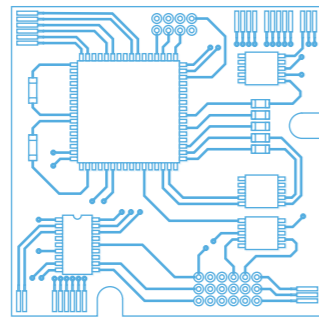
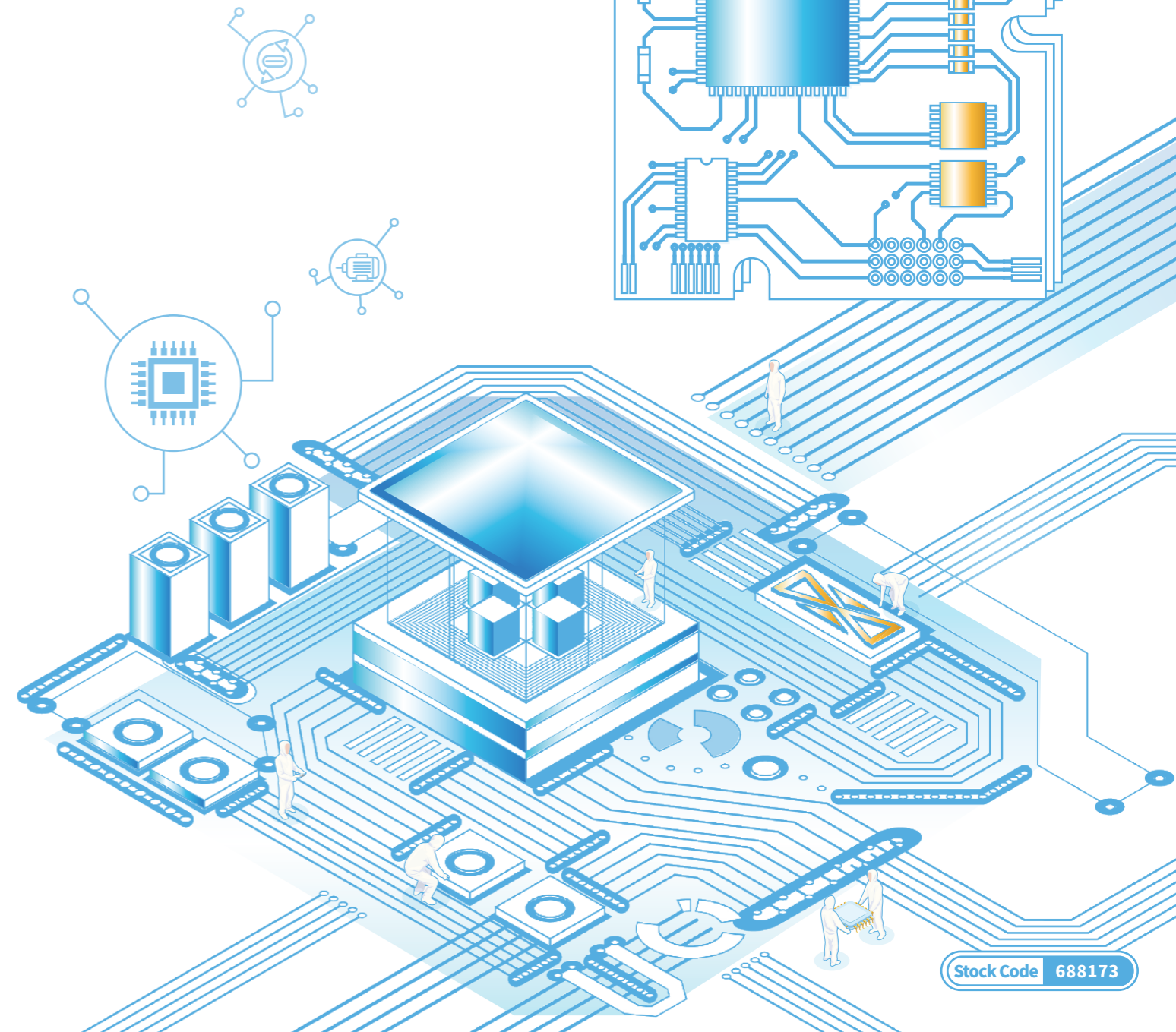
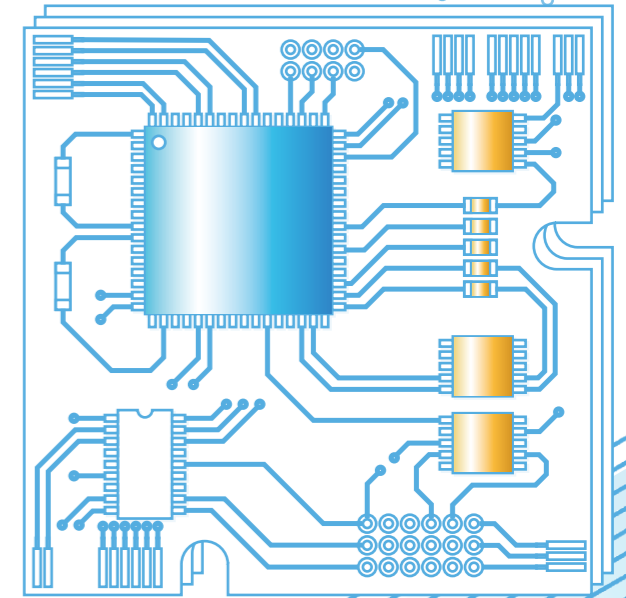
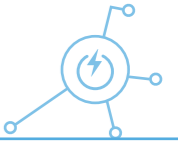


2023  
**Halo Microelectronics Co., Ltd.**  
ENVIRONMENTAL, SOCIAL  
AND GOVERNANCE REPORT



Halo Microelectronics Co., Ltd.

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-  Company e-mail: [ir@halomicro.com](mailto:ir@halomicro.com)
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# About This Report

This report presents the efforts and achievements of Halo Microelectronics Co., Ltd. (hereinafter referred to as "Halo Microelectronics", "the Company", or "We") in implementing the ESG (Environmental, Social, and Governance) principles in 2023, with the purpose to enhance communication and connections with stakeholders and to address their concerns and expectations.

## Reporting Period

The period covered by this report starts from January 1, 2023 to December 31, 2023. Some content extends beyond this scope.

## Reporting Scope

Unless otherwise indicated, this report is concerned with Halo Microelectronics and its wholly-owned subsidiaries.

## Names and Abbreviations

Abbreviation		Full Name
Halo Microelectronics/Company/We	Refers to	Halo Microelectronics Co., Ltd.
Halo Microelectronics (Beijing)	Refers to	Halo Microelectronics (Beijing) Co., Ltd.
MTK	Refers to	MediaTek Inc.
OPPO	Refers to	Guangdong Oppo Mobile Communication Co., Ltd.
Qualcomm	Refers to	Qualcomm Inc.
vivo	Refers to	vivo Mobile Communication Co., Ltd.
Samsung	Refers to	Samsung Electronics Co., Ltd.
Xiaomi	Refers to	Xiaomi Corporation
HONOR	Refers to	Honor Device Co., Ltd.
Transsion	Refers to	Shenzhen Transsion Holdings Co., Ltd.
Google	Refers to	Google Inc.
Logitech	Refers to	Logitech International SA

Abbreviation		Full Name
Audi	Refers to	Audi AG
Hyundai	Refers to	Hyundai Motor Company
Kia	Refers to	Kia Motors Corporation
XPENG	Refers to	XPeng Inc.
Hongqi	Refers to	A high-end vehicle brand of CHINA FAW GROUP CO., LTD.
AITO	Refers to	A new energy vehicle brand of Seres Group Co., Ltd.
Changan	Refers to	Chongqing Changan Automobile Co., Ltd.
Yura Tech	Refers to	YURA TECH. CO., LTD.
AEC-Q100	Refers to	Automotive Electronics Council–Qualification 100, developed by Automotive Electronics Council (AEC), is the verification standard of automotive specifications, the general standard of automotive electronic system, as well as the quality control standard for the reliability and standardization of automotive chips.
Boost	Refers to	One of the three basic topologies of the switching power supply. Boost circuit steps up the input voltage and generates an output average voltage that is greater than the input voltage.
DC/DC	Refers to	Direct Current / Direct Current. It is a technology and method to convert a source of direct current from one voltage level to another by stepping up or stepping down the voltage.
Fabless	Refers to	Fabrication-Less, the fabless integrated circuit business model, in which manufacturers focus on the R&D, design and sales of chips, while outsourcing the wafer fabrication, packaging and testing to other specialized manufacturers.
ppm	Refers to	Parts per million, used to measure the defective rate which means the number of defective units in one million units.
Type-C	Refers to	A type of USB interface. It is a reversible interface with thinner design, higher transfer rate and more powerful transmission.
super-fast charging	Refers to	One of the fast charging technologies, usually refers to such technologies that provide charging power greater than 30 W.
charge pump	Refers to	A kind of non-inductive DC/DC converter that uses capacitors for energy storage to raise or lower voltage and current.
port protection	Refers to	Provide protection against overpressure, overcurrent, overtemperature, surge, etc., for circuit connection ports, including the USB port.

Abbreviation		Full Name
packaging	Refers to	Process the semiconductor integrated circuit on the wafer into usable chips with carrier and pins through wires and various connection means for the purposes of placing, fixing, packaging and protecting chips, as well as enhancing its electrothermal performance.
integrated circuit or IC	Refers to	A device fabricated by integrating a large number of components of a circuit into a single crystal wafer.
wafer	Refers to	The silicon wafer used in the fabrication of integrated circuit. It can be fabricated into various circuit element structures after processing and turn into integrated circuit products with specific electric functions.
Li-ion battery fast charging	Refers to	A kind of fast charging technology based on lithium-ion batteries.
AF	Refers to	Auto Focus, a technology that automatically focuses by moving multiple lenses
OIS	Refers to	Optical Image Stabilization. To avoid or reduce the phenomenon of instrument jitter in the process of capturing optical signals through the setting of optical components in cameras or other similar imaging instruments, thereby improving imaging quality
Voice coil motor driver chip	Refers to	It is used inside the camera module to control the voice coil motor to achieve automatic focus function
Buck	Refers to	One of the three basic topologies of the switching power supply. Buck circuit steps down the input voltage and generates an output average voltage that is smaller than the input voltage.
Voice coil motor	Refers to	A type of linear DC motor, originally used in speakers to create vibration for sound production. Now it's utilized in devices to move lenses for auto focus.
Load switch chip	Refers to	A type of power management chip. The load switch is a space-saving integrated power switch. This type of chip includes functions like reverse current blocking, overcurrent protection, thermal shutdown, and automatic output discharge.
SIM card interface level shifting chip	Refers to	User identification module (SIM card)/smart card interface level shifting chip. It facilitates the logic voltage compatibility between a mobile phone's main chip and a SIM card, while also providing discharge protection.
E-Fuses load switch chip	Refers to	Programmable electronic fuses. It can calibrate circuit parameters, control current and voltage, and ensure the circuit operates normally, thereby preventing accidental output short circuits and unexpected overloads.
OCP	Refers to	Over Current Protection. When OCP is triggered, and the DC power supply enters a current-limiting state, OCP takes control after a specified delay, shutting off the DC power supply's output.
NVTS	Refers to	Navitas Semiconductor Corporation
Navitas	Refers to	Navitas Semiconductor Limited, a subsidiary of NVTS

## References

This report is prepared in strict accordance with the relevant requirements of SSE STAR Market No.1 - Regulated Operation by Shanghai Stock Exchange(SSE), with references to the GRI Standards released by Global Reporting Initiative (GRI), the SDG Compass of the United Nations, the ISO 26000:2010 Guidance on Social Responsibility by the International Organization for Standardization (ISO), the Study on the Preparation of ESG Reports of Listed Companies Controlled by Central Enterprises issued by the State-owned Assets Supervision and Administration Commission of the State Council (SASAC), the Rules Governing the Listing of Stocks on SSE STAR Market, the SSE Guidelines No.2 on the Application of Self-Regulation Rules for Listed Companies on SSE STAR Market - Voluntary Information Disclosure, the Notice on Working Effectively Disclosure of 2023 Annual Reports of Listed Companies on SSE STAR Market, the SJ/T16000-2016 Guidance on Social Responsibility of Information and Communication Technology Industry issued by China Electronics Standardization Association (CESA), and other related guidelines.

## Data Source

Unless otherwise indicated, all information and data referenced in this report is based on the Company's internal documentation or relevant public documents. This report has been reviewed and approved by the Company's Board of Directors. The Board of Directors of the Company warrants that this report contains no inaccurate records, misleading statements or major omissions.

## Monetary Unit

Unless otherwise indicated, all monetary amounts are listed in RMB for this report.

## Access to the Report

The electronic version of this report is available for downloading at the website of SSE ([www.sse.com.cn](http://www.sse.com.cn)) and the website of the Company ([www.halomicro.cn](http://www.halomicro.cn)).

This report is published in English. The English version is based on the translation of the Chinese version, and is for reference only. In case of any inconsistency between two versions, the Chinese version shall prevail.

For any further inquiries or suggestions on this report and the Company's ESG work, please contact us via:

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# Message from Chairman



Halo Microelectronics Co., Ltd.  
**TAO HAI Chairman**

In 2023, the global semiconductor industry experienced a severe downturn, posing significant challenges for Halo Microelectronics. However, we adhered to our long-term vision, maintained steady operations, sought motivation, created opportunities, and reshaped the organization through strategic and cultural initiatives. We achieved efficient management, drove innovation in talent and technology, deeply engaged in the analog chip field, and diversified our business layout. The Company implements the ESG principles, focusing on ESG governance as a key initiative. Halo Microelectronics is committed to integrating green development and operation principles from a strategic perspective, writing a new chapter of vibrant and buoyant corporate growth.

## Integrating Green Concepts into the Ecosystem of the Enterprise

Halo Microelectronics, upholding its green mission, is dedicated to developing efficient and low-consumption analog chip products. Through innovative design, we enhance performance and reduce power consumption, offering users high-performance, high-reliability green electronic products. We actively advocate for green office practices and operations, employ a series of measures to raise environmental awareness among employees, foster a green environment, enhance supply chain risk management awareness, and strive for the harmonious coexistence and a shared green future.

## Optimizing Management Services in Collaboration with Technological Innovation

Halo Microelectronics fosters development through innovation, creating competitive technological barriers, focusing on the synergistic effects of technology and management, continuously optimizing innovation management and our rich innovative achievements. We place high importance on intellectual property protection, establish a comprehensive quality management system, and are committed to providing customers with high-quality products and services. We value customer experience, optimize complaint handling processes, establish a comprehensive information security management system, and in 2023, did not experience any cybersecurity incidents. With comprehensive strength and steady steps, we confidently advance towards challenges.

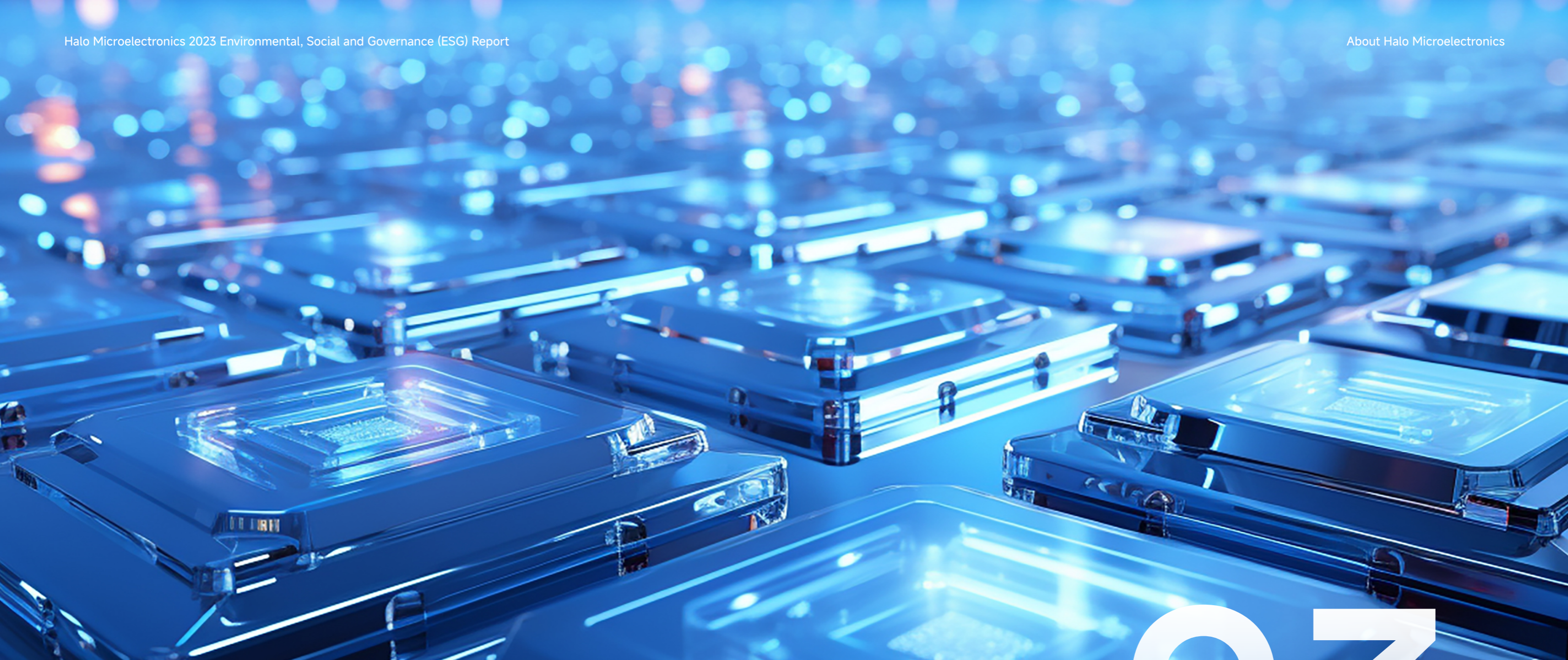
## Facilitating Mutual Benefits by Practicing Social Responsibilities

Halo Microelectronics is committed to achieving mutual benefits for society, deepening collaboration with domestic and international teams, and partnerships among enterprises, universities, and research institutes. We accelerate the application of new technologies, actively participate in public welfare activities, support rural revitalization and youth education, ensure fair employment, protect the legal rights of employees, promote career development and health safety, focus on humanitarian care, and enhance the happiness and sense of belonging among employees. Together with all stakeholders, we forge a people-oriented foundation with responsibility.

