



**ESPRESSIF**  
**乐鑫科技**

**SHARE :: CONNECT :: INNOVATE**



**Q2**

**Half-Year  
Report  
2022**

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# About Espressif

Espressif Systems is a public, multinational, fabless, semiconductor company focused on developing cutting-edge, wireless-communication, low-power chipsets. By leveraging wireless computing, we provide green, versatile and cost-effective AIoT solutions. We have accomplished a hardware-and-software, closed-loop development cycle for a series of core technologies, including RF, Wi-Fi & Bluetooth LE network protocol stacks, RISC-V MCUs, AI instruction sets and algorithms, operating systems, toolchains, compilers, IoT software application frameworks, Cloud, etc.

We have a diverse team of engineers from around the world. All company branches employ more than 550 members of staff from almost 30 countries and regions, +76% of whom are based in our Research & Development Department. We have eight R&D centers in five countries, including China (4 out of 8), India, the Czech Republic, Brazil and Singapore. The company's increasing reputation in recent years has been instrumental in attracting talented engineers from across the world. Being united by our passion for technology, our diversity is our strength, as it allows the creative blending of different kinds of knowledge, perspectives and ways of thinking.



global Wi-Fi MCU  
market share\*



products distributed  
all over the world



millions of users



## Our R&D Centers

### China

- Shanghai
- Suzhou
- Hefei
- Wuxi

### Brazil

- Campinas

### India

- Pune

### Czech Republic

- Brno

### Singapore

\* Market share data from TSR

# Facts About Espressif



**8**  
R&D  
centers

**76%**  
R&D  
employees

**561**  
employees

**30**  
employee  
nationalities

**33%**  
female  
employees



**GitHub**

**70 K+**

open-source,  
Espressif-powered  
projects

**2.6 M+**

views of the most  
popular videos of  
Espressif-powered  
projects



**YouTube**



**Book**

**100+**

books written about  
Espressif's SoCs in  
10+ languages



**52.7 K+**

members of  
ESP32 groups

**Reddit**



# Business Highlights

## Key Financial Data (Unaudited)

CNY	Three Months Ended		Six Months Ended	
	Jun 30, 2022	Jun 30, 2021	Jun 30, 2022	Jun 30, 2021
<b>Consolidated Statement of Income Data</b>				
Revenue	324,870,817	360,089,198	613,818,881	630,602,843
Gross profit	128,253,838	148,023,173	246,843,778	256,242,990
Selling expenses	10,384,806	11,525,644	19,579,687	21,315,037
General and administrative expenses	13,548,558	12,413,908	26,953,099	24,616,796
Research and development expenses	77,606,270	60,198,663	152,454,559	119,089,089
Net income	35,423,132	67,521,465	63,275,224	101,520,840
Earnings per share:				
Basic			0.7880	1.2681
Diluted			0.7880	1.2681
<b>Consolidated Balance Sheet Data</b>				
Cash, cash equivalent and investments			875,538,054	1,114,558,363
Working capital			1,715,463,451	1,749,605,271
Total assets			2,071,369,036	2,129,056,143
Long-term obligations			65,073,593	68,244,392
Total shareholders' equity			1,808,863,075	1,823,017,913
<b>Consolidated Cash Flow Data</b>				
Net cash flow from operating activities	7,345,663	950,232	-29,524,843	-12,548,266
<b>Non-GAAP Adjustment</b>				
Stock-based compensation	638,729	3,431,064	5,463,737	8,855,024
Non-GAAP net income	36,061,861	70,952,529	68,738,961	110,375,864

## Key Financial Indicators (Unaudited)

	Three Months Ended		Six Months Ended	
	Jun 30, 2022	Jun 30, 2021	Jun 30, 2022	Jun 30, 2021
Gross margin	39.48%	41.11%	40.21%	40.63%
R&D-to-sales ratio	23.89%	16.72%	24.84%	18.88%
EBITDA margin	12.26%	21.73%	11.98%	18.49%
Weighted ROE			3.46%	6.05%

# Key Announcements



## New SoCs

### ESP32-C2

a small, simple and cheap combo Wi-Fi 4 + Bluetooth 5 (LE) SoC in a 4mm x 4mm package, with 272 kB of memory and robust connectivity

### ESP32-C5

the industry's first RISC-V SoC solution that supports 2.4 and 5 GHz dual-band Wi-Fi 6, along with Bluetooth 5 (LE)



## AI

### Espressif's 3A Audio Algorithms

including Acoustic Echo Cancellation (AEC), Audio Noise Suppression (ANS) and Automatic Gain Control (AGC), which significantly reduce noise and echo in calls, keeping high-quality voice intercoms stable at all times.



## Security

### ESP Privilege Separation

"User vs Kernel" separation is achieved by using the World controller and Permission Controller, and by splitting the firmware image into two separate and independent binaries: protected and user applications. This makes the end application-development easier, without any inadvertent changes to the system.



## Cloud

### ESP RainMaker

Upgraded to a one-stop, development-free and maintenance-free AIoT solution for private Cloud deployment.

It is a comprehensive solution that covers everything from the underlying chip to device firmware, third-party voice-assistant integrations, mobile apps and the dashboard.

Customers can build their own AIoT devices and ecosystem, with ESP RainMaker.



## OS

### ESP-IDF

Espressif's own IoT Development Framework, including RTOS, has been upgraded to v5.0 and has won 8.9K stars on GitHub.

### Zephyr

We keep updating our support for Zephyr, with Low-Power Modes, Wi-Fi Manager, Asymmetric Multiprocessing (AMP) and peripheral support.



