The information and statistics set out in this section and other sections of this document were extracted from different official government publications, available sources from public market research and other sources from independent suppliers, and from the independent industry report prepared by China Insights Consultancy Limited ("CIC"). We engaged CIC to prepare an independent industry report in connection with the [**REDACTED**] *(the "CIC Report"). The information from official government sources has not been independently verified by us, the Joint Sponsors,* [**REDACTED**]*, any of the* [**REDACTED**]*, any of their respective directors, supervisors, and advisors, or any other persons or parties involved in the* [**REDACTED**]*, and no representation is given as to its accuracy.*

OVERVIEW OF THE GLOBAL ANALOG INTEGRATED CIRCUIT (IC) MARKET

Analog ICs are ICs that process continuous real-world signals, such as light, sound, current and temperature, and convert them into usable electrical signals for electronic systems. The analog IC market comprises a wide range of product categories with significantly different technical requirements, application scenarios and functional characteristics. Among these, intelligent sensing ICs, machine vision sensors and intelligent imaging ICs represent distinct application-driven sub-segments. According to CIC, the global analog IC market reached US$86.5 billion in 2025, and is expected to grow to US$111.3 billion in 2030, representing a CAGR of 6.1% from 2026 to 2030. In terms of revenue, intelligent sensing ICs, machine vision sensors and intelligent imaging ICs accounted for 13.4%, 1.9% and 0.9%, respectively, of the global analog ICs market in 2025, and are expected to reach 12.9%, 1.7% and 1.2%, respectively, by 2030. The decline in the expected share of intelligent sensing ICs and machine vision sensors is mainly attributable to the faster growth of enterprise and industrial applications within the broader analog IC market.

OVERVIEW OF THE GLOBAL INTELLIGENT SENSING IC MARKET

The core development trends of smart devices over the past decade have been diversification and intelligence. According to CIC, global smart device shipments reached 4.2 billion in 2025 and are projected to grow to 5.1 billion by 2030, representing a CAGR of 5.8% from 2026 to 2030. Sensing capabilities are critical to smart devices, which bridge the gap between digital and physical worlds. They help smart devices understand their environment, dynamically optimize and respond based on the information acquired, and enable autonomous decision-making and learning.

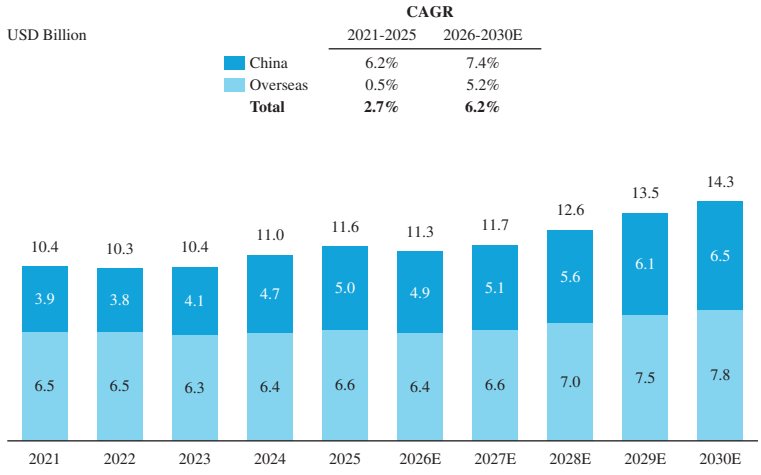
Intelligent sensing ICs are used in smart devices to collect and provide feedback on various types of environmental information, serving as the foundation of their sensing capabilities. With the rapid development of smart devices, intelligent sensing ICs are evolving from auxiliary components into indispensable core modules. Intelligent sensing ICs cover a broad range of sensing functions, including optical sensors, smart audio amplifier ICs, LRA driver ICs, microphone ICs, haptic sensors, biometric and health sensors, accelerometers, gyroscopes, barometers, Hall sensors, temperature and humidity sensors, among many others. These sub-segments differ significantly in their technical requirements, application scenarios and underlying technology architectures. In practical deployment, a single smart device typically integrates multiple types of intelligent sensing ICs to enable various functions, including display management, presence detection and illumination control, speaker output, tactile feedback, voice assistants and speech recognition, as well as health monitoring, navigation and environmental detection.

According to CIC, the market size of global intelligent sensing ICs is US$11.6 billion in 2025, and is expected to grow to US$14.3 billion in 2030. China as one of the largest markets in the global intelligent sensing IC market, accounting for approximately 40% of the global market in terms of revenue in 2025.

Within the global intelligent sensing IC market, optical sensors, smart audio amplifier ICs, and LRA driver ICs account for approximately 9%, 8% and 2% respectively in terms of revenue in 2025.