## Constructing a Solid Foundation for Steady Development Through Excellent Governance

Halo Microelectronics focuses on improving governance. In the year of 2023, the Company's Chinese name was officially renamed " 希荻微电子集团股份有限公司 ". It established a wholly-owned subsidiary in Beijing, launched the IVS division, integrated the original business division layout, optimized management processes, and enhanced market response efficiency, officially entering a new phase of "group management control, large-scale operations, and specialized management."

Despite the long trek ahead, there's no need to worry about the trials and tribulations along the way. Everyone at Halo Microelectronics will continue to uphold the mission of "Making life better with green energies", taking firm steps towards the envisioned blueprint, working as a team, actively progressing, and tirelessly pursuing to forge ahead and achieve long-term stability.



# 03

## About Halo Microelectronics

- Company Profile
- History
- Strategy and Culture
- Business Layout
- Numbers on Halo Microelectronics
- Honors and Awards





## Company Profile

Founded in 2012, Halo Microelectronics Co., Ltd. was listed in the SSE STAR Market in January 2022 with the stock code of 688173.SH. It is one of the leading domestic suppliers for chips in power management and signal chain. The Company mainly specializes in the R&D, design and sales of analog integrated circuit products including chips in power management and signal chain. It has established a cutting-edge R&D and management team with top minds from international backgrounds and has successfully developed an array of high-performing chip products with high efficiency, high precision and high reliability. The DC/DC chips, super-fast charging chips and other products of the Company boast highly comparable performance with that of similar products produced by domestic and international leading manufacturers. The Company continues to expand and deepen its cooperation with both domestic and international brand clients, also adds a new product line for voice coil motor driver chips, continuously enriching its portfolio of products.

## History

- 2012

The Company was established.
- 2014

The very first switching charger chip HL7005 developed by the Company was officially launched on the market.
- 2015

The industry-leading switch-based buck converter chip was launched;  
 The automotive switching buck converter chip was included in the reference design of Qualcomm's intelligent cockpit vehicle platform in the United States.
- 2017

Wireless charger chip was included in Qualcomm's reference design.
- 2018

The Company successfully passed the ISO 9001 Quality System certification;  
 The automotive charger chip was included in the supply chain of Kia and Hyundai Motor in South Korea.
- 2019

The very first domestic audio and data signal switching chip was launched and mass-produced by domestic premium brand mobile phone manufacturers;  
 The super-fast charging chip - a high-voltage charge pump product was innovatively launched and was exclusively supplied for use in the flagship handset of a well-known brand, marking the release of high-voltage charge pump charger for the first time globally;  
 Our products were successfully included for use in the supply chain of Transsion.
- 2020

Our products were successfully included in the supply chain of clients such as MTK, Xiaomi, OPPO and Honor.
- 2021

Our products were successfully included for use in the supply chains of Samsung, vivo and Audi in Germany.
- 2022

The Company was registered with the SSE STAR Market;  
 The Company was accepted as a member of the JC-40 Committee under JEDEC and it will participate in the joint development and formulation of technical specifications for next-generation integrated circuit pertinent to chips for power management and power devices;  
 The automotive-grade chip for power management has been successfully used in automobile brands such as XPeng, Hongqi, AITO and Changan Auto.
- 2023

Collaborating with Navitas, focusing on key development areas, and exploiting the market of the third generation of semiconductors  
 Granted patent for the collaborative research results with Princeton University  
 The Company's Chinese name was officially renamed " 希荻微电子集团股份有限公司 "  
 The "Configurable Multi-Channel High/Low Side Driver Chip" project participated in the 2023 automotive-grade chip technology initiative "Unveiling Commanders" for major tasks organized by Beijing Municipal Science & Technology Commission, Administrative Commission of Zhongguancun Science Park. The project was successfully approved, and the Company established a new wholly-owned subsidiary, "Halo Microelectronics (Beijing) Co., Ltd.", to undertake the project

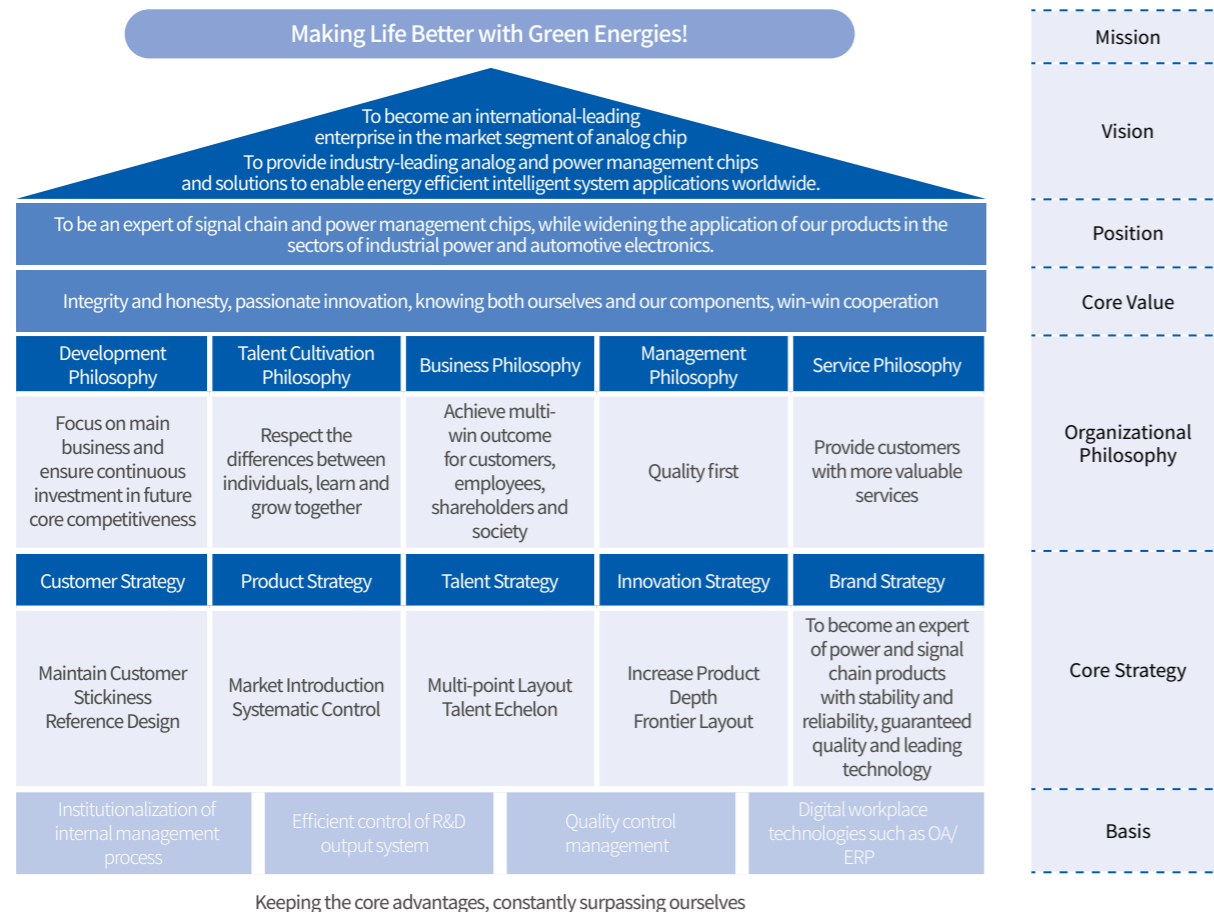
# Strategy and Culture

## Strategies of the Company

Since its establishment in 2012, Halo Microelectronics has always adhered to the mission of "Making life better with green energies", forming a development strategy focused on customers, products, talent, innovation, and brand. The Company is committed to becoming an international leader in the niche market of analog chips, offering industry-leading analog and power management chips and solutions to enable high-efficiency smart system applications globally.

In the future, Halo Microelectronics will further deepen its chip product layout in segmented areas such as power management, port protection, and signal switching, and orderly expand into fields like power conversion products. In the meantime, the Company puts efforts into expanding the product line of voice coil motor driver chips related to AF/OIS technology, and combining with existing power management and signal chain chip products to consolidate its position in the field of consumer electronics. In addition, the Company will develop a more targeted plan for the automotive electronics field based on its current consumer electronics and automotive electronics application fields while continuing to maintain the products' compliance with the AEC-Q100 specification, extend its business to communications and storage fields and constantly create new sources for increasing revenues.

## Strategic Vision Board



## Corporate Culture





## Business Layout

As one of the leading domestic enterprises in the design of integrated circuits, Halo Microelectronics specializes in the R&D, design and sales of analog integrated circuits including chips in power management and signal chain. The main products are analog integrated circuits including chips for power management and signal chains in the consumer electronics and automotive electronics fields. The current product series includes DC/DC chip, lithium battery fast charger chip, port protection and signal switching chip, power switching chip, etc., all delivering outstanding performances like high efficiency, superior precision and incredible reliability. Additionally, in 2023, the Company added a new product line—voice coil motor driver chips related to AF/OIS technology. The Company's main product layout is as follows:

DC/DC chip	Lithium battery charging management chip		Port protection and signal switching chip	Power switching chip	Voice coil motor driver chip
<b>Consumer Electronics, e.g., Smart phones</b> Buck converter chip Boost converter chip <b>Automotive Electronics</b> Buck converter chip Boost converter chip High pressure LDO <b>Communication and Storage</b> Buck converter chip	Super-fast charging chip  <b>Consumer Electronics, e.g., Smart phones</b> High pressure charge pump Low pressure charge pump	Fast charging chip  <b>Consumer Electronics, e.g., Smart phones</b> High-precision micro-current charging High current switch charging	<b>Consumer Electronics, e.g., Smart phones</b> Audio and data signal switching chip Load switch chip USB TYPE-C interface protection chip SIM card interface level shifting chip <b>Automotive Electronics</b> HSS <b>Communication and Storage</b> E-Fuses	<b>White goods</b> Motor driver chip, module	<b>Consumer Electronics, e.g., Smart phones</b> Voice coil motor open-loop/closed-loop driver chip of camera OIS voice coil motor/SMA memory metal motor driver chip of camera

### Consumer Electronics

In the consumer electronics field such as mobile phones, the products developed by Halo Microelectronics have been well recognized by major chip platform manufacturers like Qualcomm and MTK, and they have been extensively used in the consumer electronic products by brands such as Samsung, Xiaomi, Honor, OPPO, vivo, Transsion, Google and Logitech, covering a variety of mobile intelligent terminal devices including medium-and high-end flagship models.

### Automotive Electronics

Halo Microelectronics continues to drive deep in the automotive electronics sector. In 2015, the plan for automotive-grade chips by the Company was firstly started with Qualcomm's 820 automotive-grade recreational platform, then the automotive-grade DC/DC chips were officially supplied to the Kia series of Hyundai in Korea through YuraTech since 2018, followed by official supply to Audi in Germany in 2021. As of now, the automotive-grade products developed by the Company have been used in Audi, Hyundai, Kia, Xpeng, Hongqi, AITO, Changan Auto and other automobile brands in various countries like China, Germany, Japan and Korea. The Company has initiated multiple new research topics for automotive chips, with over 20 products in the R&D pipeline developed according to the AEC-Q100 Grade 1 standard either in the research and development or definition phase, and more than 15 products ready for sampling, providing technical and product reserves for the Company's expansion into the automotive electronics market. Additionally, in June 2023, the Company participated in the 2023 automotive-grade chip technology initiative "Unveiling Commanders" for major tasks organized by Beijing Municipal Science & Technology Commission, Administrative Commission of Zhongguancun Science Park with the "Configurable Multi-Channel High/Low Side Driver Chip" project which was successfully approved. In October 2023, the Company launched an automotive-grade low IQ synchronous boost control chip, leading the new trend in power management. In November 2023, the Company was honored with the "Chip Development in Yizhuang · 2023 Top 50 Automobile Chips".

## Numbers on Halo Microelectronics Financial Data Highlights

### ESG data highlights



With the recovery of the consumer electronics industry, the Company's performance has risen steadily quarter by quarter. In the third quarter, the operating income was RMB **136.4703** million, a quarter-on-quarter increase of **61.41%**; In the fourth quarter, the operating income was RMB **132.4385** million, which was basically the same as that in the third quarter.



In the second half of 2023, the Company sold the stock assets obtained from the NVTS equity transfer and technology licensing transaction. The above transaction led to an increase in the Company's retained earnings by **30.8691** million dollars, optimized the Company's asset structure, improved asset liquidity, and realized the preservation and appreciation of assets. At the end of the reporting period, the Company's total assets were RMB **2.0163737** billion, an increase of **3.59%** over the end of the previous year; The net assets attributable to shareholders of listed companies were RMB **1.8349386** billion an increase of **2.29%** over the end of the previous year.



During 2023, the total shipment amount of all product lines of the Company was RMB **621.106** million, an increase of **11.02%** over the same period of the previous year, of which the shipment amount of the Company's new product line of voice coil motor driver chips during the reporting period was RMB **252.4827** million, which is one of the main growth points of the Company's shipment amount.



The Company attaches great importance to the accumulation and innovation of its own R&D and technology, and continues to invest in large-scale R&D, thereby driving the performance improvement and new function integration of various products, facilitating the evolution and iteration of products, and improving the Company's core technology competitiveness. During 2023, the Company's R&D expenses were RMB **237.4343** million, an increase of **17.26%** over the previous year, accounting for **60.32%** of the Company's operating income; There were **27** new invention patent grants, and as of the end of the reporting period, the Company has obtained a total of **69** invention patent grants, including **28** overseas patents.