## Matter

### One-stop Matter Solution

This is the culmination of Espressif's ongoing contribution to the Matter platform in various areas, including protocol formulation, core stack implementation and certification test events.

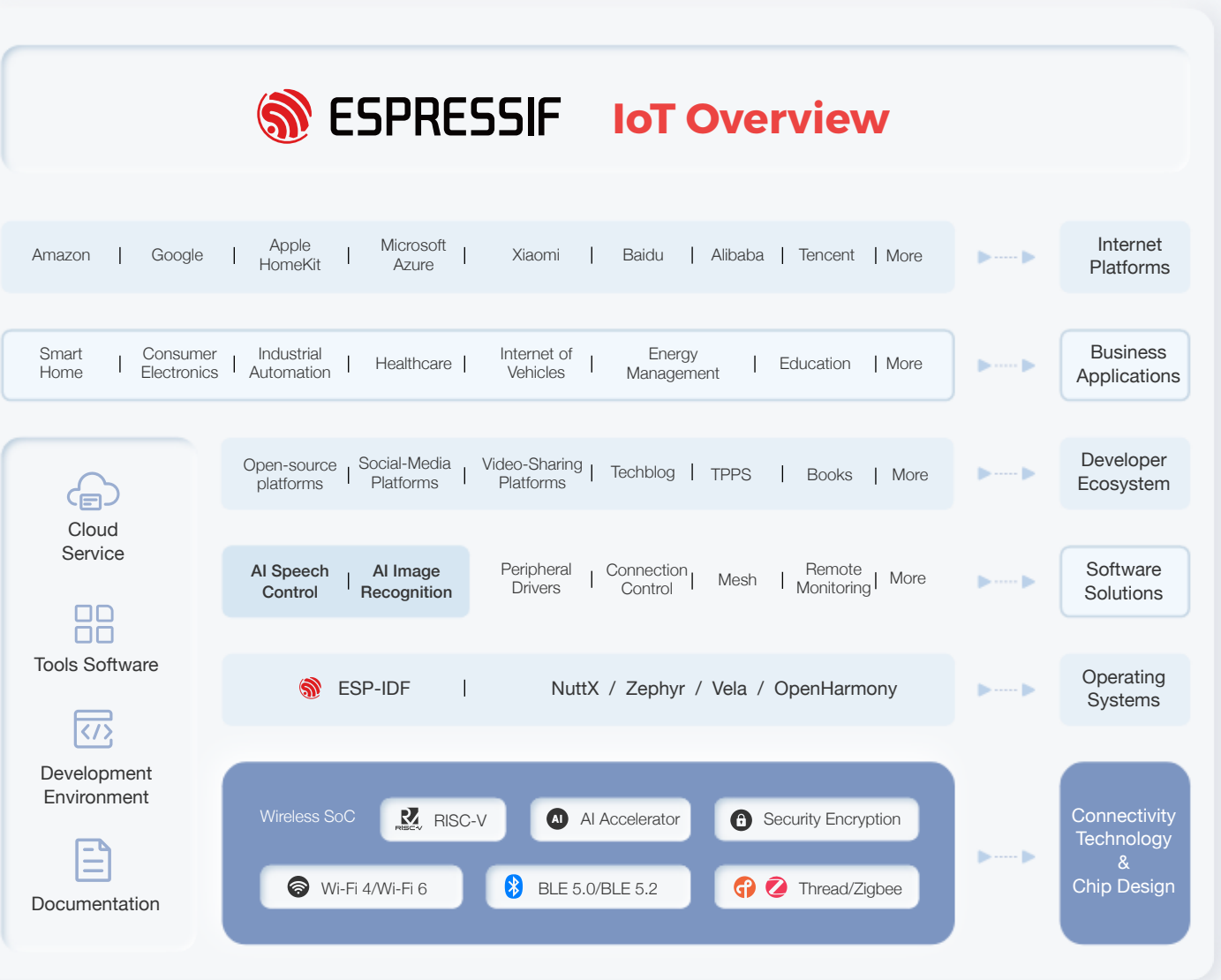


# Management Report

## Business Strategy

Espressif Systems' business strategy emanates from our four key capabilities and our four key service/product areas. More specifically, our four key capabilities include Espressif's connectivity and chip design, OS-level development, software solutions, and our engagement with our ecosystem.