According to CIC, a trend toward domestic substitution has emerged in China's semiconductor industry, particularly in consumer electronics applications such as smartphones, tablets, and wearable devices. This trend is primarily attributable to several factors. First, technological maturity and performance parity have improved significantly. Domestic chip manufacturers, including the Company, have achieved technological benchmarking with international peers through continuous R&D investment and process innovation. As domestic analog chips demonstrate comparable performance and reliability to international alternatives, downstream customers have become more willing to adopt domestic solutions. Second, domestic suppliers offer superior cost-performance ratios. Through process optimization, economies of scale, and supply chain integration, domestic chip manufacturers have achieved competitive pricing while maintaining product quality. This cost advantage is particularly attractive to price-sensitive consumer electronics manufacturers in China's highly competitive market. Third, domestic suppliers provide faster service response and greater customization capabilities. Proximity to downstream customers enables domestic chip manufacturers to respond more quickly to technical support requests, design modifications, and new product development requirements. This local service advantage is particularly valuable in the fast-moving consumer electronics sector, where time-to-market is critical. Fourth, supply chain resilience and diversification have become increasingly important considerations. Downstream customers seek to reduce concentration risk by diversifying their supplier base to include both domestic and international sources. For example, in smartphones of domestic brands, the proportion of optical sensors supplied by Chinese vendors increased from approximately 40% in 2023 to approximately 65% in 2025. Fifth, supportive government policies have encouraged adoption of domestic semiconductors. China's national and local government initiatives to develop the domestic semiconductor industry have created a favorable environment for domestic chip manufacturers to expand market share.

Market Size of Global Intelligent Sensing ICs, in terms of Revenue, 2021-2030E



Source: Gartner, Omdia, Yole, CIC

Note: The 2026 market decline is mainly due to the expected short-term shrinkage in shipments of smart devices such as smartphones, tablets and laptops, caused by rising storage prices.

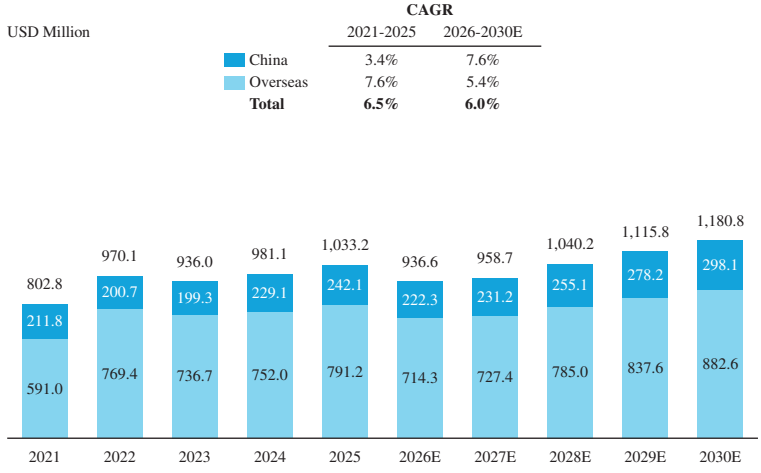
Overview of the Global Optical Sensor Market

Optical sensors are ICs that detect light. They are one of the foundational components in smart devices for functions such as display management, presence detection, and scene recognition. As interactive intelligence continues to evolve, optical sensors have become a critical sensing unit in smart devices that enhance user experience and enable device adjustments. They support a more comfortable visual experience by assisting display brightness and color tone automatic adjustment, preventing accidental touches, and thus help improving user convenience and device interaction efficiency, as well as saving energy.

Optical sensors primarily include (i) light sensors, which detect ambient light intensity to enable automatic screen brightness and color adjustment; (ii) proximity sensors, which determine the presence or distance of objects through infrared reflection or time-of-flight (ToF) technology and are commonly used for presence detection and in-ear sensing; and (iii) all-in-one optical sensors, which integrate ambient light and proximity sensing functions to support display management and proximity-based activation in smart devices.

According to CIC, the global optical sensor market size in terms of revenue is expected to grow from US$1,033.2 million in 2025 to US $1,180.8 million in 2030, at a CAGR of 6.0% from 2026 to 2030. Smart devices such as smartphones, TWS and tablets represent the major downstream application scenarios for optical sensors, accounting for 65%, 14%, and 8% of the global optical sensor market in 2025 respectively, and such proportions are expected to remain broadly stable as of 2030.

Market Size of Global Optical Sensor, in terms of Revenue, 2021-2030E



Source: Gartner, Omdia, Yole, CIC

Due to the high concentration of end customers for optical sensors, such as smartphone, tablet, smart watches and TWS earbuds companies, the global optical sensor market exhibits a relatively concentrated competitive landscape, with over 50 players globally. The top four players collectively held 85.0% of the global market share in terms of revenue in 2025, respectively. Among them, we were the fourth largest optical sensor company globally and the largest in China in terms of revenue, with a market share of 3.7%.

Competitive Landscape of the Global Optical Sensor Market, in terms of Revenue, 2025

Ranking	Company	Region	Revenue, USD million	Market Share, %
1	Company A	Austria	~590	57.1%
2	Company B	Switzerland	~140	13.5%
3	Company C	Taiwan	~110	10.6%
4	**Our Company**	**China**	**38**	**3.7%**

Source: Interviews with industry experts, annual reports, CIC

Notes:

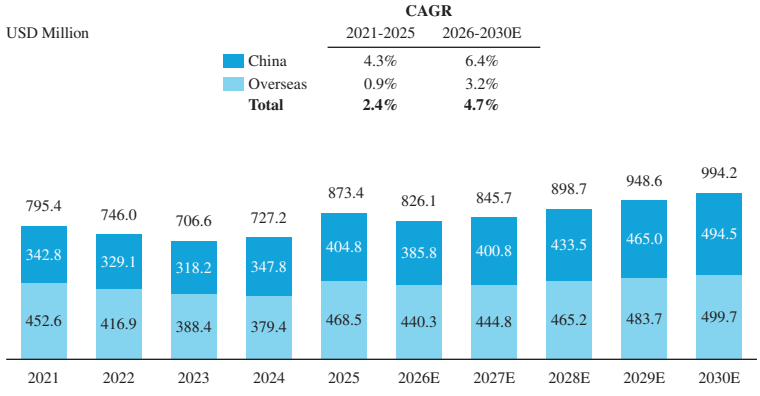
1. Company A is a sensor solutions company founded in Austria in 1981. It mainly provides optical sensors and analog IC solutions for consumer electronics, automotive, and industrial applications. It is a listed company on the SIX Swiss Exchange.
2. Company B is a multinational semiconductor company founded in Switzerland in 1987. It mainly provides microcontrollers, power devices, sensors, and analog ICs. It is a listed company on the Euronext Paris, Borsa Italiana, and New York Stock Exchange.
3. Company C is a fabless semiconductor company founded in Taiwan in 2009. It mainly provides optical sensors and MEMS sensors. It is a listed company on the Taipei Exchange.

Overview of the Global Smart Audio Amplifier IC Market

Smart audio amplifier ICs are used to drive speakers in a variety of smart devices, such as smartphones, tablets, laptops, TWS earbuds, TVs, smart speakers, among others. They amplify low-power audio signals to a level sufficient to drive a load, such as a speaker unit, enabling the acoustic unit to produce an adequate sound pressure level so that users can hear the sound clearly. As consumer demands for sound performance continue to increase, the number of smart audio amplifier ICs installed in a single device is also rising, a trend that enhances the device's maximum volume, stereo field performance, and immersive listening experience. In the future, with the popularization of scenarios like voice interaction and smart assistants, the number of new smart devices with sound interaction capabilities will continue to grow, further driving demand for smart audio amplifier ICs.

According to CIC, the market size of global smart audio amplifier ICs in terms of revenue is expected to grow from US$873.4 million in 2025 to US$994.2 million in 2030, at a CAGR of 4.7% from 2026 to 2030. Smart devices such as smartphones, tablets and laptops represent the major downstream application scenarios for smart audio amplifier ICs, accounting for 55%, 14%, and 12% of the global smart audio amplifier IC market in 2025 respectively, and such proportions are expected to remain broadly stable as of 2030.

Market Size of Global Smart Audio Amplifier ICs, in terms of Revenue, 2021-2030E



Source: Gartner, Omdia, Yole, CIC

The downstream application scenarios for smart audio amplifier ICs are diversified, with over 100 players globally. The top three players collectively held 48.5% of the global smart audio amplifier IC market share in terms of revenue in 2025. Among them, we were the third largest smart audio amplifier IC company globally and the second largest in China, with a market share of 6.1% in terms of revenue.

Competitive Landscape of the Global Smart Audio Amplifier IC Market, in terms of Revenue, 2025

Ranking	Company	Region	Revenue, USD million	Market Share, %
1	Company D	U.S.	~300	34.3%
2	Company E	China	~70	8.0%
3	**Our Company**	**China**	**54**	**6.1%**

Source: Interviews with industry experts, annual reports, CIC

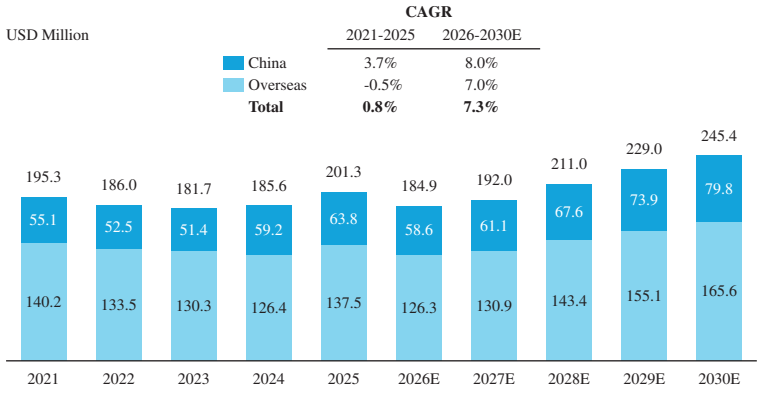
Notes:
1. Company D is a fabless semiconductor company founded in the United States in 1981. It mainly provides low-power products including boosted amplifiers, haptic driver and sensing solutions, power conversion and control ICs, and fast-charging ICs. It is a listed company on NASDAQ.
2. Company E is a fabless semiconductor company founded in China in 2008. It mainly provides mixed-signal ICs, power management ICs and signal chain ICs. It is a listed company on the Shanghai Stock Exchange.

Overview of the Global LRA Driver IC Market

With the widespread application of smart devices in interactive scenarios such as gaming and virtual reality, users have higher expectations for the immersiveness of their interactive experience. LRA driver ICs, are dedicated to driving LRAs to provide subtle haptic feedback. It has become an important choice for smart device manufacturers to provide a differentiated haptic experience for consumers, and some are exploring the deployment of multiple LRA driver ICs and LRAs in different areas and layouts inside a smart device, in order to provide consumers with a much richer and more delicate haptic experience.

In the future, LRA driver ICs are expected to expand the addressable market from high-end flagship smartphones and game controllers to entry-level smartphones, TWS earbuds, smartwatches, AR/VR headsets and controllers, and even drone controllers controls. According to CIC, the market size of global LRA driver ICs in terms of revenue is expected to grow from US$201.3 million in 2024 to US$245.4 million in 2030, at a CAGR of 7.3% from 2026 to 2030. Smart devices such as smartphones, tablets and game consoles represent the major downstream application scenarios for LRA Driver ICs, accounting for 80%, 9%, and 5% of the global LRA Driver IC market in 2025 respectively, and are expected to represent 74%, 9%, and 8% by 2030.