# Honors and Awards



High-tech Enterprise Certificate



Small and Medium-sized Enterprises with Specialization, Delicacy, Feature and Innovation



Top 50 Player in Growth Group of Guangdong-Hong Kong-Macao Greater Bay Area - High-value Patent Portfolio Layout Competition 2023



A Characteristic Enterprise with Specialization, Delicacy, Feature and Innovation in Foshan



Foshan Excellent Innovation and Entrepreneurship Team Enterprise



Science and Technology Leading Enterprise in Foshan in 2023 (Science Innovation and Entrepreneurship Team)



"Excellence Innovation Award" on the 30th Anniversary Celebration of Guicheng Chamber of Commerce in Nanhai District, Foshan



Outstanding Talent Team Project in Nanhai District, Foshan



Excellent Enterprises in Digital Application Innovation in Nanhai District, Foshan



Science and Technology Leading Enterprise in Nanhai District, Foshan



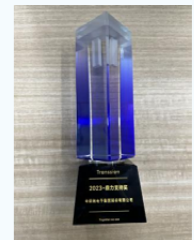
Annual Support Unit of the 20th "Zhan Tianyou Cup" Youth Science and Technology Innovation Contest in Nanhai District, Foshan City



The First CRHC Cup · ESG Golden Bull Award for Top 50 Science and Technology Leading Enterprises



Outstanding Technical Breakthrough Award in the Domestic Analog IC Industry



Annual Supporter Award



Gold Award for Best Strategic Partner 2023



Best Delivery Award 2023



Chip Development in Yizhuang · 2023 Top 50 Automobile Chips





# 04

## ESG Strategies and Management

- ESG Responsibility Management
- Interactions with Stakeholders
- Assessment of Material Topics

# ESG Strategies and Management

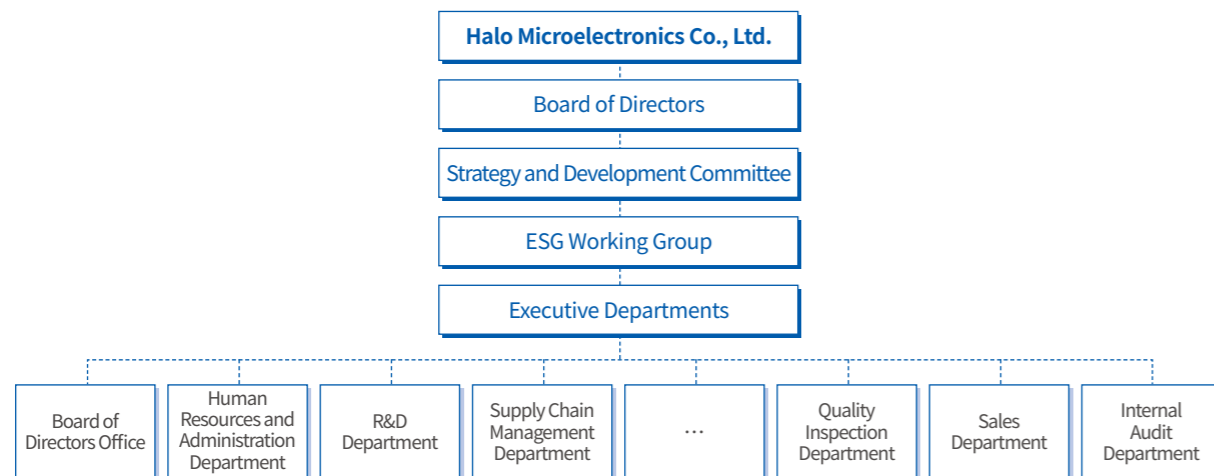
## ESG Responsibility Management

### ● ESG Strategy

Halo Microelectronics is committed to enhancing the level of sustainable development over the long term, actively fulfilling corporate social responsibility, integrating ESG concepts into the Company's strategic planning and operational management, paying attention to environmental, social, governance, and other aspects of ESG issues, continuously improving ESG governance level, and promoting sustainable development of the enterprise.

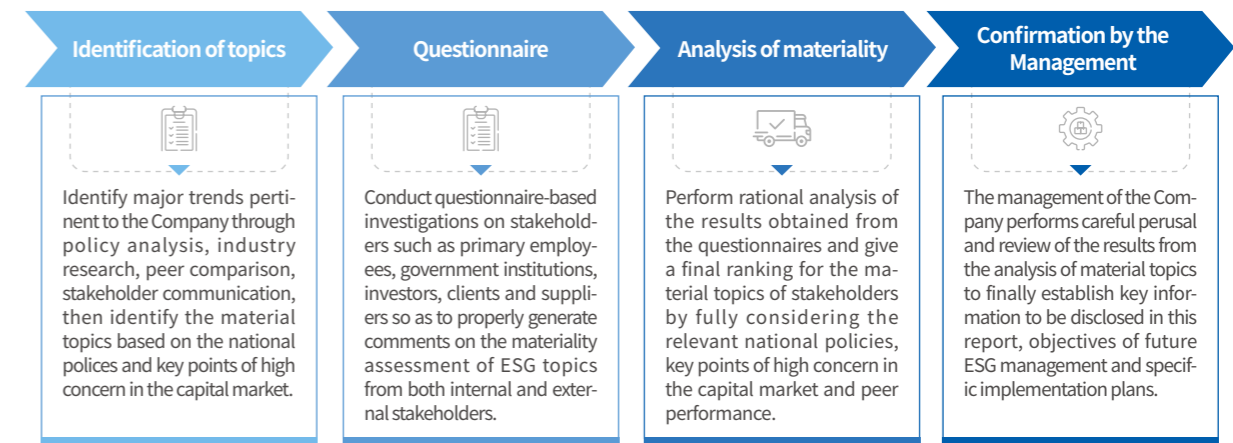
### ● ESG Governance Structure

The Board of Directors of Halo Microelectronics has a Strategy and Development Committee responsible for the comprehensive leadership of ESG work, in charge of researching, formulating the Company's ESG strategic planning, strategic goals, governance structure, and management systems, establishing ESG-related risk and opportunity identification processes, regularly analyzing related risks, and reviewing the Company's ESG reports and other ESG-related disclosures to ensure all processes meet corporate needs, relevant laws and regulations, regulatory requirements, and international standards.



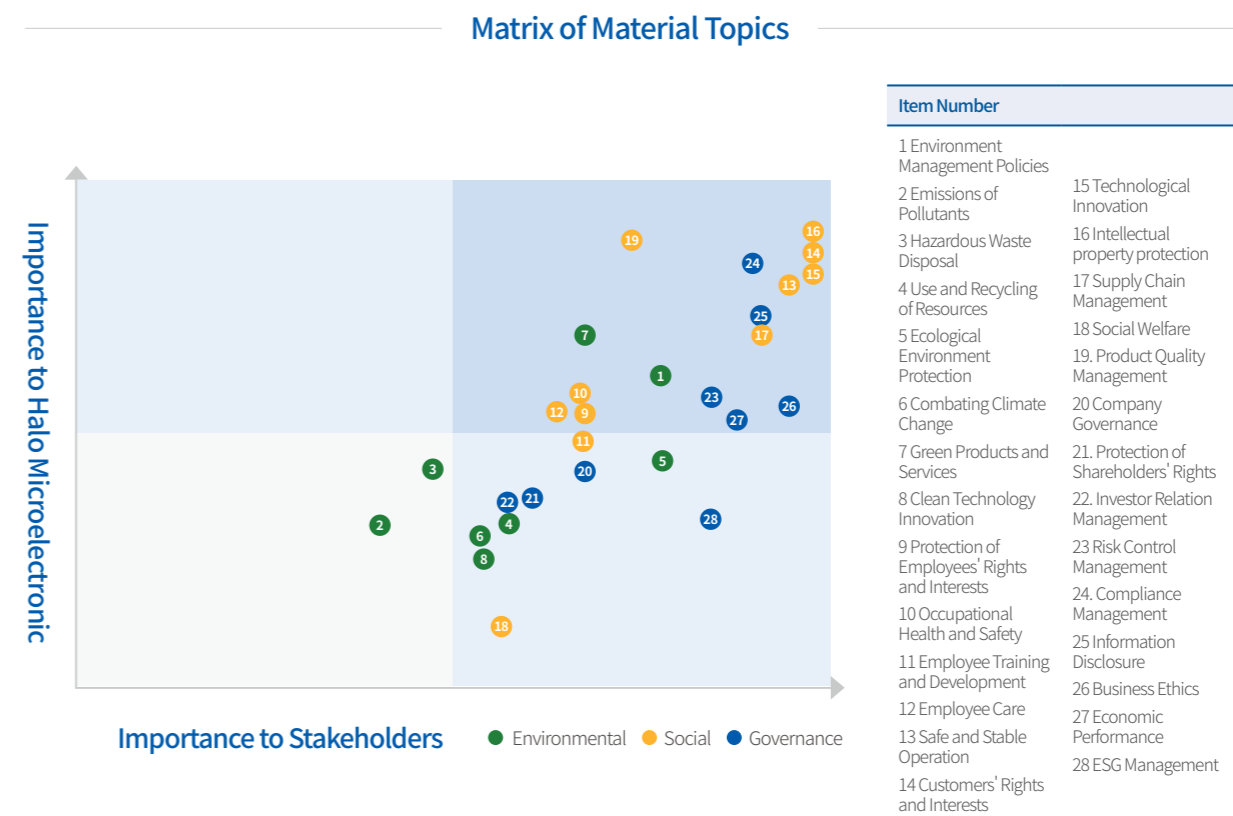
## Interactions with Stakeholders

Halo Microelectronics places great emphasis on stakeholder communication, continuously improving the stakeholder communication mechanism. The Company actively maintains communication with shareholders and investors, government and regulatory bodies, customers, employees, suppliers and partners, communities, and the environment, establishing a communication mechanism that combines real-time and scheduled communication, specialized communication, and unscheduled exchanges. At the same time, it actively utilizes new media platforms, encouraging all parties to actively participate in interaction, promptly listen to, and address concerns of stakeholders, ensuring smooth and regular communication with all stakeholders.





## Assessment of Material Topics

Halo Microelectronics maintains active communication with internal and external stakeholders through surveys and other methods. Referencing the compilation standards adopted by this report and the features of the Company's business, a two-dimensional matrix is developed. Based on the impact of the Company's business on the economy, society, and the environment, ESG key topics are identified from two aspects: stakeholder assessment and the impact of company decisions. The Company proactively understands the issues of concern to stakeholders, actively takes related actions, and timely communicates the effectiveness of such actions.



Materiality	Category	Topic
Topics of high materiality	Social	Intellectual property protection
	Social	Customers' rights and interest
	Social	Technological innovation
	Social	Safe and stable operation
	Social	Supply chain management
	Social	Product quality control and management
	Governance	Information disclosure
	Governance	Compliance management
Topics of medium materiality	Governance	Business ethics
	Governance	Risk control management
	Governance	Economic performance
	Environmental	Environment management policy
	Environmental	Green products and services
Topics of general materiality	Social	Occupational health and safety
	Social	Protection of employees' rights
	Social	Employee care

Communication with Stakeholders

Stakeholders	Expectations and requirements	Communication channels
 Shareholders and Investors	Protection of shareholders' rights and interests Receiving return on investment Disclosure of material information Continuous value creation Preventing business risks	Regular disclosure of business and financial information Regular and routine communication with investors Shareholders' General Meeting Performance presentation
 Government and Regulatory Agencies	Compliance with laws and regulations Environmental compliance Paying taxes in accordance with the law Promoting employment	Daily management Meetings and communication Supervision and inspection Transparent recruitment Questionnaire and data transfer

Stakeholders	Expectations and requirements	Communication channels
 Employees	Equal Employment Salaries and benefits Occupational health and safety Fair opportunities for promotion and career development Vocational training Humanistic care	Diverse employment Remuneration system Improving health and safety system Multiple development paths Opportunities for exchange on career planning education and learning Employee satisfaction survey Concern of female employees Activity benefits
 Suppliers, Peers and Partners	Honoring our commitments Fair, just and transparent procurement Win-win development Agreement honoring and delivery Industry progress	Suppliers management Transparent procurement Honoring our contracts Whole process quality control Participating in seminars Standard Setting
 Customers	Product R&D and technological innovation Product quality management Information security and protection of trade secrets Responsible marketing	Visits and talks Customer satisfaction survey Formulating targeted system documents for customer complaints Signing confidentiality agreements Holding exhibitions Dealer management
 General public	Improving community environment Supporting public welfare activities Green and Environmentally Friendly School-enterprise cooperation	Providing relief to disaster victims Public welfare activities Green office, energy conservation & emissions reduction Promoting cooperation between industry, academia, and research Campus recruitment
 Media	Information dissemination Value sharing	Interview and exchange Press release Official account/website information Participation in events

## Harmonious and Co-prosperity to Build a Land of Hope

- Technology Empowerment for Efficiency and Reduction in Consumption
- Proactive Approach to Green Operations
- Energy Saving and Emission Reduction for Efficient Resource Use
- Moving Towards Green with Low-carbon Office Practices

05

# Harmonious and Co-prosperity to Build a Land of Hope

## Technology Empowerment for Efficiency and Reduction in Consumption

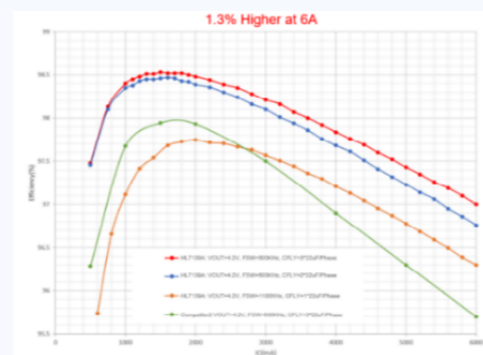
Halo Microelectronics always adheres to the mission of "Making life better with green energies," and is committed to creating analog chip products with higher efficiency and lower power consumption. Through innovative design and development, the Company continuously improves product performance and strictly controls power consumption indicators, thereby providing customers with high-performance, high-reliability green electronic products, realizing the effective use of energy, and contributing to clean energy.

### Improving Efficiency and reducing consumption

Halo Microelectronics introduces products that are high in efficiency and low in power consumption. As the demand for wearable mobile devices becomes increasingly diversified, thin and portable, with long battery life, are pain points that mobile devices need to address. The Company meets the demands of users and industry development, introducing several products that combine high efficiency and low power consumption through technological innovation, aiming to enhance efficiency and reduce energy consumption, and responding to the global theme of energy-saving and low carbon.

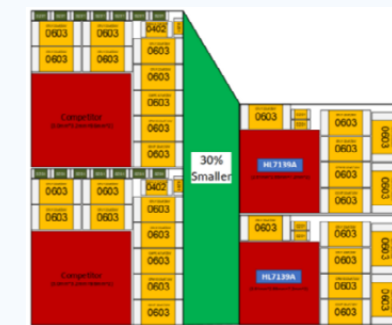
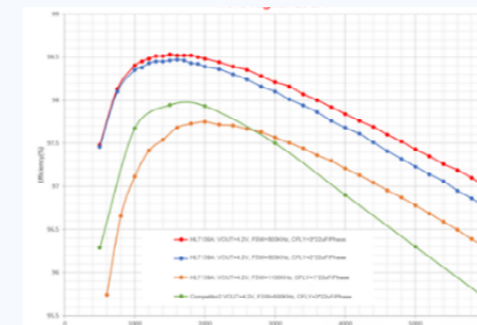
### HL7543 Ultra-Low Quiescent Current DC/DC Buck Conversion Chip

In 2023, the Company introduced the ultra-low quiescent current DC/DC buck conversion chip, HL7543, suitable for wearable devices, smartwatches, and other applications. With ultra-low power consumption and a compact package, this chip brings more efficient and stable power management solutions to wearable device applications, thereby reducing power consumption in standby mode, extending battery life, and effectively solving power management issues in wearable devices.



### HL7139A High-Efficiency, High-Current Charge Pump Charging Chip

In 2023, the Company introduced the HL7139A, a high-efficiency, high-current charge pump charging chip suitable for compact electronic devices such as smartphones, tablets, and mobile IoT devices. In a 33 W application scenario, this chip (compared to similar products from competitors) can achieve up to 1.3% higher efficiency and 45% better thermal performance. In a 66 W parallel charging application scenario, this chip (compared to similar products from competitors) allows for about 30% smaller overall PCB size, while significantly enabling faster and lower power consumption battery charging functions.



## Proactive Approach to Green Operations

### Environmental Management System

By strictly implementing and following requirements of Environmental Protection Law of the People's Republic of China, the Law of the People's Republic of China on Environmental Impact Assessment and other relevant laws and regulations, Halo Microelectronics keeps improving the environment protection system construction and practices green development strategy, trying to become a resource-conservative and environment-friendly enterprise. In line with the actual circumstances of business operation, the Company has established relevant environmental protection management systems, fully fulfilling the primary responsibility for energy saving and environmental protection of listed companies.

During the reporting period, the Company has not had any major environmental incidents.

### Combating Climate Change

Climate change is one of the greatest risks faced globally. In the process of practicing low-carbon and environmentally friendly operations, Halo Microelectronics actively addresses climate change, referencing the framework of Task Force on Climate-related Financial Disclosures (TCFD) for disclosing climate-related financial information, carrying out the identification of climate risks and opportunities, and based on this, assessing the related impacts and developing various adaptation and response measures.

Climate-related Risk		Response
Physical Risks	Contingency Risks: Extreme weather	Office buildings, laboratories and equipment might be damaged to cause asset loss, even employee safety accidents, and may damage the continuity of business operations and economic interests directly or indirectly.  Identify possible damage to assets and procure necessary insurance.  Close attention is paid to weather changes. Warnings and forecasting information are forwarded timely, and emergency measures such as ice and snow removal and drainage are promptly taken to eliminate hidden dangers and reduce losses related to acute weather events.
	Chronic Risks: Sustained high temperature	Higher temperatures leading to increased need for cooling, which further increases operational costs;  Applying cooling technology and equipment that are more energy efficient.
Transition Risks	Policies and Laws Risks	New policies and regulations on greenhouse gas (GHG) emissions may increase the Company's compliance costs.  Stay on top of the changes in the regulations and policies related to dual carbon, and formulate corresponding measures in a timely manner to actively address the changes.
	Market risks	Shifts in upstream and downstream supplier and customer preferences may intensify the focus on green and low-carbon products.  Rising energy and outsourcing costs.  Implementing a green procurement philosophy, and giving priority to outsourcing manufacturers that are ISO14001 certified in the process of selection;  Introducing more energy-saving and consumption-reducing products with green, low-carbon design principles to meet consumer demands;  Promoting energy conservation.
	Reputation risks	Poor performance in combating climate change and sustainability giving rise to negative feedback from associated stakeholders.  Adhering to sustainable development, actively undertaking social responsibilities, and urging manufacturers to focus on reducing emissions of wastewater, exhaust gas, etc., during production to reduce supply chain environmental risks;  Regularly publishing ESG reports and disclose information on the status of the Company's energy saving and emission reduction efforts.