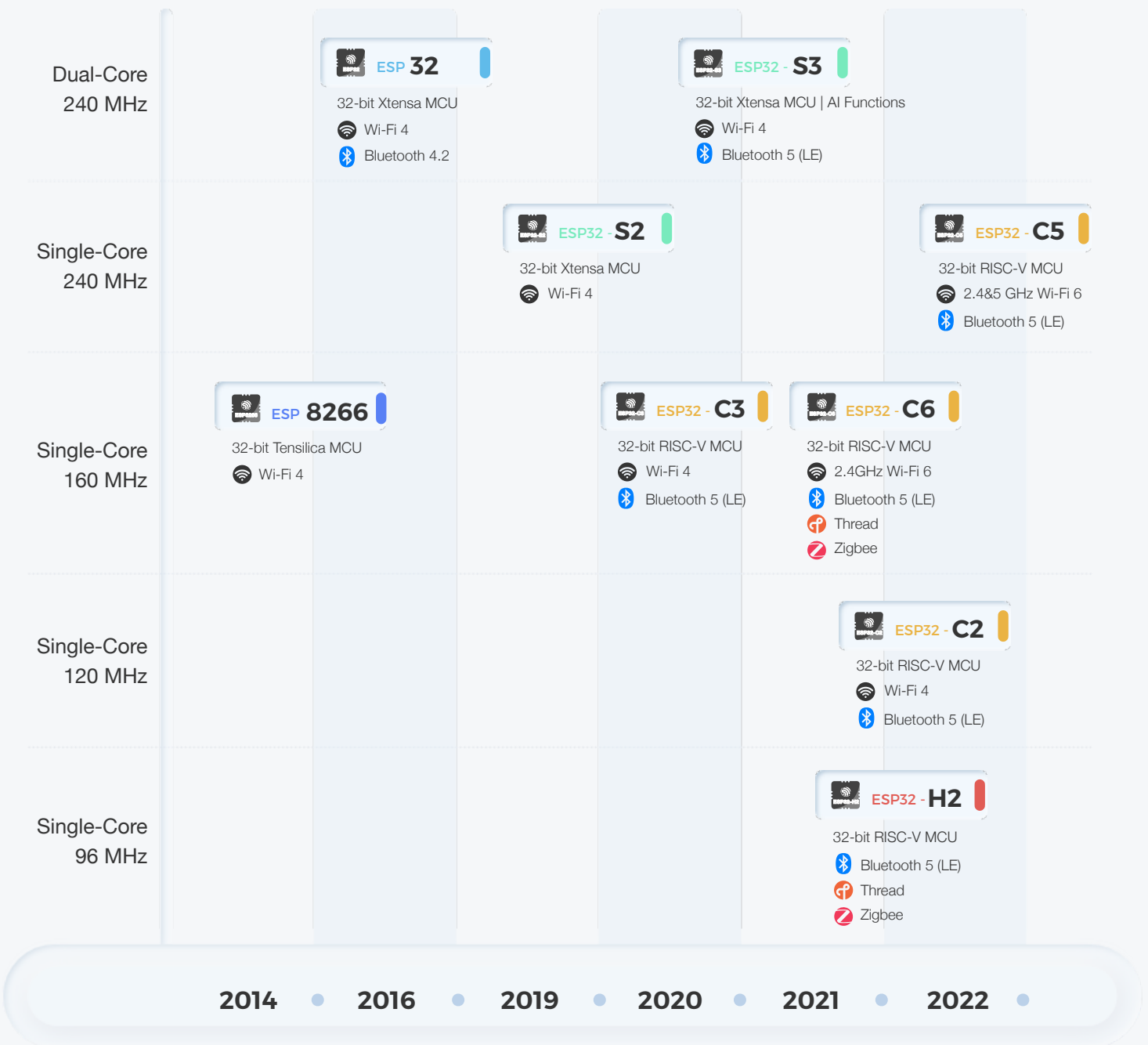
Our four key service and product areas include our development environment, software tools, cloud services, and detailed documentation support. The above-mentioned structure ensures that our products are the heart of numerous commercial AIoT applications in different markets, including smart home, consumer electronics, industrial automation, healthcare, etc.



# Key Products - IoT Chips

Espressif is recognized as a market leader in the field of Wi-Fi MCUs. We released our first Wi-Fi MCU in 2014, and our first Wi-Fi/Bluetooth LE combo chip in 2016. In 2020, we successfully developed our own RISC-V MCU core, adding it to our products, while in 2021, we released our first Thread/Zigbee/Bluetooth LE 5 combo chip and a 2.4GHz Wi-Fi 6 chip. In 2022, we released our first 2.4 & 5GHz Wi-Fi 6 chip.

In fact, we have been constantly diversifying our product portfolio, introducing new solutions through our numerous investments. Thus, we now have various product lines in all the main short-range connectivity technologies.





We also provide IoT modules based on our chips. The benefit for customers is that they can get direct support from us, shortening and optimizing their supply chain, even in case of chip shortages.