Market Size of Global LRA Driver ICs, in terms of Revenue, 2021-2030E



Source: Gartner, Omdia, Yole, CIC

The global LRA driver IC market is relatively concentrated, with over 50 players globally and the top three players collectively holding 93.2% of the market share in terms of revenue and in 2025, respectively. Among them, we were the third largest LRA driver IC company globally and the second largest in China, with a market share of 3.8% in terms of revenue.

Competitive Landscape of the Global LRA Driver IC Market, in terms of Revenue, 2025

Ranking	Company	Region	Revenue, USD million	Market Share, %
1	Company D	U.S.	~160	79.5%
2	Company E	China	~20	9.9%
3	**Our Company**	**China**	**8**	**3.8%**

Source: Interviews with industry experts, annual reports, CIC

Drivers of the Global Intelligent Sensing IC Market

Growing Demand for Intelligent User Interaction. Smart devices have become more deeply integrated into various application scenarios. Users' expectations for human-machine interaction are shifting from single functions to a comprehensive experience that is natural, smooth and seamless, where smart devices would respond in real time based on environmental and user status. This has led to a continuous rise in demand for multimodal and high-quality intelligent interaction.

Growing Demand from Smartphones. The continuous evolution of smartphones, particularly with the emergence of AI-enabled devices, is expected to support long-term growth in smartphone shipments. As smartphones increasingly integrate AI functionalities such as real-time interaction, on-device processing and context-aware services, there is a growing need for more advanced sensing capabilities. This has led to higher content value of intelligent sensing ICs per device, as well as the adoption of a broader range of sensing components to support functions such as display management, environmental perception, audio interaction and haptic feedback.

Favorable policies. Favorable government policies are an important driver of the global intelligence sensing IC market, with China providing a representative example given its role as one of the world's largest IC production and application hubs. In China, the "Action Plan for Metrology to Support the Development of New Quality Productive Forces in Industries (2025-2030)" advances core capabilities, such as wafer-level defect measurement, advanced-packaging reference materials, and atomic-scale metrology, to accelerate breakthroughs in IC process technologies. The "Notice of the State Council on Issuing the 14th Five-Year Plan for the Development of the Digital Economy" strengthens R&D in ICs, industrial software, core algorithms, and cloud-computing systems while enhancing supply-chain resilience across integrated circuit-related industries. The "Outline of the 14th Five-Year Plan for National Economic and Social Development of the People's Republic of China and the Long-Range Objectives Through the Year 2035" promotes innovation in advanced manufacturing clusters and prioritizes R&D in ICs, AI algorithms, sensors, and next-generation computing technologies.

Expansion into New Smart Devices. The rapid rise of new smart devices, such as AR/VR devices, service robots, AI glasses, and smart vehicle cockpits, has significantly broadened the application scope of intelligent sensing ICs. These devices are highly dependent on environment sensing and real-time response capabilities, driving the continuous iteration of intelligent sensing ICs in precision, algorithms and system integration. According to CIC, the shipment volume of new smart devices grew from approximately 34 million in 2021 to 50 million in 2025, with a CAGR of 10%, and is expected to reach 120 million by 2030, with a CAGR of 18%.

Technological Advancements. With continuous advancements in semiconductor manufacturing processes and hardware-software co-design capabilities, the performance of intelligent sensing ICs is continuously improving while production costs are gradually decreasing. The enhanced performance leads to higher driving precision and faster response speeds, while the reduction in production cost allows intelligent sensing ICs to expand from high-end products to mass-market products, further promoting their adoption in smart devices.

Entry Barriers of the Global Intelligent Sensing IC Market

R&D Capabilities. Intelligent sensing ICs have high requirements for IC design and circuit simulation capabilities. They need to rapidly innovate in emerging application scenarios while keeping up with the constant iteration of existing technologies. Leading players often have strong technology reserves, enabling them to quickly apply cutting-edge industry technologies and maintain their competitiveness.

Full-Stack Solution Capability. Intelligent sensing IC companies must possess not only the capability to design the underlying IC, but also system integration capabilities to provide an integrated solution that covers other components such as IC algorithms, driver software, and system tuning, among others.

Product Quality Control Capabilities. Intelligent sensing ICs are widely used in a variety of smart devices that are critical to daily modern life, which make the product quality and durability of paramount importance. Therefore, intelligent sensing IC companies must have a strict quality control system to ensure the stability and reliability of their ICs in various working environments, preventing quality issues from harming the customer's interests and brand reputation.

Mature and Controllable Supply Chain. Intelligent sensing IC companies need to balance performance and cost in IC design. For mid- to high-end smart devices in particular, there are strict requirements on the size, power consumption, and bill of material ("**BOM**") cost of intelligent sensing ICs, which is a test for such company's comprehensive supply chain management capabilities. Leading intelligent sensing IC companies can effectively control costs by optimizing design, improving production efficiency and increasing product yield, thereby ensuring price competitiveness while maintaining product quality.

Stable Customer Base. Smart device manufacturers usually have strict requirements for IC stability and validation, resulting in long certification cycles and strong customer stickiness. Once qualified, leading suppliers of intelligent sensing ICs further consolidate their positions by offering fast and accurate engineering responses and technical support, thereby deeply engaging with major downstream customers and gaining industry influence. New entrants to the industry often lack access to these top customers and need to go through a long validation period, making it difficult to achieve a competitive advantage.