## ● Risk Emergency Plan

To effectively prevent environmental risk accidents and respond efficiently and promptly to sudden environmental risks, fully control and eliminate pollution, Halo Microelectronics has developed an Environmental Risk Emergency Plan, clarifying the organizational structure and related responsibilities for emergency environmental risk management, predicting various types of environmental risks that may occur at office sites, organizing, and developing emergency measures, thereby providing important guarantees for environmental safety and employee safety.

## Energy Saving and Emission Reduction for Efficient Resource Use

### ● Use of Resources and Emissions

Halo Microelectronics strictly observes the Environmental Protection Law of the People's Republic of China, the Water Pollution Prevention and Control Law of the People's Republic of China, the Atmospheric Pollution Prevention and Control Law of the People's Republic of China, the Law of the People's Republic of China on Prevention and Control of Pollution from Environmental Noise, the Law of the People's Republic of China on the Prevention and Control of Environment Pollution Caused by Solid Wastes and other laws and regulations, in order to standardize the use and emission of daily office resources.

Halo Microelectronics' main business is the R&D and design of analog integrated circuits, primarily utilizing externally purchased electricity and water, generating only a small amount of domestic wastewater and office waste such as discarded electronic devices, without producing industrial wastewater, exhaust gases, waste slag, noise, or other pollutants. In its business operations, the Company adheres to a sustainable growth strategy, advocating for a green and low-carbon philosophy, with no environmental protection violations during the reporting period.

### ● Hazardous Substance Management

Halo Microelectronics places importance on clean and safe management during production. Based on the Fabless operational model, it effectively supervises clean production at the entrusted outsourcing factories responsible for wafer manufacturing and packaging testing. To ensure clean and safe manufacturing, the Company has developed a Hazardous Substances Management Manual based on the IECQ QC080000 standard and the actual circumstances, to manage outsourcing factories, specifying the management objectives, responsibilities, operational processes, and inspection mechanisms for hazardous substances.





## Moving Towards Green with Low-carbon Office Practices

### ● Green Office Actions

The Company promotes green office practices, advocating for the reuse of paper to save resources; and posting "Please turn off the lights", "Please timely turn off lights, computers and air conditioners after work", and other reminders in office areas and meeting rooms. The Company regularly conducts waste battery recycling to enhance employees' awareness of energy saving and environmental protection through multiple measures, fostering a green and low-carbon lifestyle.



Green office and operation

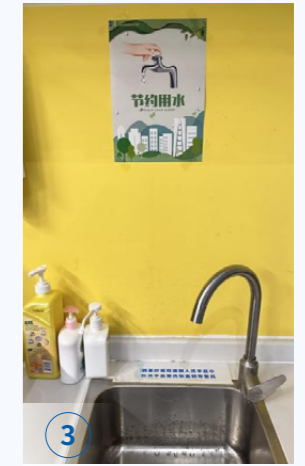
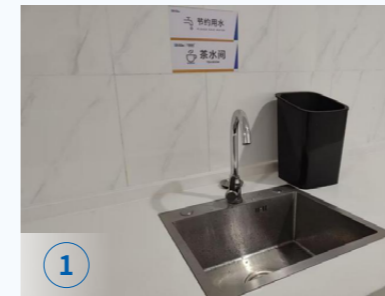


Recycling Waste Batteries

Halo Microelectronics values the sensible use of water and has implemented a series of measures such as water-saving initiatives, optimizing production processes, and replacing water-saving devices to effectively improve water efficiency. Meanwhile, the Company promotes the concept of water conservation among employees by posting Water-saving Slogans and raising awareness about water conservation.



1. Posting "Save Water" slogans in pantries and restrooms.
2. Using water-saving devices to prevent leaks and drips.
3. Restrooms are equipped with automatic faucets for smart water-saving.



### ● Sustainable supply chain

Halo Microelectronics actively practices the green and low-carbon philosophy in supplier selection and product procurement, fully considering environmental protection, resource conservation, safety and health, circular low-carbon, and recycling promotion, giving priority to purchasing and using energy-saving, water-saving, and material-saving raw materials, products, and services that are beneficial to environmental protection. The Company has developed the Supplier Management Control Procedures and Fixed Assets Maintenance and Disposal Procedures, explicitly incorporating environmental considerations into them.

### ● Welfare Activities about Environmental Protection

Halo Microelectronics actively engages in environmental protection themed charity activities, conducting various environmental propaganda activities to raise public awareness of environmental protection and deepen the concept of environmental protection in people's hearts.



#### The Denglongsha Island Construction Project

Currently, the green beautiful Jiangxin Island has been included as a key work and highlight project of building a green beautiful Foshan. As an important natural resource of Foshan, Jiangxin Island has extremely high ecological value and plays an irreplaceable role in constructing the regional ecological pattern and maintaining biodiversity. Halo Microelectronics, headquartered in Foshan, has donated to the project, fulfilling the social responsibility as a listed company.

## Mutual Promotion for Win-Win, Upholding the Spirit of Halo Microelectronics

- R&D Support, Quality Prioritized
- Dedication to Society for Common Benefit
- People-Oriented for Mutual Growth

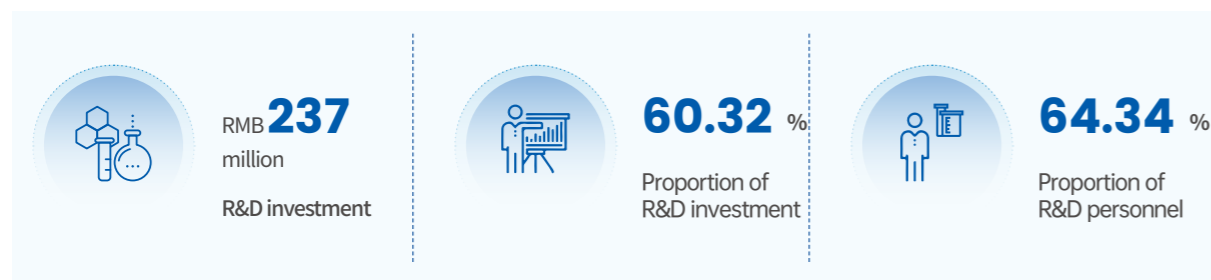
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# Mutual Promotion for Win-Win, Upholding the Spirit of Halo Microelectronics

## R&D Support, Quality Prioritized

### ● Innovation-Driven Development

Halo Microelectronics consistently views innovation as the key driving force for sustainable growth, highly values the accumulation of basic technologies, continuously enhances product competitiveness, and builds superior technological barriers, becoming one of the few domestic suppliers that can compete directly with international players in the global high-end analog chip market. The Company focuses on enhancing the synergy between technology and management, with a multi-product strategy supporting rapid and high-quality growth and development.



The Halo Microelectronics R&D team has a profound industrial background, focusing on the R&D and design of chips, concentrating on the cutting-edge technology of high-performance analog integrated circuits, precisely capturing market demands, coordinating resource management to meet the ever-changing market needs.

### Educational Background of R&D Personnel

Educational background of R&D personnel	Proportion
Ph.D.	9.24%
Master's degree	32.61%
Bachelor's degree	53.26%
Associate degree	4.89%

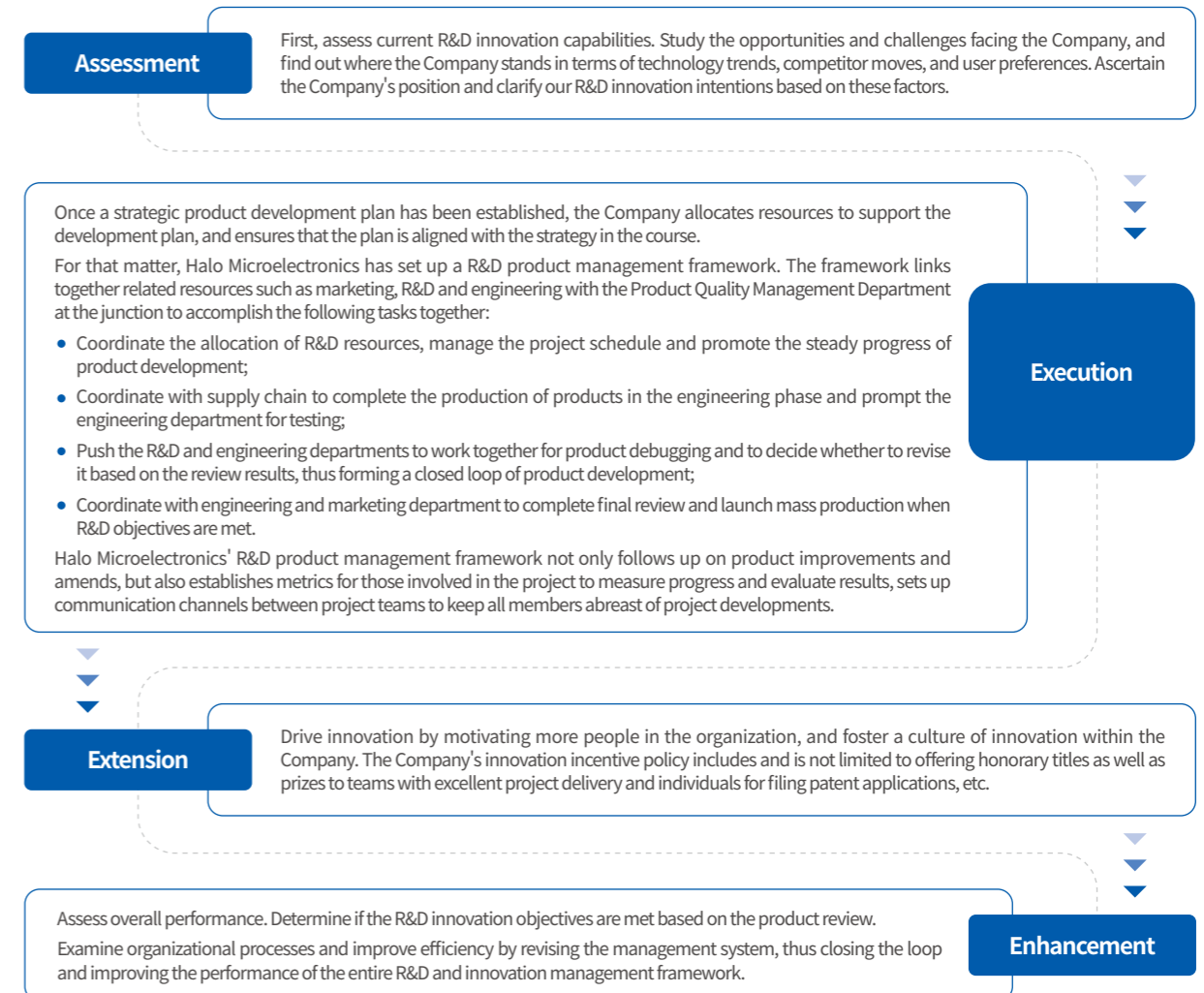


- In June 2023, the Company participated in the 2023 annual automotive-grade chip technology initiative "Unveiling Commanders" for major tasks, organized by Beijing Municipal Science & Technology Commission, Administrative Commission of Zhongguancun Science Park with the "Configurable Multi-Channel High/Low Side Driver Chip" project which was successfully approved.

### ● Optimizing Innovation Management

Halo Microelectronics adheres to a Fabless business strategy, focusing on the R&D and design of chips, outsourcing wafer manufacturing, packaging, and testing to outsourcing factories. To ensure the quality of R&D, the Company has established R&D and Quality Management Systems, Design and Development Control Procedures, Internal Audit Control Procedures, and R&D Expense Accounting Management Methods, among other R&D-related management systems and processes. At the same time, the Company continually learns from advanced experiences, benchmarks against the top-level design concepts of mainstream innovation management systems, and, based on its own characteristics, has gradually built a unique R&D and innovation management system, achieving a process-oriented, systematic, and closed-loop innovation workflow.

#### R&D and innovation management system

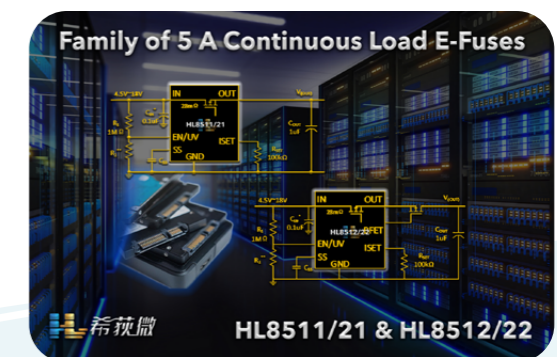
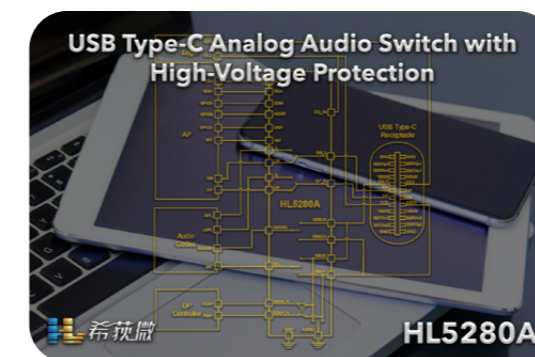


## ● Enriching Innovative Accomplishments

Halo Microelectronics has achieved widespread success in the analog chip market with its excellent performance indicators. This includes DC/DC chips, lithium battery charging chips, port protection and signal switching chips, and voice coil motor driver chips suitable for the consumer electronics field, as well as high/low side switch chips, automotive Low Dropout Regulator (LDO) chips, E-Fuses and Hot Swap chips, intelligent power modules, etc., designed for cutting-edge fields such as automotive and cloud computing.

Product line	Introduction	Star Products	Product advantage
DC/DC chip	Halo Microelectronics independently developed a proprietary control architecture that provides power management chip solutions for boost and buck to meet the quality requirements of consumer electronics and automotive electronics. Halo Microelectronics' high-performance DC/DC products integrate low R <sub>ds(on)</sub> power MOSFETs, offering a highly integrated, high-density, and streamlined peripheral device solution for efficient power conversion. With globally leading dynamic response performance and efficient conversion efficiency, they are particularly suitable for powering core power systems such as CPUs, GPUs, LPPDR3/4/5, etc.	HL7543	<ol style="list-style-type: none"> <li>1) Extending battery life</li> <li>2) Solution possessing smaller size</li> </ol>
Lithium battery charging chips	The lithium battery charger product series produced by Halo Microelectronics not only support mainstream charging protocols such as USB PD, UFCS and VOOC, they can also deliver extremely high charging efficiency to ensure lithium battery charging management schemes of efficient charging performance, excellent safety and reliability for the users.	HL7009A	<ol style="list-style-type: none"> <li>1) High charging efficiency</li> <li>2) High flexibility of solutions</li> <li>3) High pin compatibility</li> <li>4) High degree of miniaturization and integration</li> </ol>
Port protection and signal switching chip	Halo Microelectronics provides various types of interface (port) protection products, which integrate the necessary protection features to ensure that they provide users with a power solution that equally considers efficient charging and full protection.	HL5280A	<ol style="list-style-type: none"> <li>1) High integration of three-in-one switching transmission function, enabling greater flexibility in system-level design</li> <li>2) Integrated over-voltage protection (OVP) and watchdog timer, ensuring system stability and reliability</li> </ol>
Voice coil motor driver chips	Halo Microelectronics' innovative Optical Image Stabilization (OIS) chips are equipped with a 32-bit DSP or MCU. The chips set a new standard in image stabilization and autofocus technology with enhanced functionality and advanced performance.	DW9786	<ol style="list-style-type: none"> <li>1) Built-in high-performance 32-bit MCU</li> </ol>
High/low side switch chips	At Halo Microelectronics, we are committed to developing and providing robust and high-quality automotive grade (AECQ-100 qualified) products. The Company's automotive products range from DC/DC converters and low dropout regulators (LDOs) to protection switches suited for infotainment, and instrument clusters.	HL8518	<ol style="list-style-type: none"> <li>1) Extremely low sleep power consumption (less than 1uA)</li> <li>2) Conduction impedance of only 80 milliohms</li> <li>3) Precise load current detection capability</li> </ol>
Automotive LDO regulator chips		HL8743	<ol style="list-style-type: none"> <li>1) Higher power supply rejection ratio (PSRR)</li> <li>2) Larger output current</li> <li>3) More comprehensive protection features</li> </ol>

Product line	Introduction	Star Products	Product advantage
E-Fuses	Halo Microelectronics is committed to providing solutions for various types of automotive and industrial applications. Halo Microelectronics' power switch product series can drive capacitors, inductors, and active loads, featuring comprehensive protection and diagnostic functions to help users build systems with high stability, safety, and intelligence.	HL8511/2 HL8521/2	<ol style="list-style-type: none"> <li>1) High precision current limiting control</li> <li>2) Ultra-fast OCP (Over Current Protection) response time</li> <li>3) Supports single fault failure mode</li> <li>4) Ultra-low hot plug and surge current</li> <li>5) Effectively clamps VOUT to protect devices</li> </ol>
Smart power modules	Halo Microelectronics specializes in the fields of home appliance motor drives and power tool motor drives, offering solutions for motor driving and brushless DC motors.	HL9901 Series	<ol style="list-style-type: none"> <li>1) Excellent performance</li> <li>2) High product integration</li> <li>3) Comprehensive and reliable protection features</li> </ol>



### Halo Microelectronics at the 2023 Applied Power Electronics Conference

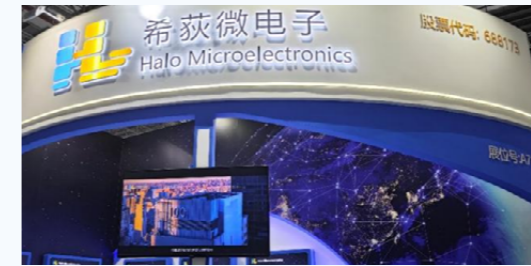
The Applied Power Electronics Conference (APEC 2023) was held in Orlando, Florida, USA. APEC, as the largest and exclusive exhibition and conference in the global power electronics/power supply field, gathered professional attendees and power electronics product suppliers from around the world, providing a high-quality platform for industry colleagues to exchange ideas.