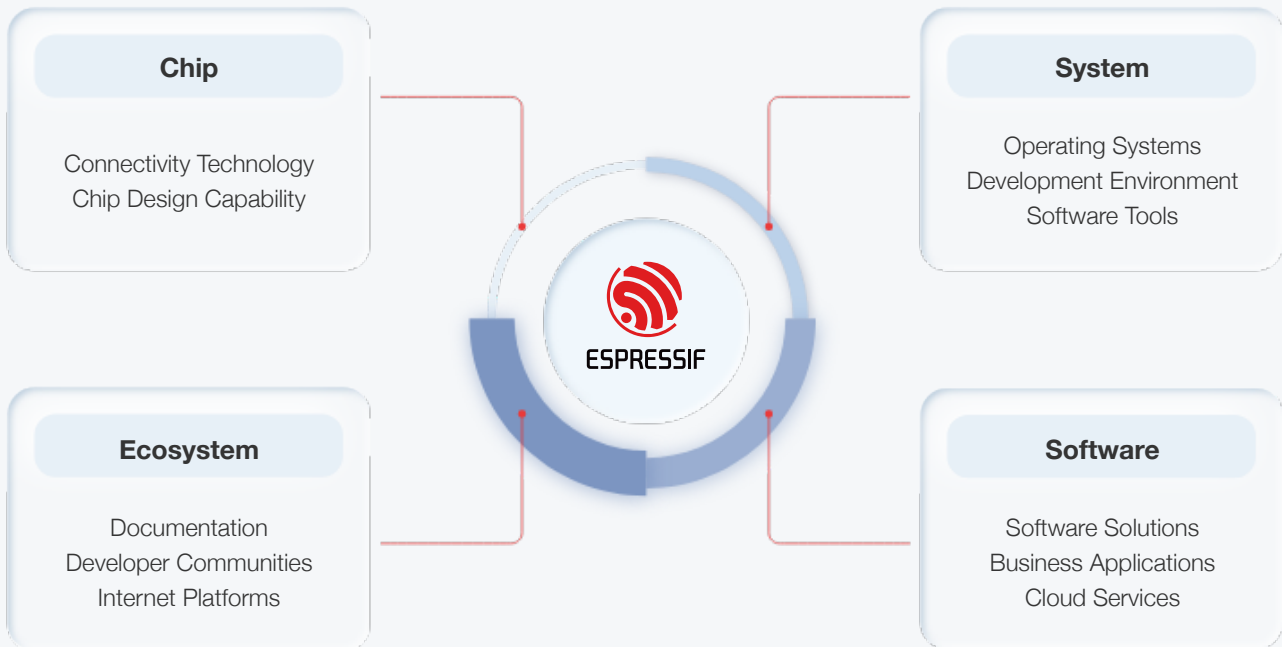
# Applications

We sell our own IoT chips and modules, enabling the connectivity between various products, ranging from simple devices -such as smart light bulbs- to complicated ones, such as robots. Our core connectivity chips are Wi-Fi MCUs and Wi-Fi /Bluetooth LE (BLE) combo MCUs, which accounted for 99.4% of our revenue in H1 2022.

The market for Wi-Fi MCUs or Wi-Fi/BLE combo MCUs is truly diverse, including applications for smart homes (e.g., smart lights, air conditioners, ovens, coffee machines, etc.), consumer electronics (e.g., smart speakers, drones, etc.), industrial automation (e.g., mechanical arms), healthcare (e.g., monitoring devices for diabetes, blood pressure, COVID-19, etc.), energy control (solar energy devices, EV chargers, etc.), the internet of vehicles (OBD devices, dash boards, etc.), education (talking pens, interactive white boards, etc.) and others, such as robots, wireless POS, and asset trackers.

<p><b>Smart Home</b></p>  <p>Smart Ovens</p>	<p><b>Consumer Electronics</b></p>  <p>Smart Speakers</p>	<p><b>Industrial Automation</b></p>  <p>Mechanical Arms</p>	<p><b>Healthcare</b></p>  <p>Medical Detectors</p>
<p><b>Energy Management</b></p>  <p>Solar Energy Devices</p>	<p><b>Internet of Vehicles</b></p>  <p>OBD Devices</p>	<p><b>Education</b></p>  <p>Talking Pens</p>	<p><b>Other</b></p>  <p>POS</p>

# Core Competitiveness



Espressif’s competitiveness stems from our previously-referred to “four key capabilities and four key service/product areas”. In fact, this substantiates our business philosophy, which helps us make a difference on the market in terms of the chips, operating systems and software solutions that we offer, within our vibrant ecosystem.

## Chip Competitiveness

Espressif takes pride in the invaluable experience that our R&D team leaders have in the field of wireless-communication chips. Additionally, Espressif’s founder and CEO, Mr Teo Swee-Ann, has over 20 years of experience in the semiconductor industry, having also registered over 40 IC and IoT-related patents under his name.

After the huge success of our initial series of Wi-Fi MCUs, our company expanded to other wireless-connectivity technologies, including Bluetooth LE and Thread/Zigbee. This development has further enhanced our Company's high-tech offerings, thus increasing our market opportunities, while also keeping our customers spoiled for choice.

Our products are renowned for their high level of integration, small size, low power consumption, great computing power, large memory space and strong security mechanisms. Our products power nearly 800 million devices across the whole wide world. They are being used by independent developers and big companies alike, while Espressif is recognized as a leading force in the AIoT chip industry.

## System Competitiveness

ESP-IDF is Espressif’s official IoT Development Framework for the ESP32, ESP32-S, ESP32-C and ESP32-H series of SoCs. It provides a self-sufficient SDK for any generic application development on the above-mentioned platforms, using programming languages such as C and C++. ESP-IDF currently powers millions of devices in the field, and enables building a variety of network-connected products, ranging from simple light bulbs and toys to big appliances and industrial devices.

ESP-IDF has established a fastidious release process, and a support policy which ensures that customers can choose a stable release, while also getting important updates. Each stable release undergoes a rigorous QA process that ensures production readiness at all times. Also, ESP-IDF comes with an extensive documentation for its software components not only at the usage level but also at the design level. This helps developers to fully understand what ESP-IDF offers, and select whatever suits their applications best.

Furthermore, ESP-IDF supports a large number of software components, including RTOS, peripheral drivers, network stacks, protocol implementations, and examples of common application use-cases. These components help developers to focus on their business logic, while the SDK provides most of the building blocks required for typical applications. Open-source and freely-available developer tools, as well as officially supported Eclipse and VSCode IDEs, ensure ease-of-use for developers.

## Software Competitiveness

The company provides numerous software solutions, including AI-related ones (e.g., offline/online voice recognition and smart control, AI image recognition, etc.), Wi-Fi Mesh, BLE Mesh, touch functions, various peripheral drivers and other functions covering all the development needs of our customers. These solutions greatly reduce the cost of customer application development.

Espressif's AI Lab has developed Audio Front-End (AFE) algorithms that have been qualified as a "Software Audio Front-End Solution" to Amazon-Alexa Built-in devices. This is the result of Espressif's incessant focus not just on the connectivity of its own AIoT solutions, but also on high-performance Machine Learning on the edge. Furthermore, in 2022 our AI Lab launched the so-called 3A Audio Algorithms, i.e., Acoustic Echo Cancellation (AEC), Audio Noise Suppression (ANS), and Automatic Gain Control (AGC). Based on Espressif's 3A audio algorithms, Espressif-powered Real-Time Communication applications benefit from significantly reduced noise and echo in calls, and sustained stability in high-quality voice intercoms.

