics (Taiwan)
- Qualcomm Technologies, Inc. (US)
- Q Technology (China).
- CMOS Sensor Inc. (US)
- ELAN Microelectronics (Taiwan)

### **Optical Fingerprint Sensor Industry Developments**

**June 2022:** Lance Carter Gooden, the representative of the U.S. for Texas, launched a bill that suggested the Department of Homeland Security (DHS) take biometric information, including the DNA of emigrants, to break down fraud and child trafficking.

### **Optical Fingerprint Sensor Market Segmentation:**

### **Optical Fingerprint Sensor Component Outlook**

- Photo Diode
- Charged Coupled Device (CCD)

- CMOS Optical Imagers
- Cover Plate
- Lens

## **Optical Fingerprint Sensor Technology Outlook**

- Electro-Optical Imaging
- Multi-Spectral Imaging

## **Optical Fingerprint Sensor Application Outlook**

- Consumer Electronics (Mobile/Tablets/Laptop)
- Military & Defense
- Banking & Finance
- Telecom Operators
- Government Agencies
- Healthcare
- Smart Homes
- Commercial Security

## **Optical Fingerprint Sensor Regional Outlook**

- North America
  - US
  - Canada
- Europe
  - Germany
  - France

- - UK
  - Italy
  - Spain
  - Rest of Europe
- - Asia-Pacific
    - China
    - Japan
    - India
    - Australia
    - South Korea
    - Australia
    - Rest of Asia-Pacific
- - Rest of the World
    - Middle East
    - Africa
    - Latin America

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