From March 21 to 22, 2023, Halo Microelectronics showcased a range of product demos at APEC, offering five major solutions including USB Type-C interface protection, automotive power and protection switches, high-efficiency and large-current DC/DC, motor drive solutions, AF (Auto Focus) & OIS (Optical Image Stabilization), sharing the latest chip R&D achievements in the industry, attracting a wide range of customers and partners for visits and exchanges.



### Halo Microelectronics at the 2023 Electronica China

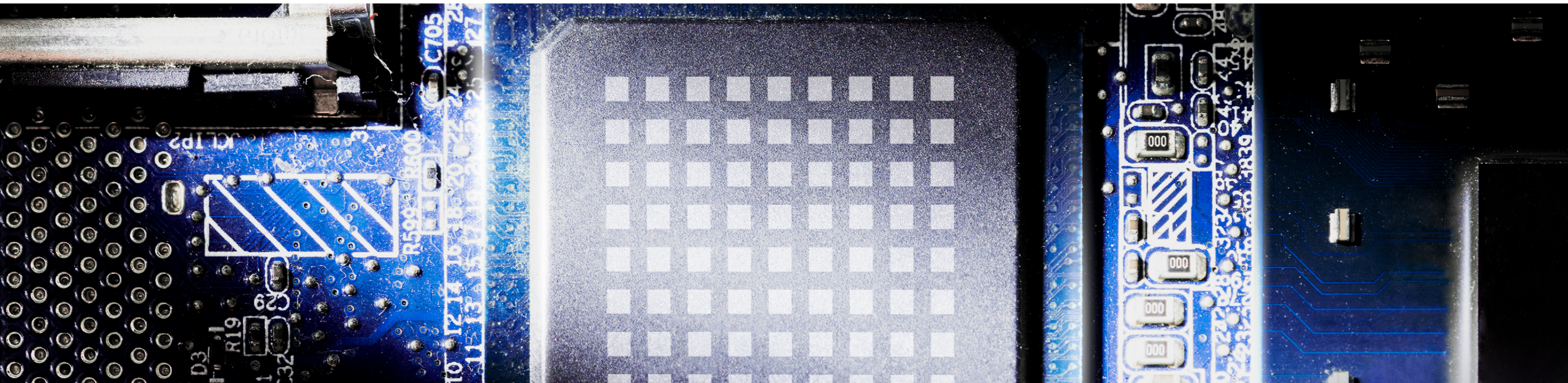
On July 11-13, 2023, the 2023 Electronica China was held as scheduled at the National Exhibition and Convention Center. As a leading domestic supplier of power management and signal chain chips, themed "Making life better with green energies", Halo Microelectronics showcased a variety of new products from seven major product lines including lithium battery charging management, high-performance DC/DC, port protection, automotive power supply, AF and OIS, motor driver, and AC/DC at the exhibition. The Company shared the latest technological achievements and solutions with many industry professionals who attended the event.



### Halo Microelectronics Wins the "Outstanding Technical Breakthrough Award in the Domestic Analog IC Industry"

On December 23, 2023, "The Second Power Industry Supporting Brand Award Ceremony" organized by 21Dianyuan was held in Shenzhen. Halo Microelectronics was invited to attend and won the "Outstanding Technical Breakthrough Award in the Domestic Analog IC Industry". This honor represents the industry's recognition and high appreciation of Halo Microelectronics' continuous investment in the research and development of high-performance analog integrated circuits. It also reflects the industry's expectation for Halo Microelectronics to continue driving the development of the industry in the future.

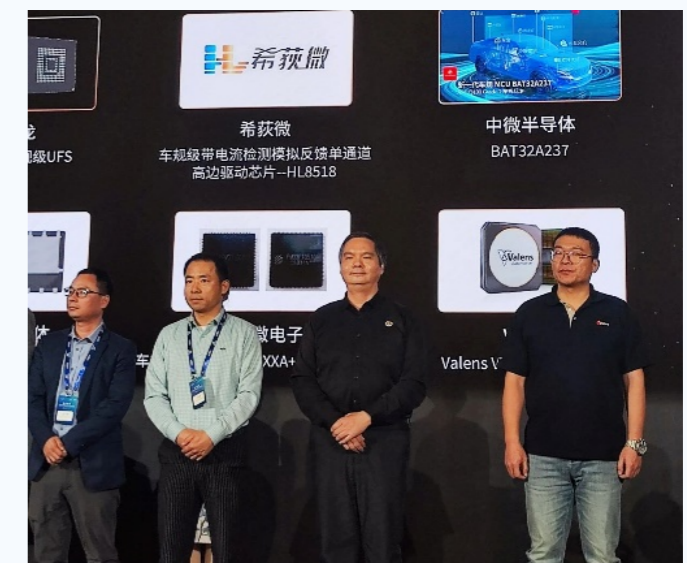




**Halo Microelectronics honored with the "Chip Development in Yizhuang · 2023 Top 50 Automobile Chips"**

From November 28th to 30th, 2023, the "Chip Development in Yizhuang" event was organized under the guidance of the Beijing Municipal Science and Technology Commission and the Beijing Municipal Bureau of Economy and Information Technology, hosted by the Management Committee of the Beijing Economic-Technological Development Area, and undertaken by Gasgoo. The event consisted of three main components: an automotive chip competition, an automotive chip conference, and a closed-door seminar. Among these, Halo Microelectronics was honored with the "Chip Development in Yizhuang · 2023 Top 50 Automobile Chips" during the automotive chip competition.

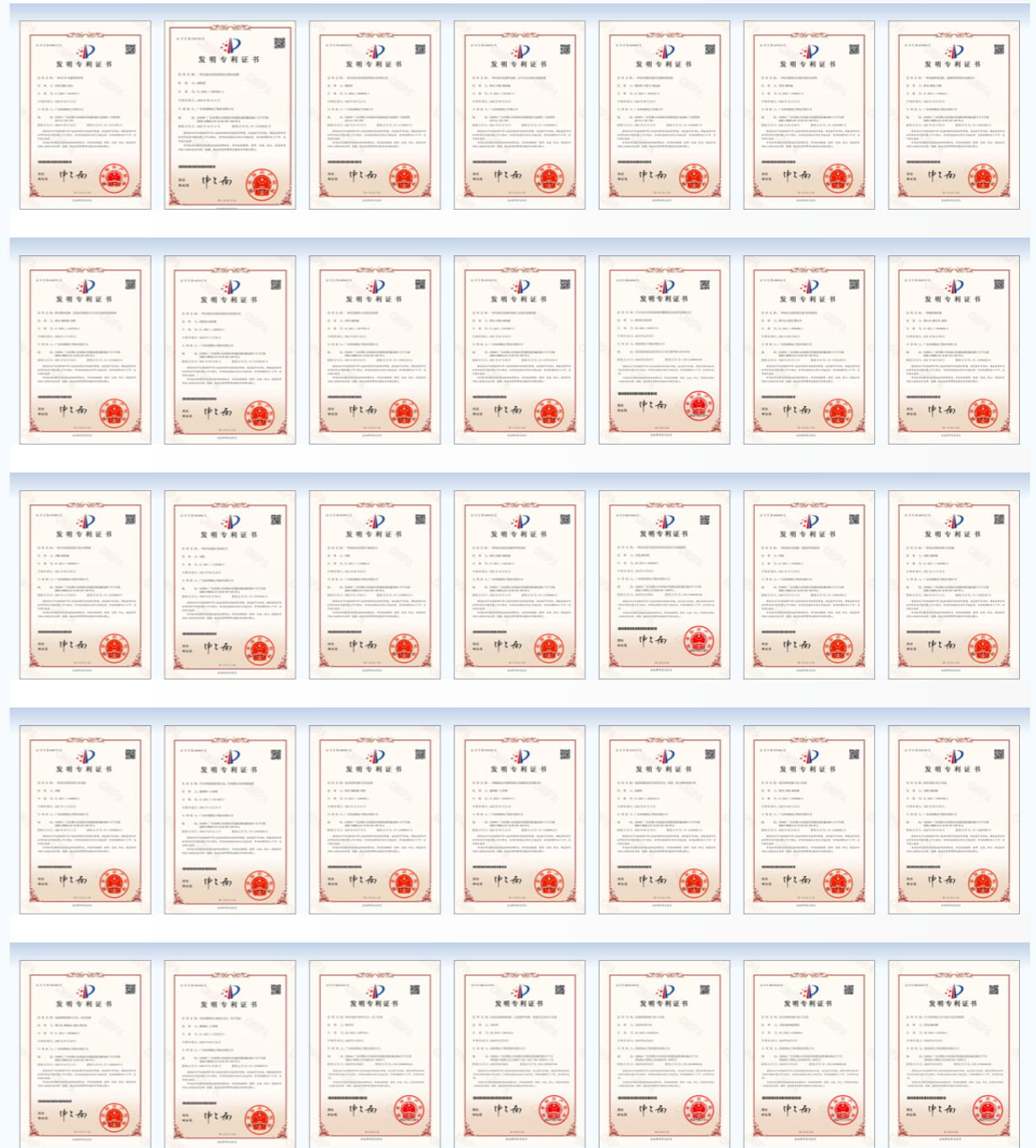
This award recognized Halo Microelectronics' long-term dedication to the development and technological innovation of automotive chip products and its leadership in industry development. As early as 2015, Halo Microelectronics' independently developed DC/DC chips were incorporated into Qualcomm's global automotive-grade platform reference design. Up to now, Halo Microelectronics' automotive-grade products have been applied to car brands from China, Germany, Japan, Korea, and other countries.



## ● Intellectual Property Protection

Halo Microelectronics places great emphasis on invention and innovation and insists on integrating patent creation throughout the project research and development and production operations.

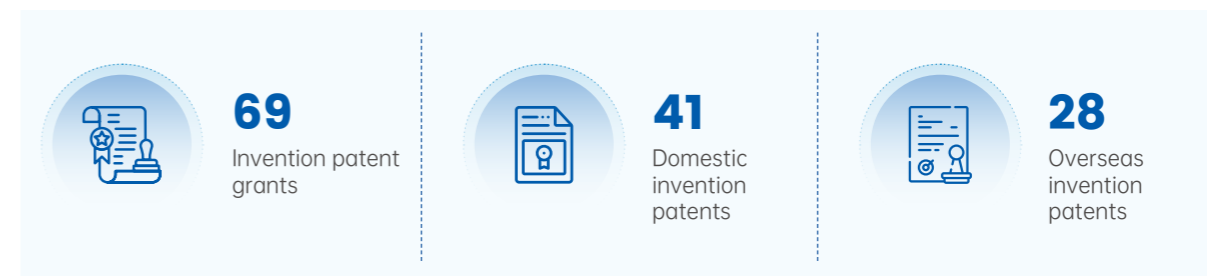
In accordance with the Patent Law of the People's Republic of China, the Detailed Rules for the Implementation of the Patent Law of the People's Republic of China, and other laws, regulations, and related provisions, the Company has established a Patent Management Committee, which is overall responsible for the Company's patent-related work. The Company has formulated the Intellectual Property Management Measures, completing the management systems of research and development, and intellectual property, supporting and promoting technological breakthroughs and the application and promotion of achievements, and expanding the Company's leading business advantages.



With the extensive experience of the founding team in the field of analog chips and the continuous research and development by the central technical team, Halo Microelectronics has formed a core technology system with strong industry competitiveness, playing a crucial role in each series of main products. As of the end of the reporting period, the Company possesses 8 main core technologies, all of which are independently developed. Each core technology has applied for intellectual property protection, as detailed in the following table:

No.	Core Technology Category	Source	Introduction	Application Scenario
1	High-performance DC/DC conversion technology	Independent research and development	Innovative hysteresis control method to achieve rapid load dynamic response, high efficiency, low ripple, and smooth switching between control modes	Consumer electronics such as smartphones
2	Lithium battery fast charging technology	Independent research and development	Efficient switch-mode charging and hybrid fast charging circuit topology to meet the changing fast charging needs during the lithium battery charging cycle	Consumer electronics such as wearable devices
3	Charge pump super-fast charging technology	Independent research and development	High-efficiency and high-reliability charge pump buck topology and corresponding driving and protection circuit technologies	Consumer electronics such as smartphones
4	Power conversion technology	Independent research and development	Including high-performance AC/DC conversion topologies and corresponding closed-loop control algorithms, as well as high-reliability high-voltage power device gate driving and other analog integrated circuit technologies.	White goods, industrial control servo systems, etc.
5	High-performance general-purpose analog integrated circuit modules	Independent research and development	Various high-performance analog integrated circuit modules, including LDOs, charge pumps, AD converters, current detectors, multipliers, driver circuits, etc.	Consumer electronics, automotive electronics, etc.
6	Efficient and high-flexibility wireless charging technology	Independent research and development	Including various new receiver-end power conversion topologies for low-frequency wireless fast charging and high-frequency wireless charging system architecture and control methods supporting high flexibility	Consumer electronics such as smartphones and wearable devices
7	Automotive and industrial-grade analog integrated circuit technology	Independent research and development	Including high-performance power conversion and load switch analog integrated circuit technologies with high stability, safety, and reliability	Automotive electronics, data centers, etc.
8	Port protection and signal switching circuit technology	Independent research and development	Including port ESD circuit protection, surge protection, and load switch anti-lock protection circuit technologies to achieve port protection and signal switching with minimal impact on signal bandwidth.	Consumer electronics such as smartphones and laptops

As of the end of the reporting period, Halo Microelectronics has obtained a total of 69 invention patent grants, including 41 domestic invention patents and 28 overseas ones, with a patent application grant rate of 100% over the past five years.



All of Halo Microelectronics' patents are applied to products, with core technologies utilized in the design of main products such as DC/DC chips, super-fast charging chips, lithium battery fast charging chips, port protection chips, signal switching chips, and automotive and industrial grade products. It has not only established a leading technical position of its products within the country, but also made continued efforts to realize industrial application.

### Patent Technology Application Boosts Product Development

#### Patents Empower Product Upgrades and Iterations

Since being proposed in 1965, the spirit of innovation embodied by Moore's Law has been driving the semiconductor industry forward and continuously changing the world. As a company that upholds the spirit of innovation, Halo Microelectronics keeps breaking through its limits, leveraging core patents that encapsulate innovative technologies to facilitate the upgrade and iteration of products. Leveraging core research achievements such as high-performance DC/DC conversion technology, lithium battery fast charging technology, and charge pump super-fast charging technology, the Company has developed a series of products that are highly efficient, low power consuming and highly reliable which greatly improve user experience and receive wide market recognition. For example, for wearable device applications, the Company has launched several high-performance charging chips to provide users with a more efficient, safer, and more reliable charging experience.