Our newly-launched, one-stop Matter solution, including the fully-customized ESP-Matter SDK and Cloud services, can simplify and accelerate the development process of Matter-compatible products significantly. This is the culmination of our ongoing contribution to the Matter platform in various areas, including protocol formulation, core stack implementation and certification test events.

Furthermore, ESP RainMaker® is a one-stop, development-free and maintenance-free AIoT solution for private Cloud deployment, which reduces R&D costs and accelerates time-to-market. More specifically, this is a complete system for building AIoT products with a minimal amount of code, which enables our customers to deploy and develop secure, customized AIoT solutions. It covers all of Espressif's chips and modules, device firmware, voice-assistant integrations, phone apps and Cloud backend. This helps our customers avoid expensive investments in Cloud capabilities, gain independence and focus on innovating their core-value offerings.

## Ecosystem Competitiveness

Our company has brought together professionals and companies from across the AIoT industry, e.g., hardware and software developers, business applications, and Cloud platforms, as well as maker communities. Espressif's own software development platforms and the accompanying documentation are entirely open-source, thus making our innovative products available to people from all walks of life.

As a result, thousands of third-party projects have been based on Espressif's technologies. For example, on GitHub, which is the largest provider of Internet hosting for software development, there are more than 70,000 open-source projects based on Espressif's IoT chips. Furthermore, the popularity of our products has stimulated an increasing number of authors who have produced teaching resources based on Espressif chipsets in several languages including English, Chinese, German, Portuguese, Japanese, and Serbo-Croatian. At present, there are more than 100 digital and physical books about Espressif's SoCs in more than ten languages.

## Ecosystem Competitiveness (continued)

### Developer community contents

ITEM	Jun 30, 2022	Dec 31, 2021	change%
<b>GitHub (Worldwide open-source development platform)</b>			
ESP32 Projects	35,163	29,007	21%
ESP8266 Projects	37,236	35,055	6%
<b>Gitee (Chinese open-source development platform)</b>			
ESP32 Projects	2,783	2,592	7%
ESP8266 Projects	1,944	1,867	4%
<b>CSDN (Chinese Tech-blog platform)</b>			
Search results for ESP32	85,654	79,188	8%
Search results for ESP8266	32,061	30,033	7%
<b>Hackaday (open-source hardware platform)</b>			
ESP32 projects	4,253	3,816	11%
ESP8266 projects	5,933	5,789	2%
<b>Reddit</b>			
ESP32 group members	52,677	46,540	13%
ESP8266 group members	56,344	53,523	5%
<b>bilibili (Chinese video-sharing platform)</b>			
Official account followers	20,475	17,502	17%
Official account views	507,095	390,000	30%
<b>YouTube</b>			
Official account subscribers	12,300	11,600	6%
Official account views	611,322	556,846	10%
ESP32 community videos	553,592	466,459	19%
ESP8266 community videos	738,270	687,155	7%
Views of most watched ESP32 community video	around 2.6m	around 1.5m	
Views of most watched ESP8266 community video	around 1.5m	around 1.5m	

**N.B.:**

Statistical data derived from different platforms may be based on different collecting methods. It is possible for certain platforms to modify their algorithms from time to time and, therefore, impact the resulting statistical data. The above-mentioned data resulted from the Company's research at the end of each quarter reported here, unless otherwise stated.

# Business Model

## Business-to-Developer-to-Business (B2D2B)

Espressif has deployed the Business-to-Developer type of marketing, not only because it has gained prominence in recent years, but also because it has proven to be more effective ever since the influence of developers on organizations of all sizes has gained traction. In other words, most developers are R&D employees in various companies and bring about business opportunities from the companies they work for.

This way, the developer ecosystem we have created at Espressif demonstrates how the value of networks can grow exponentially:

- The more developers we attract as customers, the more hardware and software solutions we generate.
- The more successful hardware and software solutions we create, the more our reputation spreads with positive feedback from happy customers/developers.
- The above-mentioned interaction between people in our network prompts the creation of more content, which -in turn- attracts more users/developers searching for new content.
- Likewise, other third-party development platforms join our ecosystem and bring in new developers, as our influence continues to grow.

Having successfully applied the B2D2B model, Espressif can now focus on R&D investments, while maintaining a small business team that supports a large number of customers directly. In fact, most of our revenue is gained through direct sales.



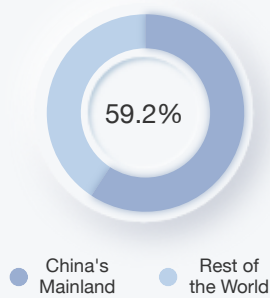
# Financial Performance

Espressif's total revenue in the first half of the current fiscal year (2022) was CNY 613.82 million, marking a decrease of 2.66% from CNY 630.60 million of H1 2021, due to inflation-driven recession and the decline in consumer confidence. The ensuing net income was CNY 63.28 million, which marked a decrease of 37.67% year-on-year, due to our increased R&D expenditure.

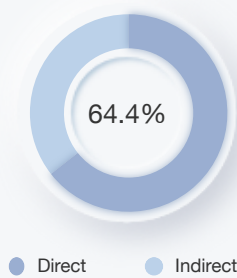
The overall gross margin was 40.21%, in which the IoT chip gross margin was 48.93%. The overall gross margin decreased due to the increased proportion of module sales.