RELATIONSHIP BETWEEN ANALOG ICS, MACHINE VISION SENSORS AND INTELLIGENT IMAGING ICS

The global intelligent sensing IC market constitutes a specialized, high-growth sub-segment of the analog IC industry. Within the analog IC market, machine vision sensors and intelligent imaging ICs represent two distinct but related functional verticals focused on optical capabilities:

- Machine vision sensor primarily utilizes a variety of sensing technologies, including 3D ToF sensors, structured light, and stereoscopic vision, to enable devices to perceive spatial environments and support functions such as object recognition, spatial mapping, and navigation.
- Intelligent imaging IC focuses on enhancing system performance and optimizing image quality through specialized analog ICs, including OIS drivers and flicker sensors, which operate at the front end of imaging systems to improve image clarity and reliability.

Therefore, both machine vision and intelligent imaging are categorized as specific, application-driven sub-segments within the global analog IC market, sharing underlying manufacturing processes and design methodologies with other analog sub-segments.

OVERVIEW OF THE GLOBAL MACHINE VISION MARKET

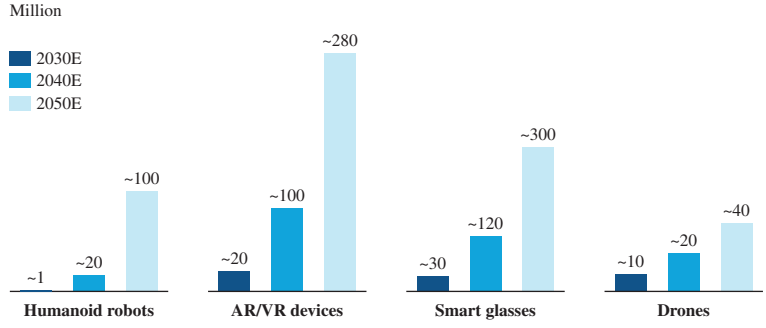
Machine vision refers to the capability of smart devices to capture, process, and interpret visual information from their environment to perform tasks such as object recognition, inspection, and navigation. Traditionally, machine vision has relied on 2D sensing technologies, which primarily capture flat image information, such as colors and contours but have inherent limitations in acquiring an object's spatial position, depth information, and dynamic environmental modeling.

In contrast, 3D machine vision enables smart devices to achieve higher-precision gesture recognition, motion tracking, positioning, and navigation services, significantly improving operational efficiency and interactive experience in complex environments. In response to growing demands for environmental adaptability and spatial understanding, this technology has become an important enabling capability for new types of smart devices such as AR/VR devices, smart robots, service drones, and autonomous driving systems.

Currently, the main 3D machine vision technologies include 3D ToF, 3D structured light, binocular stereo vision, and laser triangulation. The market size of global machine vision increased from US$1.4 billion in 2021 to US$1.6 billion in 2025, and is expected to reach US$1.9 billion in 2030, at a CAGR of 7.3% from 2026 to 2030. Meanwhile, China's machine vision market is expected to grow from US$219.8 million to US$430.1, with a CAGR of 7.3% from 2026 to 2030. Among these, the 3D ToF solution stands out due to its balance of precision, complex environment adaptability, high response speed and low system cost. Based on the signal processing method, 3D ToF technology can be further divided into dToF (direct Time-of-Flight) and iToF (indirect Time-of-Flight). The 3D iToF solution, with its high near-distance precision and low latency, is mainly used in consumer electronic like smartphones and tablets for photographic assistance and facial recognition.

The penetration of 3D ToF image sensors in mainstream consumer electronics, such as smartphones, tablets, and laptops, is expected to continue rising. Moreover, with continuous technological advancements and enhanced applicability, 3D ToF technology is expected to rapidly expand into a wide range of emerging smart devices, such as humanoid robots, AR/VR devices, smart glasses, and drones. These smart devices are experiencing rapid and large-scale adoption, as illustrated in the figure below.

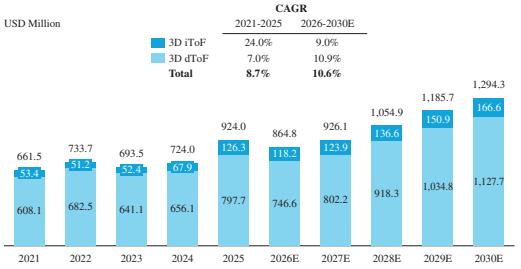
Global Emerging Smart Device Shipments, 2030e, 2040e, 2050e



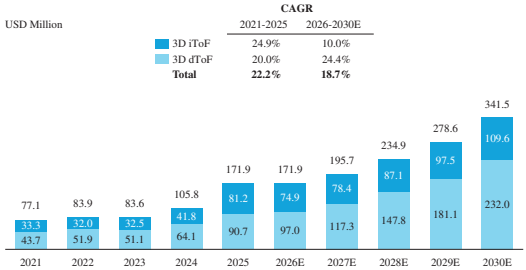
Source: IDC, Gartner, CIC

According to CIC, as 3D ToF image sensors play an increasingly important role in three-dimensional visual sensing tasks, the global 3D ToF image sensor market is expected to continue its growth. In 2025, the market size of global 3D ToF image sensors in terms of revenue is expected to grow from US$924 million in 2025 to US$1,294.4 million in 2030, at a CAGR of 10.6% from 2026 to 2030. Smart devices such as smartphones, smart vehicles and robot vacuums represent the major downstream application scenarios for 3D ToF image sensors, accounting for 86%, 4%, and 2% of the global 3D ToF image sensors market in 2025 respectively, and are expected to represent 74%, 7%, and 9% by 2030.