### HL7095, an I<sup>2</sup>C-controlled single-battery charging management chip with two LDOs

Product advantages:

- 1. A wider input operating voltage to help enhancing power efficiency and energy savings.** The HL7095 supports a wide input operating voltage ranging 3.9 V to 12 V, meeting the needs of various fast charging scenarios. It not only improves the power supply's reliability, stability and efficiency, but also saves energy, reduces power loss, and decreases the failure rate of the power supply.
- 2. Dual LDO integration upgrade to satisfy lightweight and portable needs.** The HL7095 integrates two LDOs, capable of powering accessories such as headphones or LEDs, making it an ideal choice for small-sized wearable devices. This product effectively simplifies system design, achieving the lightweight and portability of wearable devices, and bringing a more convenient and flexible user experience.
- 3. Innovative power management technology to effectively extend battery life.** The HL7095 facilitates quick battery charging with +/-0.5% charging voltage accuracy and a 10 mV step size. Under low quiescent power consumption in transportation mode and efficient reverse boost mode, the HL7095 can significantly extend device use time and reduce battery power consumption, effectively addressing power management issues in wearable devices.

### HL7132D, a novel dual-phase 30 W charge pump charging chip with a 1:2 reverse boost mode

Product advantages:

- 1. Smaller chip size to enable higher design flexibility for products.** Compared to competitive products from other companies, the HL7132D has a smaller packaging size, thereby reducing the area taken by the system and enabling higher system-level design flexibility, making the overall solution more compact.
- 2. Reduced heat loss to efficiently enhance product battery life.** Compared to competitive products from other companies, the HL7132D has a higher energy utilization rate, which means less energy loss and heat production that enhances the product's energy-saving and environmental performance, efficiently improving battery life, and providing users with a more lasting usage experience.
- 3. More precise temperature regulation to effectively extend product lifespan.** Compared to competitive products from other companies, the HL7132D features a unique chip temperature regulation function. With this function, the HL7132D can better control and regulate chip temperature, thereby improving system stability and reliability, extending the product's lifespan, and offering users an exceptional use experience.



## Ensuring Product Quality

Upholding the quality motto of "Quality is the Lifeline," Halo Microelectronics is committed to ensuring exceptional product quality, steadfastly providing customers with high-quality products and services. The Company adheres to the ISO 9001 Quality Management System - Requirements, has established a comprehensive quality management system and drafted a Quality Manual to strictly control product delivery standards. Quality policies, objectives, audit results, data analysis, corrective and preventive measures and management reviews are implemented and followed to guarantee continuous improvement in quality, services (including delivery), price, technology and management.



Quality objective at company level:

Exporting defective rate for consumer products < 100 ppm;

Out-of-factory defective rate for automobile grade products < 1 ppm.

## Business Continuity Management

To further refine the Company's operational management mechanisms, reduce or eliminate the impact of various factors that may cause significant business operation interruptions, quickly restore business interrupted under special circumstances and enhance the Company's business continuity management capability, an organizational guarantee has been provided by establishing a Business Continuity Management Committee. Working Rules of the Business Continuity Management Committee has been formulated to ensure the orderly and effective operation of the Committee and fully leverage its role in the Company's business and management. In terms of institutional guarantees, the Company has developed the Business Continuity Management Procedures and put strong efforts to establish a business continuity management system that aligns with its strategic objectives so as to ensure the continuous operation of the business.

The Company emphasizes prevention of business interruption by establishing prevention and early warning mechanisms to effectively integrate daily management with emergency response. People is prioritized with a focus on ensuring personnel safety. It implements differentiated management to ensure the rapid and orderly restoration of critical business under special circumstances, while considering the cost and benefits of business continuity management. Coordinated and collaborative operations are insisted, with emphasis put on communication and coordination among departments to form an effective overall mechanism for responding to operational interruptions.

## Regulating Suppliers Management

Given the characteristics of the Fabless business model, the stability of Halo Microelectronics' product quality is highly related to the production level of manufacturing suppliers. The Company strictly controls supplier admission and dynamically adjusts its supplier list, and has formulated the Supplier Management Control Procedures and Supplier Production Operation Standards to clarify work principles and processes for suppliers. Suppliers of the Company must strictly follow the relevant policies to ensure that their product quality meets the Company's and customers' needs.



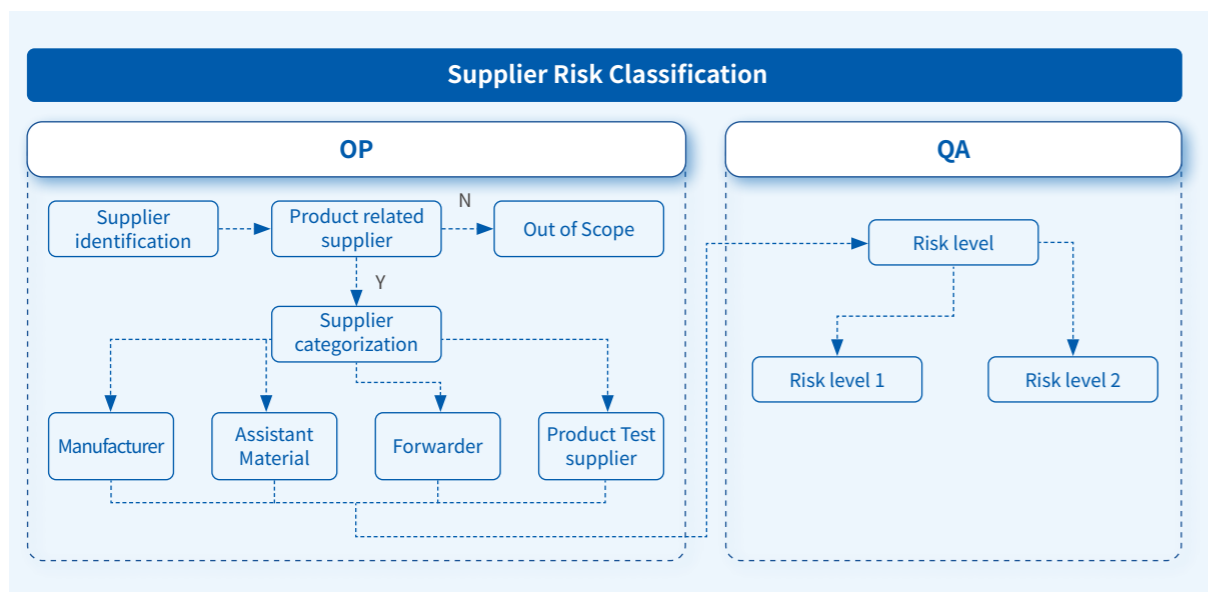
## Supplier Confirmation



## Supplier Risk Management

Halo Microelectronics has established a system of Supplier Risk Management to improve the risk classification process system, determine their risk levels and develop targeted risk response measures for risk management.

Risk Categorization Flow



Supplier Risk control			
Risk Level	Category	No	Risk
I	Manufacturing	1	Supplier operation stop due to financial issue
		2	Capacity limitation caused delivery failure
		3	Products damage due to poor ESD protecting
		4	No Standard procedure caused NPI failure
		5	Products Damage during manufacturing
		6	Wrong material used for production
		7	Expired material used for production
		8	Wrong tooling used for production
		9	Wrong operation due to poor training
		10	Measurement system is not accurate
		11	Inspection unable to detect disqualified products
		12	Wrong process parameter was applied
		13	Poor process control caused low yield and non-conformity products
I	Labeling	1	Poor labeling process control caused Lot mixing
		2	Poor print quality caused information missing
I	Storage	1	Poor storage H/T control caused material property to deteriorate
		2	Storage control failure caused issue products deliver to customer
		3	Poor storage control caused products damage
I	Transportation	1	Products damage during transportation
		2	Failure to deliver on time

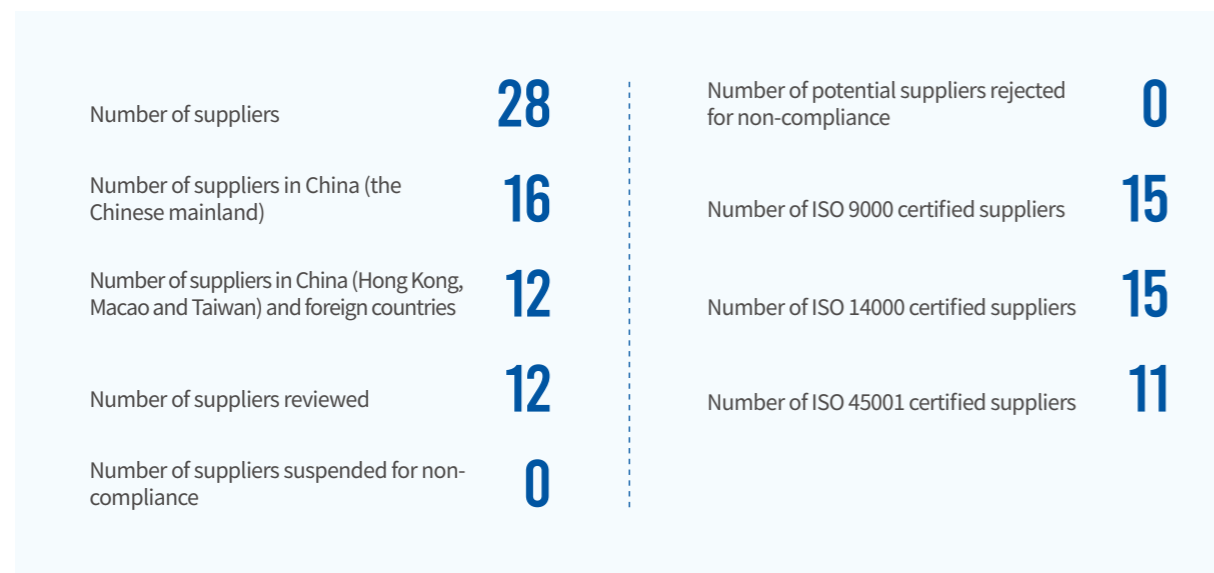
Risk Level	Category	No	Risk
II	Assistant material	1	Fail to supply
		2	Poor quality
	Logistic	1	Products damage during transportation
		2	Products Missing
		3	On time delivery failure
	II	Product Test supplier	1
2			Test equipment not calibrated

## Response to Sudden Supply Chain Risks

Halo Microelectronics is committed to developing a robust safety response mechanism of suppliers. To ensure timely prevention and effective response to sudden supply chain risks, and safeguard stable and continuous business operation, the Company has formulated an Emergency Response Plan for Sudden Incidents in the Supply Chain to specify emergency management of sudden incidents in the supply chain. In order to effectively implement this Plan, the Company, following the principle of "nimble response and efficient operation," has established an emergency organizational structure for sudden incidents in the supply chain, in accordance with the requirements of business continuity management and emergency response. This organization includes an emergency leadership team, an emergency command team, an emergency execution team, and an emergency support team.

Based on the supplier management system, Halo Microelectronics has established a strict supplier review mechanism to conduct regular supplier reviews, continuously optimize the supplier structure and improve supplier quality.

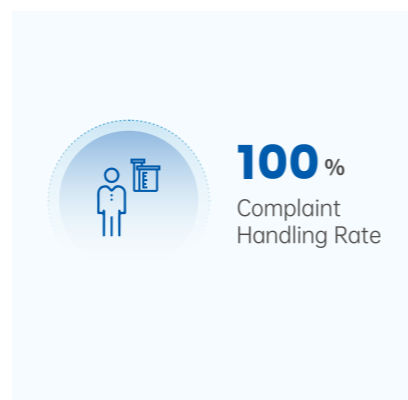
Person in charge	Duty
Quality Assurance Team	To organize the initial and quarterly reviews for production suppliers
Quality Assurance Team, Supply Chain Team	To conduct reviews of production suppliers
Quality Assurance Team	To summarize review results and notify the reviewed suppliers
Quality Assurance Team	To maintain the qualified supplier list
Deputy General Manager of Engineering	To approve the qualified supplier list



## ● Valuing Customer Experience

Upholding the principle of Customer Priority, Halo Microelectronics regularly conducts customer satisfaction surveys, viewing customer feedback as a powerful means to drive technological improvement and business development. In response to complaints, the Company has established systems such as Customer Complaint Handling Procedures and Customer Complaint Analysis Procedures, put strict control over after-sales services, aiming to optimize customer experience and seize opportunities for continuous improvement.

In 2023, complaints were resolved on average within 9 working days, with the complaint handling rate maintained at 100%.



Since 2023, Halo Microelectronics has received numerous honors, including the "Chip Development in Yizhuang · 2023 Top 50 Automobile Chips," the "Best Delivery Award 2023" from vivo, the award of "2023 Annual Supporter" from Transsion Holdings, and the "Best Strategic Partner 2023" from Q Technology.

In June 2023, Halo Microelectronics, as the leading team of the project of "Configurable Multi-Channel High/Low Side Driver Chip", was included in the list of nominees for 2023 annual automotive-grade chip technology initiative "Unveiling Commanders" for major tasks.

### Halo Microelectronics Wins the "Best Delivery Award 2023" from Vivo

On December 13, 2023, the global leading smartphone brand Vivo held the 2023 Quality Communication Meeting with Business Partners in Dongguan, Guangdong, attended by Vivo partners from around the world. At this Meeting, Halo Microelectronics was honored with the "Best Delivery Award 2023" by Vivo.



## ● Focusing on Information Security

### Information Security Management System

Halo Microelectronics places great importance on the construction and perfection of its information security system, has formed a comprehensive Information Security Management System (ISMS) and technical support scheme that cover network systems, physical environments, document data security, and monitoring of user behavior, effectively safeguarding customer confidential information, key data security, and reputation, and providing customers with a reliable information security defense.

Physical Environment Security

- Access control/entry systems, video surveillance and intrusion detection systems are used to restrict access to these critical areas to authorized personnel only.
- Each machine room is equipped with temperature warning and fire alarm devices to ensure the safety of data and equipment in emergencies.
- The Company keeps enhancing the power supply assurance of computer systems, increases the capacity of Uninterruptible Power Supply (UPS) systems in physical machine rooms, and has adopted cloud-based service assurance solutions for core business systems to further enhance the physical security assurance of the system.

**Network System Security**

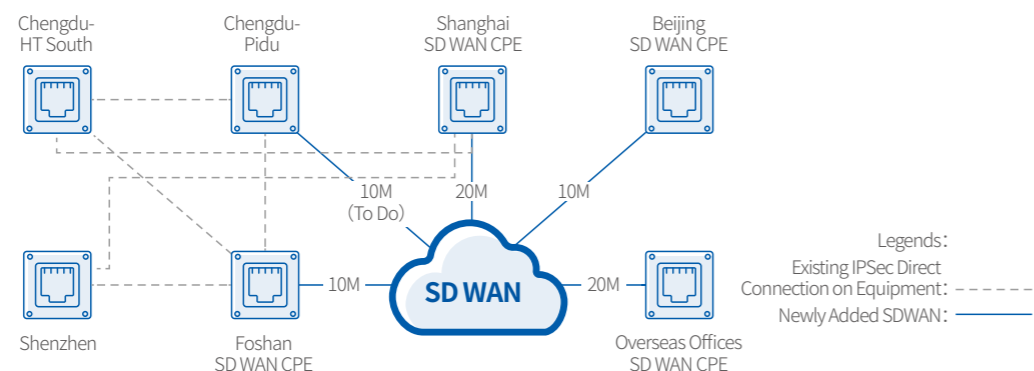
The Company employs firewalls, resource monitoring systems, and security updates to prevent unauthorized access, malware and cyberattacks.

Regular vulnerability scanning and penetration testing are conducted to promptly address potential security vulnerabilities. The implementation of Virtual Private Networks (VPN) and encrypted communication ensures the security of data during transmission.

Establishing secure Wi-Fi networks, restricting device access, and strengthening the management of network devices are also crucial steps in ensuring the safety of network systems.

Halo Microelectronics has introduced a mature computer resource monitoring management system, providing 24/7 monitoring of all server/firewall/switch/network connections and other core resources across the Company's data centers. In case of resource abnormalities, alerts are sent to relevant managers through corporate WeChat/email and other means, ensuring the secure operation of the Company's critical system resources.

In 2023, Halo Microelectronics established a cloud-network strategic partnership with China Unicom, using its comprehensive global network resources to build dedicated network interconnections for the Company's domestic and overseas offices. The cloud-network has been successfully deployed in Foshan, Beijing, Shanghai and other locations abroad, significantly enhancing network security and reliability.



**File Data Security**

The Company implements access control, allowing only authorized personnel to access specific files and data. Important data is encrypted to prevent unauthorized access during data transmission and storage. Data is regularly backed up, and the secure storage of backup data is ensured for restoration when needed.