The customers in China's mainland prefer purchasing chips while the customers from the rest of the world prefer modules. We keep the chip margin to a reasonable level, in order to support our future R&D expenditure. The module margin fluctuates, depending on its memory capacity. Overall, the gross profit of a module is higher than that of a chip.

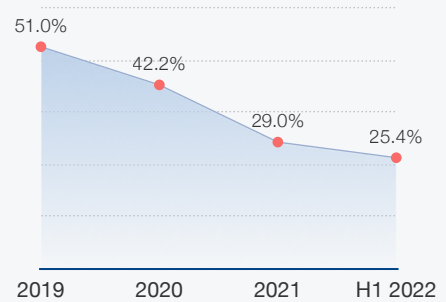
**Revenue by Area of H1 2022**



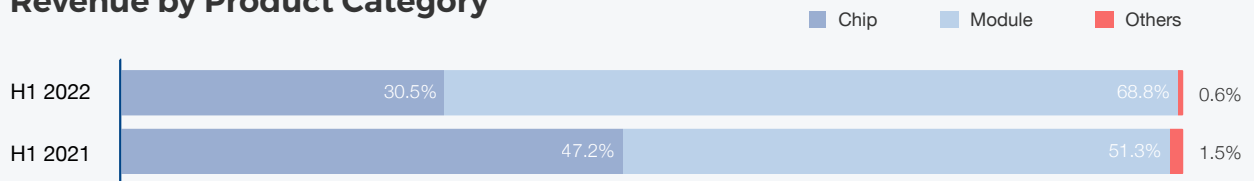
**Revenue by Sales Mode of H1 2022**



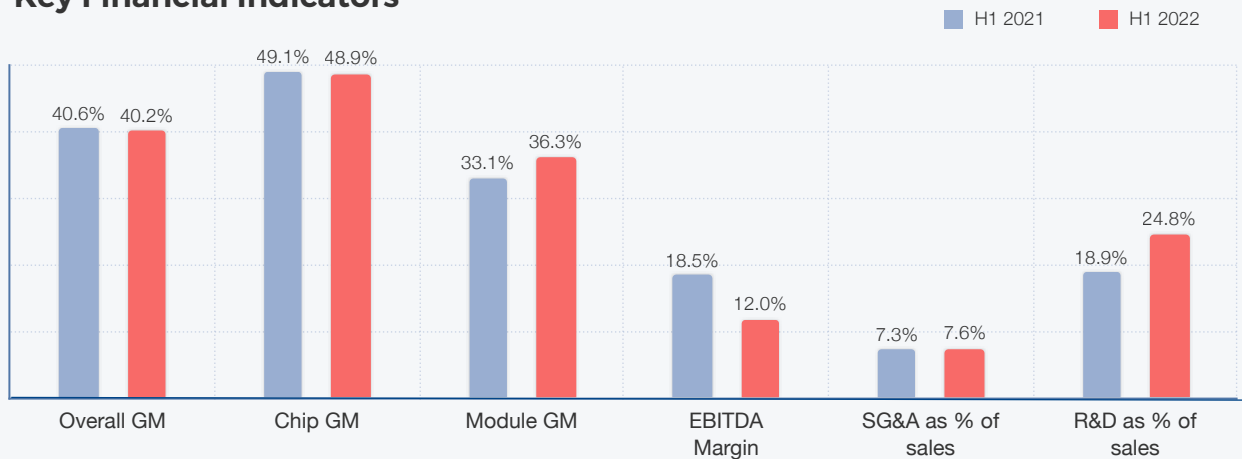
**Top-5 Customer Concentration Rate**



**Revenue by Product Category**



**Key Financial Indicators**



# Research and Development

## R&D Investment

R&D investment is at the heart of Espressif Systems' development. During the reporting period, R&D cost CNY 152.45 million, which marked a 28.02% increase compared with that of 2021. At the same time, the R&D-to-sales ratio was 24.84% in the first half of this fiscal year (2022).

Espressif's escalating R&D investment cost can be attributed to the increase in the number of R&D staff and their subsequent compensation level, which increased significantly year-over-year.

CNY	Six Months Ended		change (%)
	June 30, 2022	June 30, 2021	
R&D Expenses	152,454,559	119,089,089	28.02
R&D-to-sales ratio	24.84%	18.88%	

## Intellectual Property

We seek to protect our technologies through a combination of patents, software copyright and trade secrets. By the end of June 2022, the Company had been granted 129 patents. We continue to submit new patent applications relating to our recent R&D innovations.



### List of Intellectual Property Rights Applied and Granted

	H1 2022		Cumulative number	
	Applied for	Granted	Applied for	Granted
Invention patents	5	4	116	66
Utility model patents	0	0	26	26
Design patents	0	0	1	1
Software copyright	0	0	19	19
Others	3	6	51	17
<b>Total</b>	<b>8</b>	<b>10</b>	<b>213</b>	<b>129</b>

**N.B.:** The number of patents that have been "applied for" does not include the rejected applications in China, or the PCT patent applications not submitted to any particular country, or any patent applications beyond the reporting period. The number of "granted" patents includes those with expired IP rights. The category of "others" includes overseas (non-Chinese) patent applications, i.e. the PCT patent applications, U.S. patent applications through the PCT route or the Paris Convention route, as well as patent applications in India.