Market Size of Global 3D ToF Image Sensors, in terms of Revenue, 2021-2030E



Market Size of China's 3D ToF Image Sensors, in terms of Revenue, 2021-2030E



Source: Yole, CIC

Drivers of the Global 3D ToF Image Sensor Industry

3D Sensing as a Mainstream Solution. Compared to traditional 2D sensing, 3D sensing solutions offer stronger spatial awareness and depth analysis capabilities, providing more precise environmental modeling, object detection, and position recognition. With technological advancements and the evolution of smart wearables, 2D sensing can no longer meet the environmental sensing requirements of some high-precision, high-safety, and complex scenarios. This makes 3D sensing a key technology for natural human-machine interaction and intelligent upgrades. Among these, 3D ToF has shown greater application potential and better performance due to its strong ability to acquire depth information, good real-time performance, and strong environmental adaptability. For example, the penetration rate of 3D ToF Image sensor in smartphones has increased from approximately 9% in 2021 to 17% in 2025, and is expected to further grow to 23% by 2030.

Increasing Shipments of Emerging Smart Devices like Drones and Robots. With the expansion of application scenarios such as facial recognition, gesture interaction, spatial modeling, and AR, the rapid development of emerging smart devices like drones, service robots, and AR/VR devices is underway. For example, the shipments of service robots is expected to increase from less than 1 million units in 2030 to approximately 10 million units in 2040, and further to approximately 50 million units in 2050. 3D sensing is becoming one of the core technologies for improving interactivity and environmental understanding. For example, humanoid robots and drones have a rigid need for reliable depth data for indoor navigation, obstacle avoidance, and object recognition. 3D ToF technology, with its advantages in real-time, precise, and non-contact distance measurement, has become a mainstream depth sensing solution. The rapid growth of downstream applications is accelerating the demand for 3D ToF image sensors.

Technological Advancements and Cost Reduction. 3D ToF image sensors are continuously making breakthroughs in integration, manufacturing processes, and algorithm optimization, achieving smaller sizes, lower power consumption, higher precision, and stronger anti-interference capabilities. At the same time, as production scale expands and manufacturing processes mature, IC costs are continuously decreasing.

Competitive Landscape of the Global 3D ToF Image Sensor Industry

The global 3D ToF image sensor industry is relatively concentrated, with over 50 players globally and the top three players holding 86.6% of market share in terms of revenue. Among them, we were the third largest globally and was the largest 3D ToF image sensor company in China, with a market share of 1.1% in 2025 in terms of revenue.

Competitive Landscape of the Global 3D ToF Image Sensor Market, in terms of Revenue, 2025

Ranking	Company	Region	Revenue, USD million	Market Share, %
1	Company F	Japan	~760	82.3%
2	Company G	Germany	~30	3.2%
3	**Our Company**	**China**	**10**	**1.1%**

Source: Interviews with industry experts, annual reports, CIC

Notes:
1. Company F is a multinational conglomerate founded in Japan in 1946. It mainly provides consumer electronics, image sensors, semiconductors, entertainment products and services. It is a listed company on the Tokyo Stock Exchange and the New York Stock Exchange.
2. Company G is a semiconductor company founded in Germany in 1999. It mainly provides power semiconductors, automotive ICs, security ICs and industrial microcontrollers. It is a listed company on the Frankfurt Stock Exchange.

Meanwhile, in 2025, the company was the third largest globally and the largest in China among 3D iToF image sensor companies, holding a market share of 7.9% in terms of revenue.

Competitive Landscape of the Global 3D iToF Image Sensor Market, in terms of Revenue, 2025

Ranking	Company	Region	Revenue, USD million	Market Share, %
1	Company G	Germany	~30	~23.8%
2	Company F	Japan	~20	~15.8%
3	**Our Company**	**China**	**10**	**7.9%**

Source: Interviews with industry experts, annual reports, CIC

Entry Barriers of the Global 3D ToF Image Sensor Industry

Product Performance Optimization Capability. 3D ToF companies must possess strong technological expertise at both the device and system levels, continuously improving sensor sensitivity, reducing the power consumption, and optimizing algorithms to handle interference from multipath and strong ambient light. These efforts serve to enhance depth measurement accuracy, lighting robustness, frame rates, and reduce end-to-end latency. Leading players achieve competitive advantage and build market reputation by delivering reliable depth information in real-world scenarios through the coordinated optimization of hardware performance and algorithm capabilities.

Scenario-based Adaptability. As the adoption of 3D ToF technology in smart devices continues to accelerate, an increasing number of emerging smart devices are integrating 3D ToF image sensors. Players capable of offering differentiated product portfolios tailored to diverse smart device requirements are able to penetrate the market more quickly and secure a competitive edge. At the same time, these players can further strengthen their market position by rapidly responding to customized client needs through efficient product adaptation, on-site calibration, firmware iteration, and long-term maintenance services, thereby shortening customer integration cycles and enhancing overall satisfaction.