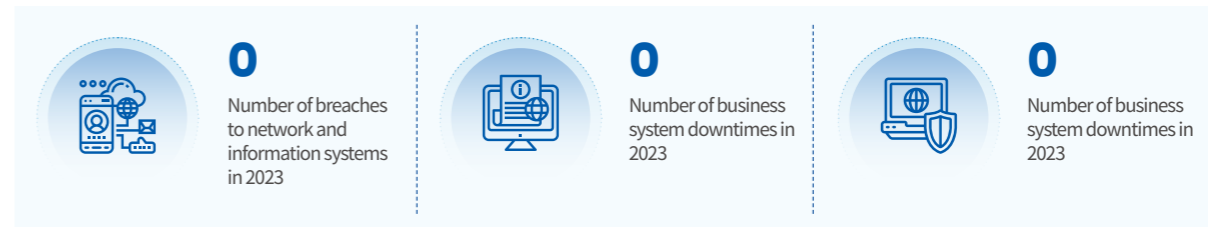
Halo Microelectronics' IT Department employs various methods to ensure file and data security, including BitLocker hard drive encryption, OneDrive cloud drive backup and NAS dedicated storage device backup. In 2023, the Company initiated research on implementing a file classification and encryption system, which classifies important files of the Company into several levels such as top secret, confidential, secret and internally controlled. Files of different security levels are accessed and managed by colleagues with corresponding permissions, ensuring that files, even if illegally copied and disseminated, cannot be opened.

**User Behavior Regulation**

The Company enforces a strong password policy and requires employees to regularly change their passwords. A user account management procedure is established to timely disable accounts that are no longer needed.

Monitoring of employees' internet activities to promptly identify any abnormal behavior. Training is provided to make employees aware of best security practices and emphasize the risks of social engineering attacks. An audit mechanism is established to track and review user activities, ensuring that they comply with the Company's security policies. In domestic offices, the Company has implemented USB copy permission control, allowing only registered and authenticated USB drives to be used on office computers, test benches and external computers.

In the first half of 2023, the Company implemented remote access and mobile device management policies based on the Office365 system, ensuring that only company computers and certified personal mobile devices can access critical resources such as company email, cloud storage, and document service sites. This further strengthens the security of critical company information while eliminating unsafe external access.



## Dedication to Society for Common Benefit

### Accelerating Collaborative Development

As a multinational corporation, Halo Microelectronics places great emphasis on team building both domestically and internationally, reinforcing the development pattern of "taking domestic major circulation as the focus, with domestic and international dual circulations reinforcing each other." Through organizational restructuring and international collaborative efforts, the Company is promoting economic exchanges and collaborative development among regions both at home and abroad.

While continually innovating and providing customers with higher quality products, Halo Microelectronics keeps deepening industry exchanges, shares research resources and cutting-edge technological knowledge to expand the breadth and depth of technological research, collaborates with the industry, academia and research institutions to tackle industrial challenges, and accelerates the research and application of new technologies, sharing the dividends of development with all stakeholders.

### Halo Microelectronics Signed the Share Purchase Agreement and Intellectual Property License Agreement with Navitas Semiconductor Corporation

In 2023, Halo Microelectronics collaborated with Navitas Semiconductor Corporation (NASDAQ: NVTS), which specializes in the third generation of semiconductors such as gallium nitride and silicon carbide, and signed the Share Purchase Agreement and Intellectual Property License Agreement.

Through this transaction, Halo Microelectronics will better focus on high-performance analog products for key target markets and related application scenarios; At the same time, by acquiring the shares of NVTS, the Company can share the benefits of Navitas Semiconductor Corporation's further development in the third generation semiconductor field, and achieve a win-win situation of 1+1>2.

### Commitment to Enterprise-University Cooperation

On the basis of self-developed new products and new applications in-house, Halo Microelectronics endeavors to participate in enterprise-school partnership to forecast future-proof new technologies. Our partners encompass eminent research universities and research institutions from all around the globe. Efforts will be made to promote the deep integration of production, education and research, and help train talents for the strategy of "scientific and technological innovation".

**Research results of collaboration between Halo Microelectronics and Princeton University are granted patents**

The Halo Microelectronics-Princeton collaboration is working on a multi-output hybrid power supply architecture for the next-generation core architecture processors. Researchers from both parties jointly invented a two-stage multi-output power supply architecture based on a hybrid charge pump circuit.

In February 2023, a patent entitled "Power Conversion Circuits and Electronic Devices" (CN202211387831X) was granted to Halo Microelectronics and Princeton University. The results of the project were presented at the 3D-PEIM conference of the International Institute of Electrical and Electronics Engineers Electronics Packaging Society (IEEE-EPS) in Orlando, USA, in early February 2024 and won the best paper award at the conference.

**Halo Microelectronics Sets up "Science & Technology Innovation Award" to Support the Growth of Youths in Nanhai**

On December 30, 2023, the 20th "Zhan Tianyou Cup" Youth Science and Technology Innovation Contest in Nanhai District held its project showcase and award ceremony. The aim of the contest is to deepen the awareness of scientific innovation among young people, cultivate students' comprehensive qualities, comprehensively promote science popularization in Nanhai District, and create a strong atmosphere of "learning science, loving science, and doing science."



**Contributing to Social Welfare**

Halo Microelectronics actively practices its social responsibilities, remains committed to public welfare and dedicates care and services to society through concrete actions. The Company strictly adheres to laws and regulations such as the Company Law of the People's Republic of China, the Charity Law of the People's Republic of China, and the Law of the People's Republic of China on Donations for Public Welfare, and has formulated the External Donation Management Methods to standardize the Company's external donation activities and strengthen the management of donation-related issues, enabling the Company to better fulfill its social responsibilities. In 2023, the Company made charitable donations amounting to nearly RMB 30,000.

**Promoting Rural Revitalization**

Halo Microelectronics actively practices the national strategy for rural revitalization, fully advancing the cause of rural assistance. In 2023, the Company carried out 2 rural revitalization projects, benefiting 30 local residents.

Charitable Activities in Fengkai County



### Halo Microelectronics' Education Support Activities Help Students Pursue Their Dreams

On October 19, 2023, as a part of the Company's social responsibility practice, a charity team from Halo Microelectronics visited Qiling Village, Dazhou Town, Fengkai County in Zhaoqing City, to carry out education support activities. They showed care in the name of Halo Microelectronics and delivered warmth by passing the "Halo Strength". The Halo Microelectronics charity team provided financial and caring support to children from several families and delivered custom clothing to students at Qiling Primary School to keep them warm in the forthcoming autumn and winter. They encouraged the children to set lofty ideals and prepare themselves with knowledge.



## People-Oriented for Mutual Growth

### ● Ensuring Fair Employment

Halo Microelectronics strictly adheres to laws and regulations such as the Labor Law of the People's Republic of China, the Labor Contract Law of the People's Republic of China, and the Regulation on the Implementation of the Employment Contract Law of the People's Republic of China. It has established the Human Resources Control Procedures, which mandate that the HR and Administration Department shall select and recruit outstanding talents through public recruitment and position-based competition, as required by requirements of the Human Resource Capability Framework. The selection process follows the principles of virtue-first and talent-based, and openness, fairness and justice, with a focus on the candidates' value orientation and sense of responsibility. The Company promises to strictly implement the Provisions on the Prohibition of Using Child Labor, the Special Protection Regulations for Underage Workers as per the State Council's guidelines and EICC standards. It has developed the Child and Juvenile Workers Prevention Control Procedures to resolutely eliminate the employment of child labor and forced labor.

By the end of 2023, the Company had a total of 286 employees, with 95 new hires within the year, in which female employees accounted for 31.6%.



**286**  
Total number of employees

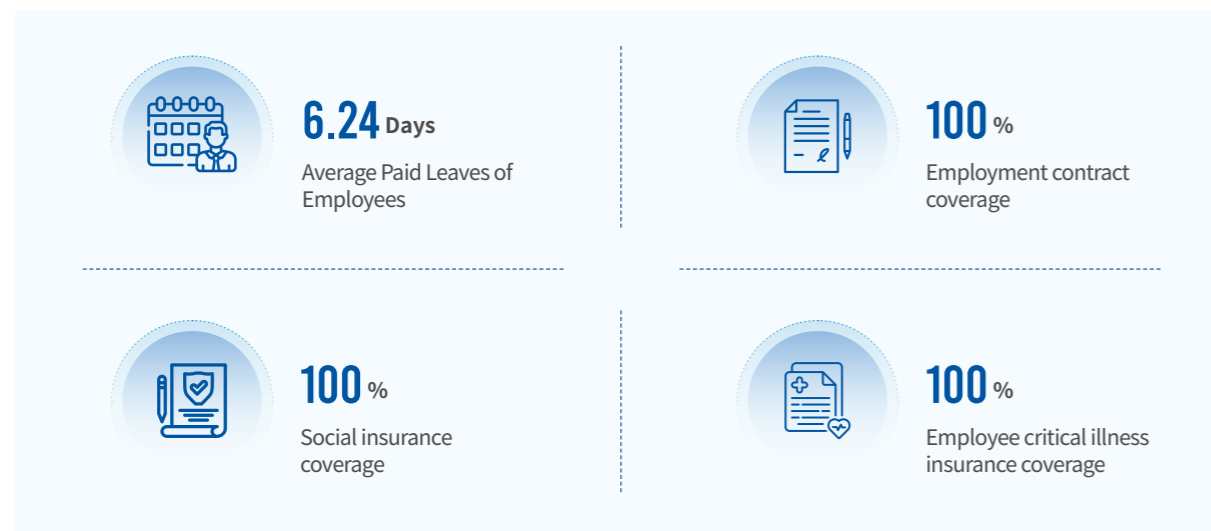
Newly hired employees	<b>95</b>	Employees in China (Hong Kong, Macao and Taiwan) and foreign countries	<b>67</b>
Newly hired female employees	<b>30</b>	Employees in China (the Chinese mainland)	<b>219</b>
Newly hired male employees	<b>65</b>	Male	<b>190</b>
		Female	<b>96</b>
Newly hired fresh graduate employees	<b>15</b>	Under 30	<b>93</b>
Newly hired social recruitment employees	<b>80</b>	30-50	<b>169</b>
		Over 50	<b>24</b>

Note: Statistics as of December 31, 2023

## Protecting Legitimate Rights and Interests

### ● Remuneration and Benefits

Halo Microelectronics has established a scientific and rational compensation management and benefits mechanism. In strict compliance with the Labor Contract Law of the People's Republic of China and the Labor Law of the People's Republic of China among other laws and regulations, it has developed the Remuneration Management Methods. In addition to standard salaries, it punctually and fully pays "five insurances and one housing fund," sets up stock incentive plans, actively supplements various special awards, and reasonably stimulates the intrinsic vitality of talents.



### ● Democratic Management

Based on laws and regulations including the Labor Law of the People's Republic of China, the Trade Union Law of the People's Republic of China, the Company Law of the People's Republic of China, and the Provisions on Democratic Management of Enterprises, and in conjunction with the Company's actual situation, Halo Microelectronics has formulated the Regulations of the Workers' Congress. With the Workers' Congress functioning as the basic approach, the Company keeps improving its democratic management system to promote democratic construction, motivate employee enthusiasm, inspire creativity, realize democratic and scientific decision-making, and promote sustained and healthy development of the Company. The Company has offered various communication channels for employees, including QR code feedback, surveys, and employee discussion sessions, to ensure the reasonable rights of employees.

### ■ Held Workers' Congress Session

On December 4, 2023, the Company held The First Session of the Second Workers' Congress 2023, which deliberated on the election of worker representatives to the second Board of Supervisors and the revision of the Management Regulations of Workers' Representatives.



### ● Supporting Career Development

Halo Microelectronics places great emphasis on human resource development and talent cultivation. It has formulated the Training Management Regulations of the Company, and established a long-term mechanism for employee training, creating a cultural atmosphere that respects knowledge and talent and cares about employees' career development. This strengthens the construction of a reserve talent pool, promotes the continuous updating of knowledge and skills for all employees, and continuously enhances employees' comprehensive abilities.

In 2023, the Company conducted **13** employee training sessions, with training expenses totaling RMB **226,300**, reaching **38** hours of training and a coverage rate of **67%** among employees.



Training in the third quarter



Training in the fourth quarter

Halo Microelectronics values employee career development and is committed to providing employees with a good platform for career development. The Company crafts scientific career paths, continually enhancing employees' abilities and values to achieve synchronized development and progress between the Company and its employees. The Company opens up the opportunity to compete for internal management positions for all employees by irregularly posting management position needs. Employees can achieve personal career development and promotion through internal competition system.



### Honors of Employees



Foshan City Artisan (Tan Xiaoliang)

## ● Safeguarding Health and Safety

Halo Microelectronics cares about the physical and mental health of employees. It has arranged annual physical examinations and organized regular sports activities for employees, including buying them gym memberships to encourage employees to balance their work and leisure and take care of physical health. Additionally, the Company has developed the Occupational Health and Safety Management Procedures, improving the management procedures for employee health management, office space management, and management of work injuries and occupational diseases to safeguard employees' physical and mental health.

In 2023, the coverage rate for Halo Microelectronics' physical examinations and health records reached 100%; investment in occupational injury insurance for employees was RMB 520,000, with a coverage rate of 100%; 145 employees participated in occupational disease examinations, ensuring all those in need are examined; and, the social insurance coverage rate reached 100%.

Halo Microelectronics actively conducts safety training to strengthen employees' awareness of safety and ensure workplace safety and personnel safety. In 2023, 58 employees participated in safety training, and the Company's safety production training lasted 8 hours.



### Fire Safety Drills Held at Qiandenghu Venture Capital Town in the First Half of 2023

In 2023, the Company collaborated with the property management to conduct fire safety drills, including expert lectures and on-site drills. These activities allowed employees to get first-hand experience in fire scenes and firefighting safety scenarios, directly feeling the importance of fire safety.



## ● Emphasizing Humanistic Care

Halo Microelectronics advocates a people-oriented approach and humanistic care, actively engaging in employee care activities, organizing diverse employee events, and striving to provide comprehensive care and protection for employees to enhance their sense of happiness and belonging.





## Refining Governance and Upholding Integrity

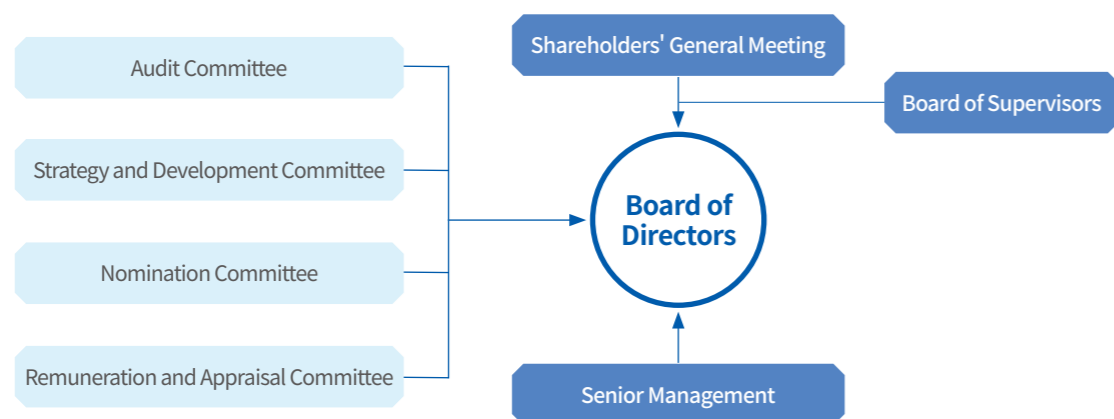
- Checks and Balances for Optimized Governance
- Risk Avoidance and Compliance Governance
- Vigorous and Resolute Actions in Rights and Interests Protection

# Refining Governance and Upholding Integrity

## Checks and Balances for Optimized Governance

### ● Lean Top-Level Structure

In 2023, Halo Microelectronics strictly followed the requirements of laws and regulations such as the Company Law, Securities Law, Guidelines on the Bylaws of Listed Companies, and Rules Governing the Listing of Stocks on the Science and Technology Innovation Board of Shanghai Stock Exchange, and updated the Articles of Association of Halo Microelectronics Co., Ltd. in accordance with its actual situation. Following the principles of science, simplicity, efficiency, transparency and checks and balances, the Company has, considering factors such as its development strategy, cultural philosophy and management requirements, reasonably established internal functional organs, clearly defined the responsibilities and authorities of each organ to avoid function overlapping and gaps, or excessive concentration of powers and responsibilities, and formed a working mechanism where duties are clearly defined, responsibilities are taken seriously, and mutual checks and coordination are achieved.



Halo Microelectronics has set up the Audit Committee, Strategy and Development Committee, Nomination Committee, and Remuneration and Appraisal Committee under the Board of Directors, and drawn up the scope of duties and detailed implementing rules for each special committee to fully leverage their specialized advantages, guarantee the legitimacy, scientificity and correctness of the collective decisions of the Board of Directors, and reduce the operation risk of the Company.