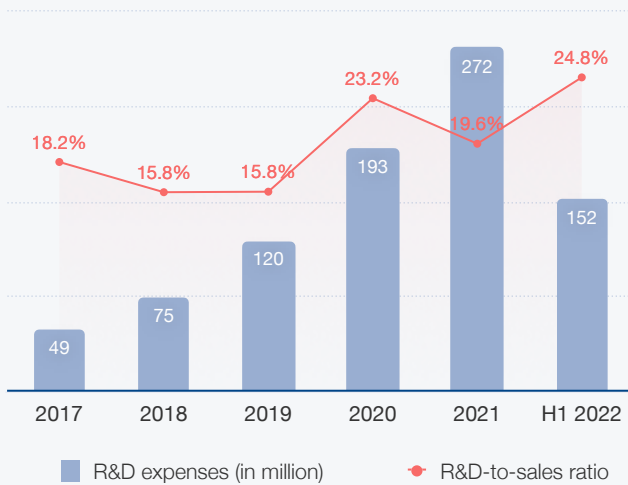
## R&D Employees

We are proud of our talented, diverse and multicultural workforce. By June 30, 2022, across our eight branches worldwide, we had employed 561 people, more than 76% of whom are in engineering roles. Meanwhile, we have expanded our business beyond Wi-Fi MCUs, thus offering innovative solutions to wireless connectivity and processing, including AI, RISC-V MCU, Wi-Fi 6, Bluetooth LE, Thread, Zigbee and other IoT-related technologies.

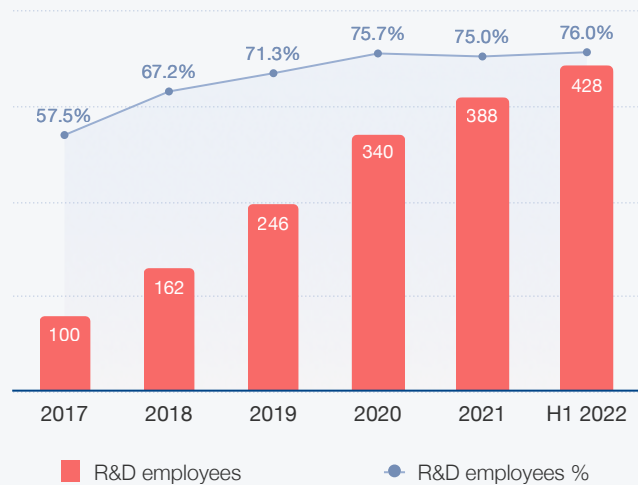
Since the research and development of software and hardware are inextricably intertwined, we constantly invest in software technology, too. Hence, we are currently focused on AIoT technologies, including toolchains, compilers, operating systems, application frameworks, AI algorithms, Cloud products, apps, etc. Our aim is to make Espressif a one-stop solution-provider offering anything relating to hardware, software and the Cloud.

	Six Months Ended	
	June 30, 2022	June 30, 2021
R&D employees	428	349
R&D employees as a percentage of total employees	76.29%	75.38%
Total compensation of R&D employees (CNY in thousands)	123,837	86,790
Average compensation of R&D employees (CNY in thousands)	304	252

### R&D Expenses



### R&D Employees





# Ownership of Securities

## Basic information of securities

Share types	Ordinary share
Share capital	80,451,785 (as of June 30, 2022)
Listing	Shanghai Stock Exchange (SSE)
Ticker	688018.SH
Listing Date	2019-07-22

## Shareholder Structure as of Jun 30, 2022

Shareholder	Share Numbers	Percentage (%)
Espressif (Hong Kong) Investment Ltd.	34,860,000	43.33
Shinvest Holding Ltd.	2,804,446	3.49
Yadong Beichen Investment Management Co., Ltd.	2,518,484	3.13
Dajia Life Insurance Co., Ltd. – Universal Products	1,904,614	2.37
BOC - Franklin Templeton Sealand Fund	1,542,789	1.92
Ningbo Meishan Free Trade Port Le Tun Investment Management Partnership (Limited Partnership)	1,046,030	1.30
BOC - Cathay Pacific CES Semiconductor Chip ETF	973,057	1.21
UBS AG	786,314	0.98
China Resources SZITIC Trust - Broadvision Selection II	725,500	0.90
ABC - Franklin Templeton Sealand Fund	694,416	0.86
<b>Top 10 shareholders</b>	<b>47,855,650</b>	<b>59.48</b>
Other public shareholders	32,596,135	40.52
<b>Total of outstanding shares</b>	<b>80,451,785</b>	<b>100.00</b>

## Stock-Based Compensation

Espressif has four ongoing restricted stock incentive plans. The fair value of the restricted stock incentive plans is estimated using the Black-Scholes model. The following table presents details of stock-based compensation costs acknowledged in the Consolidated Statements of Income.

### Restricted Stock Incentive Plans

Plan	Award Type	Number of Underlying Shares	Ratio of Underlying Shares (%)*	Grant Price (CNY)
2019 restricted stock incentive plan	Class II restricted stock	205,900	0.2559	63.625
2020 restricted stock incentive plan	Class II restricted stock	226,737	0.2818	93.625
2021 restricted stock incentive plan	Class II restricted stock	1,050,367	1.3056	94.500
2022 restricted stock incentive plan	Class II restricted stock	1,187,168	1.4756	120.000

**N.B.:** The above-mentioned numbers were calculated on June 30, 2022.

## Stock-Based Compensation

CNY	Six Months Ended	
	June 30, 2022	June 30, 2021
Selling expenses	290,063	360,788
G&A expenses	732,517	584,924
R&D expenses	4,441,157	7,909,313
<b>Total stock-based compensation</b>	<b>5,463,737</b>	<b>8,855,024</b>

# Risks and Uncertainties



## Financial Risk

The Company performs periodic credit evaluations of its customers' financial condition and generally requires of its customers no collateral. The Company provides an allowance for expected credit losses, based on the net amount expected to be collected on such receivables. Losses have not been significant for any of the periods presented.