Customer Development and Service Capability. Given that downstream applications and customers of 3D ToF technology typically impose stringent requirements on product performance, validation and ongoing support, the stability and continuity of customer relationships are critical to business development. To address this, 3D ToF companies must establish a well-structured sales team to deliver systematic and professional pre-sales support, while also maintaining a comprehensive after-sales service system to promptly respond to client needs and effectively resolve product-related issues. By doing so, they can strengthen customer stickiness, reduce churn risks, and foster long-term partnerships, thereby supporting sustainable business growth.

OVERVIEW OF THE GLOBAL INTELLIGENT IMAGING IC MARKET

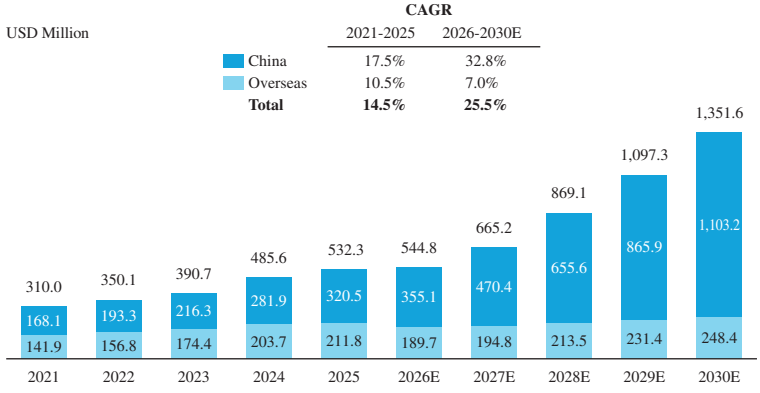
Driven by use cases such as social media sharing, short-form video creation, live streaming, remote work, and online education, expectations for image clarity, stability, and realism have steadily increased. Consequently, the capability to deliver high-quality visual content has become a key determinant of user experience and a differentiating factor in the competition among smart devices.

Within this evolution, intelligent imaging ICs, are increasingly deployed in imaging systems to support the capture, processing, or optimization of image quality. The ICs primarily include (i) OIS driver ICs, which control micro-motors to compensate for lens shake and enhance image stabilization; (ii) flicker sensors, which detect light flicker and assist exposure control to improve image stability; (iii) dToF ranging sensors, which measure subject distance to improve autofocus speed and accuracy; and (iv) multi-spectral sensors, which capture spectrum information to support white balance adjustment and color calibration.

At the same time, smart device manufacturers and their supply chain partners are accelerating the commercialization of emerging sensors such as dedicate imaging co-processor and photon counting imaging sensor, which not only broaden the avenues for smart device imaging optimization but also generate new momentum for market growth.

According to CIC, the market size of global intelligent imaging ICs in terms of revenue is expected to grow from US$532.3 million in 2025 to US$1,351.6 million in 2030, representing a CAGR of 25.5% from 2026 to 2030. Smartphones, drones and smart vehicles represent the major downstream application scenarios for intelligent imaging ICs, accounting for 91%, 1%, and 1% of the global intelligent imaging IC market in 2025 respectively, and are expected to represent 87%, 1%, and 3% by 2030.

Market Size of Global intelligent imaging ICs, in terms of Revenue, 2021-2030E



Source: Gartner, Omdia, CIC

Drivers for the Global Intelligent Imaging IC Industry

Rising Demand for High-quality Imaging. Requirements for image clarity, stability, and realism are rising across smart devices. Users now demand not only higher resolution and brightness but also precise autofocus, natural color reproduction, and smoother motion rendering, driving the broad adoption of intelligent imaging ICs.

Diversified Smart Device Scenarios. Intelligent imaging systems are expanding rapidly beyond traditional consumer electronics into emerging application areas such as action cameras, robotics, and AR/VR. These platforms demand advanced capabilities for dynamic capture, spatial understanding, and robust multimodal image fusion in complex environments, thereby accelerating functional and scalable innovations in intelligent imaging ICs.

Technological Innovation. Continuous advancements in process nodes, multi-rail power management, and AI algorithms are driving steady performance improvements in intelligent imaging ICs, with trends toward smaller form factors, lower power consumption, and higher integration. The new generation of ICs supports multifunctional collaboration and hardware — software synergy, enabling higher frame rates, lower power consumption, and more intelligent image processing and control, thus serving as a core foundation for next-generation devices.

Competitive Landscape of the Global Intelligent Imaging IC Market

The global intelligent imaging IC industry is relatively concentrated, with over 200 players globally and the top ten players accounting for 68.8% of market share. Among them, we were the eighth largest intelligent imaging IC company globally and ranked first in China, holding a 1.9% market share in terms of revenue in 2025.

Competitive Landscape of the Global Intelligent Imaging IC Market, in terms of Revenue, 2025

Ranking	Company	Region	Revenue, USD million	Market Share, %
1	Company H	Japan	~80	15.0%
2	Company I	Korea	~75	14.1%
3	Company A	Austria	~60	11.3%
4	Company D	U.S.	~60	11.3%
5	Company B	Switzerland	~30	5.6%
6	Company E	China	~20	3.8%
7	Company C	Taiwan	~20	3.8%
8	**Our company**	**China**	**10**	**1.9%**
9	Company J	Japan	~6	1.2%
10	Company K	Japan	~5	0.9%

Source: Interviews with industry experts, annual reports, CIC

Notes:

1. Company H is a sensing device company founded in 2003 in Japan. It mainly provides analog, digital and mixed-signal ICs. It is a subsidiary of a listed company on the Tokyo Stock Exchange.
2. Company I is a fabless semiconductor company founded in South Korea in 2006. It mainly provides ICs for image stabilization and auto focus control in smart devices. It is a listed company on KOSDAQ.
3. Company J is a semiconductor company founded in Japan in 1958. It mainly provides ICs, discrete semiconductors, and electronic components. It is a listed company on the Tokyo Stock Exchange.
4. Company K is a semiconductor company founded in Japan in 2010. It mainly provides microcontrollers, system-on-chips, and analog and power devices. It is a listed company on the Tokyo Stock Exchange.