### ● Diverse Board Governance

Halo Microelectronics is committed to optimizing the corporate structure and continuously improving the corporate governance system to ensure sustainable and stable development of the Company. The Company attaches importance to the diverse composition of its management team. The selection of the members of the Board of Directors and Supervisors is not based on physical characteristics such as gender, age or social characteristics such as ethnicity, nationality, religious beliefs and economic conditions.



Halo Microelectronics has established the Independent Director Work System to strengthen the supervision and monitoring of company decisions. Independent directors are not controlled by the Company and do not engage in daily business activities. They fully exercise their independence and professionalism, independently judge and objectively comment on major company matters to ensure the fairness and legality of company decisions.

In addition to advising the Board of Directors on the remuneration policy and procedures, the Remuneration and Appraisal Committee under the Board of Directors also carries out review of the remuneration system and criteria set for the directors and the senior management by taking into relevant and reasonable factors such as the remuneration level in comparable companies, duties and duration of incumbency, business performance of the Company and potential future risks, then submits the results from their review to the Board for further consideration. The Company discloses the remuneration of directors, supervisors and senior management in the annual report each year, and explains the decision-making process, basis of determination and actual payments for remuneration to enhance the transparency of remuneration for directors, supervisors, and senior management, thereby safeguarding the legitimate rights and interests of all shareholders.

In addition, the Company has purchased liability insurance for directors, supervisors and senior management personnel.

## Risk Avoidance and Compliance Governance

### ● Optimizing Risk Mechanism

Halo Microelectronics places great emphasis on risk management. Guided by its development strategy and in conjunction with the actual situation of production operations, and management, the Company has established a standardized and effective risk management and internal control system to continuously enhance risk prevention capabilities and management levels as well as ensure safe and stable operation.

Establishment of Three Lines of Defense



### Risk identification and early warning

Halo Microelectronics has developed the Risk and Opportunity Control Procedures to improve its risk and opportunity management work. The Company organizes annual management review meetings through the QMS, which includes a refreshed review of various risks and opportunities the Company faces, so as to assess identified risks and formulate corresponding strategies.

### Risk control and tracking

Halo Microelectronics focuses on the categorized, hierarchical and centralized management of major decisions, risks, and events, with procedures such as Human Resource Risk Control Procedures and Supplier Risk Management developed. It has constructed a key risk response list to clarify the division of responsibilities between leading and executing departments for risk. For significant emergency risk events, 5 emergency plans have been developed to fully implement responsibilities of risk management among all staff.

**1. The Company collects risk responsibility events from various departments every quarter for risk analysis and the formulation of response measures.**

**2. The Company reviews and refreshes the Risk and Opportunity Assessment Table every year.**

### ● Optimizing Internal Control Compliance

Halo Microelectronics is promoting the establishment and improvement of internal control systems and processes in accordance with the Internal Control Assessment Management Methods and its supporting application guidelines. The Internal Audit and Internal Control Departments implement internal control assessment work according to the supporting evaluation guidelines, checking and evaluating the effectiveness of internal control implementation. The Company conducts annual internal audit to audit domestic companies and overseas subsidiaries regularly, with internal audit reports issued.

Halo Microelectronics pays attention to regulatory compliance management construction. It has formulated the Internal Compliance Procedures for Export Control, Information Confidentiality Management System, and Code of Conduct for Business Secret Management in accordance with relevant national laws and regulations, strengthening the Company's compliance management in export control and commercial secrets. Specific requirements and processes for company compliance management have been clarified.

Contract Review	Administrative Document Review	Investigation of export control compliance	Other System Reviews
The Company has formulated the Contract Management Methods to manage the process of contract signing, performance, modification and termination, dispute resolution, and contract archival management, aiming to reduce risks, prevent contractual disputes and improve economic efficiency.	The Company has established the Administrative Document and Information Circulation Control Methods to strengthen the supervision of internal documents and ensure the security and accuracy of information during its circulation.	The Company has developed the Internal Compliance Procedures for Export Control to mitigate trade compliance risks.	The Company has developed the Documented Information Control Procedures to make sure that the internal systems are reviewed by relevant departments before being released.

Halo Microelectronics places great importance on the construction of compliance awareness, actively organizing internal legal and compliance studies, regularly conducting compliance training, organizing company-wide compliance training every year to clarify compliance standards and requirements in daily work. Training is combined with real cases to help employees understand the importance of compliance better, further enhance their compliance awareness, and foster good compliance habits.

## ● Strictly Observing Business Ethics

Halo Microelectronics strictly adheres to business ethics, upholds the principle of fair competition, actively participates in market competition, and continuously enhances its core competitiveness. The Company explicitly prohibits unfair competitive practices, emphasizes integrity in business, and maintains market order. In the meantime, it focuses on maintaining good cooperative relationships with partners, jointly promoting the healthy development of the industry.

Halo Microelectronics adopts a "zero tolerance" policy towards corruption and bribery, committed to creating a clean working environment. The Company keeps improving the anti-corruption system, and has formulated the Integrity and Anti-corruption Management Methods to strengthen the construction of company working style and promote a culture of integrity.

To strengthen the internal management and supervision of the Company and promote the standardization and compliance of business activities, Halo Microelectronics has taken a series of measures: developing the Distributor Registration and Level Management Regulations, and requiring the completion of the Halo Microelectronics Distributor Survey Form and Halo Microelectronics Distributor Customer Reporting Application Form to ensure standardized and compliant operations. It requires suppliers to sign the Supplier Integrity Practice Commitment to promise that they will adhere to the Company's relevant integrity practices and regulations and conduct regular self-inspections. The Company has formulated the Gift Receipt Registration Form and the Integrity Violation Complaint Acceptance Registration Form, encouraging integrity violation reporting.



105

Number of participants of anti-corruption training  
Number of participants of anti-corruption training

### 📄 Hosting an "Integrity and Anti-corruption Promotion and Education" Event

In June 2023, the Company conducted a training session on "Integrity and Anti-corruption Promotion and Education", which is themed on the Integrity and Anti-corruption Management Methods, explains articles of law with cases, and introduces the Company's 17 codes of conduct of integrity and honesty, thereby guiding employees to take "faithfully fulfilling duties and integrity" as the foundation in their work and life, and creating a clean and honest culture of the Company.



## Vigorous and Resolute Actions in Rights and Interests Protection

### ● Investor Relation Management

Halo Microelectronics places high importance on investor relations management, strictly adhering to the Company Law, Securities Law, Work Guidelines for the Investor Relations Management of Listed Companies, Articles of Association, and other legal and regulatory requirements. The Company has formulated the Investor Relations Management System to standardize the management of investor relations, while keeps enhancing the level of investor relations management, deepening investors' understanding of the Company on an ongoing basis, comprehensively improving investor communication channels, and engaging in multidimensional exchanges and interactions, to help with investors' understanding and value recognition of the Company's business.



Investor research activities



hosted performance presentations  
**3** times



engaged in SSE e-interactions  
**14** times



answered investor calls  
**49** times



published investor relations activity summaries  
**16** times

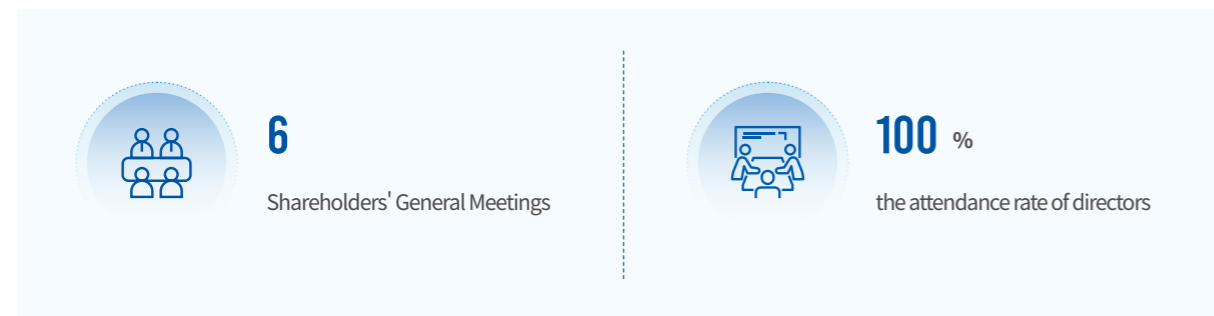


cumulatively received investors  
**511** person-times



## ● Protection of Shareholders' Rights

Halo Microelectronics continuously improves the corporate governance structure in strict accordance with relevant laws, regulations, and departmental rules, operates in compliance with legal and regulatory requirements, ensures that the convening and decision-making processes of meetings of Shareholders, Board of Directors and Board of Supervisors are legal and effective. Directors, supervisors and senior management diligently fulfill their duties to ensure orderly production and operational activities. The Company treats all investors equally, ensuring investors' rights to be informed about and participate in major matters. It proactively communicates and exchanges with shareholders, especially minority shareholders, through various channels, facilitating broad investor participation and decision-making, especially for minority shareholders. It fully listens to the opinions and demands of minority shareholders, promptly responds to their concerns, and effectively safeguards the lawful rights of shareholders to exercise their rights.



## ● Standardizing Information Disclosure

Halo Microelectronics strictly adheres to the stipulations of the Securities Law, Company Law, Measures for the Administration of Information Disclosure by Listed Companies, Rules Governing the Listing of Stocks, and the Company's Articles of Association. It has formulated the Information Disclosure Management System to improve the construction of the Company's information disclosure system, ensuring that the information disclosed is truthful, complete and accurate, in order to protect the legal rights and interests of the Company, shareholders, creditors and other stakeholders.

In 2023, Halo Microelectronics disclosed 4 periodic reports and issued 94 temporary announcements on Shanghai Stock Exchange. During the reporting period, there were no instances of regulatory criticism, condemnation or punishment for violations of information disclosure. The information disclosure obligations as a listed company have been effectively fulfilled.

Halo Microelectronics has established a sound financial reporting system and information disclosure policy, ensuring timely and fair disclosure of financial information and guaranteeing the truthfulness, accuracy, completeness, clarity and comprehensibility of the disclosed information. The Company hires external auditing institutions annually to provide audit opinions on the effectiveness of its annual financial statements and internal controls within financial reports.

# Outlook

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Everything renews as time progresses.

Still aiming at becoming an international leading company in the segmented tracks of the analog chip field, Halo Microelectronics will continuously deepen the concept of green development, support the achievement of "dual carbon" goals and solidify the effectiveness of responsible management. It will still value customer relationship maintenance, ensure product quality, refine process management, and pay attention to risk control and compliance. Integrity supervision will be strengthened, with social responsibilities shouldered to profoundly empower high-quality enterprise development, steadfastly focus on the R&D of products with high difficulty, high value, and high technological barriers in its strive to break through technological bottlenecks and enhance the core competitiveness of domestic chips. Halo Microelectronics is determined to make greater contributions to global technological progress and industrial development, and shine brightly on the world stage for domestic chips.

# Appendix

## Key Performance Indicators (KPI)

Indicator	Unit	2023
R&D investment	RMB million	237
Proportion of R&D investment	%	60.32
Proportion of R&D personnel	%	64.34
R&D personnel with Ph.D.	%	9.24
R&D personnel with Master's degree	%	32.61
R&D personnel with Bachelor's degree	%	53.26
R&D personnel with college degree	%	4.89
Core Technologies	item	8
Invention patent grants	item	69
Patents of domestic inventions	item	41
Patents of overseas inventions	item	28
Number of suppliers	—	28
Suppliers in China (the Chinese mainland)	—	16
Suppliers in China (Hong Kong, Macao and Taiwan) and foreign countries	—	12
Suppliers reviewed	—	12
Suppliers suspended for non-compliance	—	0
Potential suppliers rejected for non-compliance	—	0
ISO 9000 certified suppliers	—	15
ISO 14000 certified suppliers	—	15
ISO 45001 certified suppliers	—	11
Complaint handling	%	100
Breaches to network and information systems	time	0
Business system downtimes	time	0
Network security incidents and significant anomalies	time	0
Total number of employees	person	286
Newly hired employees	person	95
Newly hired female employees	person	30

Indicator	Unit	2023
Newly hired male employees	person	65
Newly hired fresh graduate employees	person	15
Newly hired social recruitment employees	person	80
Employees in China (Hong Kong, Macao and Taiwan) and foreign countries	person	67
Employees in China (the Chinese mainland)	person	219
Male	person	190
Female	person	96
Under 30	person	93
30-50	person	169
Over 50	person	24
Average paid leaves of employees	day	6.24
Employment contract coverage	%	100
Social insurance coverage	%	100
Employee critical illness insurance coverage rate	%	100
Number of employee training	time	13
Employee training expenditure	RMB 10,000	22.63
Length of employee training	hour	38
Employee coverage of training	%	67
Coverage of physical examinations and medical records	%	100
Investment in occupational injury insurance for employees	RMB 10,000	52
Coverage rate of occupational injury insurance for employees	%	100
Participants in occupational disease physical examination	person	145
Employees participating in safety training	person	58
Length of workplace safety training	hour	8
Number of Shareholders' General Meetings	time	6
Attendance rate of directors	%	100
Number of meetings of the Board of Directors	time	13
Number of meetings of the Board of Supervisors	time	13
Meetings of Audit Committee held	time	8
Meetings of Nomination Committee held	time	1
Meetings of Remuneration and Appraisal Committee held	time	3
Meetings of Strategy and Development Committee held	time	4

Indicator	Unit	2023
Number of directors	person	8
Female directors	person	2
Independent directors	person	3
Female independent directors	person	1
Participants of anti-corruption training	person	105
Performance presentations held	time	3
SSE e-interactions	time	14
Investor calls answered	time	49
Investor relations activity summaries released	time	16
Cumulative number of investors received	person-time	511
Periodic reports disclosed	—	4
Interim announcements released	—	94

## Index

	Contents	GRI Standards	UN SDGs
Harmonious and Co-prosperity to Build a Land of Hope	Technology Empowerment for Efficiency and Reduction in Consumption		
	Proactive Approach to Green Operations	GRI 301, GRI 302, GRI 303, GRI 304, GRI 305,	SDG 6, SDG 7, SDG 13,
	Energy Saving and Emission Reduction for Efficient Resource Use	GRI 306, GRI 307, GRI 308	SDG 14, SDG 15
	Moving Towards Green with Low-carbon Office Practices		
Mutual Promotion for Win-Win, Upholding the Spirit of Halo Microelectronics	R&D Support, Quality Prioritized	GRI 204, GRI 308, GRI 414, GRI 416, GRI 417, GRI 418	SDG 9, SDG 12, SDG 17
	Dedication to Society for Common Benefit	GRI 413, GRI 415	SDG 1, SDG 2, SDG 3, SDG 4, SDG 9, SDG 10, SDG 11
	People-Oriented for Mutual Growth	GRI 401, GRI 402, GRI 403, GRI 404, GRI 405, GRI 406, GRI 408, GRI 409	SDG 3, SDG 4, SDG 5, SDG 8, SDG 10, SDG12
Refining Governance and Upholding Integrity	Checks and Balances for Optimized Governance	GRI 2	SDG 5, SDG 10, SDG 16
	Risk Avoidance and Compliance Governance	GRI 205, GRI 206, GRI 419	SDG 12, SDG 16
	Vigorous and Resolute Actions in Rights and Interests Protection	GRI 205, GRI 206	SDG 16, SDG 17



## Questionnaire

Dear Stakeholders,

Hello! Thank you for reading the 2023 Environmental, Social and Governance (ESG) Report of Halo Microelectronics Co., Ltd. In order to provide valuable information to you and other stakeholders, and to promote continuous improvement in our environmental, social, and governance practices, we earnestly hope to receive your valuable feedback and suggestions on this report. We look forward to your evaluation. Once again, thank you for your support of our work!

1. What type of stakeholders do you belong to?

- Stockholders and Investors   
  Customers   
  Employees   
  Government and Regulatory Authorities  
 Suppliers and Partners   
  Communities   
  The Public and Media   
  Others

2. Your overall comment on this report:

- Excellent   
  Good   
  Average

3. Do you think the ESG performance of Halo Microelectronics is fully presented in this report?

- Yes   
  Partially   
  No

4. Do you think the information, data and indicators disclosed in this report are clear, accurate and complete:

- Yes   
  Partially   
  No

5. Do you think the content arrangement and graphic design of this report are clear, understandable and legible:

- Yes   
  Partially   
  No

6. What other information that you are concerned about is not disclosed in this report?

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7. Any other suggestions regarding Halo Microelectronics' information disclosure and practice of the ESG concept?

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## Disclaimer

The information contained in this report does not constitute any investment advice. Investors should not replace their independent judgment or make decisions solely based on such information. The Company does not assume any responsibility for losses that arise or may arise from the use of information in this report. The information published by the Company is true and accurate. In the event of any inconsistency with statutory disclosure documents, the statutory disclosure documents shall prevail.

If this report contains forward-looking statements, it does not constitute a constraint on the Company's future actions, and the Company is not obligated and does not undertake to revise forward-looking statements (if any) contained in this document.

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