Entry Barriers of the Global Intelligent Imaging IC Market

The intelligent imaging IC market is characterised by several key entry barriers, including (i) technological innovation and product upgrade capability, as continuous improvements in imaging quality require sustained R&D to support advanced functionalities; (ii) comprehensive product portfolio, as vendors need to offer integrated solutions across multiple imaging functions to meet system-level requirements; (iii) rapid response and customization capability, as diversified application scenarios require flexible design and tailored solutions to address specific customer needs; and (iv) ecosystem collaboration capability, as effective integration with image sensors, lenses and other components is critical to achieving optimal imaging performance.

THREATS AND CHALLENGES OF THE INTELLIGENT SENSING IC, 3D TOF IMAGE SENSOR, AND INTELLIGENT IMAGING IC MARKETS

Intensifying Technological Competition. These markets are characterized by rapid technological evolution. Continuous advances in algorithms, process technologies and system integration create constant pressure for market participants to maintain high levels of R&D investment to avoid technological obsolescence.

Supply Chain Volatility. These industries remain exposed to fluctuations in the semiconductor supply chain, including wafer capacity, packaging and testing bottlenecks, and potential price volatility. Such constraints may affect production stability and delivery schedules.

Dependence on Downstream Device Cycles. The market demand is closely linked to the shipment cycles of key smart devices. Slowdowns or structural shifts in major downstream categories (e.g., smartphones, tablets and smart wearables, among others) may directly impact market growth and product demand patterns.

Uncertain Consumer Adoption of Emerging Technologies. The penetration of 3D ToF sensors and intelligent imaging ICs in smart devices depends on end-users' willingness to adopt new functionalities, such as advanced spatial interaction, AR-related features or advanced color calibration. As many of these use cases are still emerging and relevant supporting technologies are still maturing, consumer adoption may progress more slowly than expected given potentially dissatisfying user experience, which could in turn affect smart device manufacturers' incentives to integrate such ICs on a large scale.

Cost Sensitivity in Consumer Electronics Applications. While 3D ToF enables advanced use cases such as biometric authentication and spatial interaction, price sensitivity in consumer electronics may limit the penetration of high-performance ToF modules unless costs continue to decline. Achieving both cost efficiency and high precision remains a key industry challenge.

COST AND PRICE TRENDS OF THE INTELLIGENT SENSING IC, 3D TOF IMAGE SENSOR, AND INTELLIGENT IMAGING IC MARKETS

The manufacturing process of intelligent sensing IC, 3D ToF image sensor and intelligent imaging IC primarily consists of (i) silicon wafer manufacturing, during which high-purity silicon is processed into wafers through crystal growing, ingot slicing, polishing and cleaning; (ii) wafer fabrication, which involves photolithography, etching, ion implantation, thin-film deposition and chemical mechanical polishing to form the circuit structures on silicon wafers; and (iii) packaging and testing, during which the fabricated wafers are diced, the dies are assembled, bonded and encapsulated, followed by wafer-level and final testing to ensure functionality, reliability and yield.

Silicon is the primary raw material used in manufacturing intelligent sensing ICs, 3D ToF image sensors and intelligent imaging ICs. According to CIC, the price of silicon experienced a price peak of over RMB50 thousand per ton in the second half of 2021 driven by tight supply and strong downstream demand, and has since trended steadily downward, reaching approximately RMB10 thousand per ton in the second half of 2025.

From 2020 to 2025, the average selling prices of intelligent sensing ICs, 3D ToF image sensors and intelligent imaging ICs each exhibited a gradual downward trend within each product generation. Such price declines were primarily driven by technological maturation, economies of scale as products moved into mass production, and the entry of subsequent generations into the market. Over the same period, the average selling prices of intelligent sensing ICs and 3D ToF image sensors both recorded an average annual decline of approximately 5% to 10%, while that of intelligent imaging ICs did approximately 10% to 15%.

SOURCE OF THE INDUSTRY INFORMATION

CIC was commissioned to conduct research, provide an analysis of, and to produce a report on the global intelligent sensing IC market, the global machine vision market, and the global intelligent imaging IC market and other related economic data, at a fee of approximately RMB880,000. The commissioned report has been prepared by CIC independent of the influence of the Company and other interested parties.

CIC undertook both primary and secondary research using a variety of resources. Primary research involved interviewing key industry experts and leading industry participants. Secondary research involved analyzing data from various publicly available data sources. The market projections in the commissioned report are based on the following key assumptions: (i) the overall global social, economic, and political environment is expected to maintain a stable trend during the forecast period; (ii) certain key industry drivers are likely to continue to drive market growth during the forecast period; and (iii) there is no extreme force majeure or unforeseen industry regulations in which the market may be affected either dramatically or fundamentally during the forecast period. Our Directors confirm that, after making reasonable enquiries, there is no material adverse change in the market information since the date of the CIC Report which may qualify, contradict or have an impact on the information in this section.