## R&D Risk

Espressif's research and development strategy is focused on leveraging new technologies for the creation of innovative AIoT products. Any delays or changes in the development of these technologies by our industry partners, or a failure of our products to achieve market acceptance, could compromise our competitive position.



## Competitors

As the market for AIoT products grows, we face an increasing antagonism from relatively large competitors, such as Realtek, MediaTek, Infineon, NXP, Qualcomm and others. Intense competition from current players, as well as new entrants, may reduce our product sales and market share.



## Suppliers

A significant portion of the Company's products is fabricated by the Taiwan Semiconductor Manufacturing Co. (TSMC). The inability of TSMC to deliver wafers to the Company in a timely manner could impact the production of the Company's products for a certain period of time, which could have an adverse effect on the Company's business, financial condition, results of operations and cash flow.



## Customers

The Company sells directly to end customers, distributors, solution providers and contract manufacturers. Our customers are a mix of several big customers and numerous small customers. The concentration ratio for our top-five customers was 25.4% in H1 2022, and it has been shrinking over the years. None of the customers accounted for yielded more than 10% of our revenue during the first half of the current fiscal year (2022).

# Consolidated Financial Statements

(Unaudited)

## Consolidated Balance Sheet (Unaudited)

CNY	June 30, 2022	December 31, 2021
<b>Assets</b>		
<b>Current assets:</b>		
Cash and bank balances	332,556,835	367,149,078
Transactions of monetary assets	542,981,219	747,409,285
Notes receivable	10,538,475	11,600,177
Accounts receivable, net	252,174,094	306,823,758
Prepayments	11,554,962	8,172,703
Other receivables	9,789,757	9,519,869
Including: Interest receivable	1,322,727	298,796
Inventories	432,648,894	326,168,928
Other current assets	320,651,584	210,555,311
<b>Total current assets</b>	<b>1,912,895,820</b>	<b>1,987,399,110</b>
<b>Non-current assets:</b>		
Investment in other equity assets	56,667,840	56,600,700
Fixed assets	53,130,767	46,176,368
Construction work in progress		
Right-of-use assets	18,411,690	21,731,123
Intangible assets	2,801,826	3,191,335
Long-term deferred expenses	6,342,424	7,582,637
Deferred income tax assets	21,118,669	6,374,870
<b>Total assets</b>	<b>2,071,369,036</b>	<b>2,129,056,143</b>

# Consolidated Balance Sheet (Unaudited)

CNY	June 30, 2022	December 31, 2021
<b>Liabilities &amp; Shareholders' Equity</b>		
<b>Current liabilities:</b>		
Accounts payable	111,207,564	138,572,198
Contract liabilities	14,343,999	17,184,196
Payroll payable	46,496,917	66,168,763
Taxes payable	6,627,505	6,472,494
Other payable	6,796,735	754,261
Non-current liabilities due within one year	11,959,649	8,641,928
<b>Total current liabilities</b>	<b>197,432,369</b>	<b>237,793,839</b>
<b>Non-current liabilities:</b>		
Lease liabilities	9,324,447	12,116,036
Deferred income tax liabilities	55,749,146	56,128,356
<b>Total liabilities</b>	<b>262,505,962</b>	<b>306,038,230</b>
<b>Owners' equity (or shareholders' equity):</b>		
Share capital	80,451,785	80,158,963
Capital reserves	1,298,215,288	1,266,771,034
Other comprehensive income	3,844,139	-15,711,579
Surplus reserves	33,462,951	33,462,951
Retained earnings	392,888,912	458,336,543
<b>Total shareholders' equity</b>	<b>1,808,863,075</b>	<b>1,823,017,913</b>
<b>Total liabilities and shareholders' equity</b>	<b>2,071,369,036</b>	<b>2,129,056,143</b>

# Consolidated Income Statement (Unaudited)

CNY	Three Months Ended		Six Months Ended	
	June 30, 2022	June 30, 2021	June 30, 2022	June 30, 2021
<b>Revenue</b>	324,870,817	360,089,198	613,818,881	630,602,843
Cost of Revenue	196,616,979	212,066,024	366,975,103	374,359,853
<b>Gross Profit</b>	128,253,838	148,023,173	246,843,778	256,242,990
Taxes and surcharges	1,228,517	1,184,223	1,746,949	1,853,747
Selling expenses	10,384,806	11,525,644	19,579,687	21,315,037
General and administrative expenses	13,548,558	12,413,908	26,953,099	24,616,796
Research and development expenses	77,606,270	60,198,663	152,454,559	119,089,089
Financial expenses	2,698,487	-29,279	3,266,513	-1,113,412
Including: Interest expenses	184,381		397,063	
Interest income	841,974	1,286,958	1,538,621	2,343,528
Add: Other income	2,979,722	2,051,591	3,232,469	2,262,750
Investment income (mark "-" for loss)	7,305,074	6,082,213	10,485,662	9,907,135
Income from changes in fair value (mark "-" for loss)	-1,095,022	-481,964	1,981,219	1,239,367
Credit impairment losses (mark "-" for loss)	-3,115	-879	-3,115	7,652
Assets impairment losses (mark "-" for loss)	6,989	1,872,458	-405,282	1,686,228
Assets disposal income (mark "-" for loss)				
<b>Operating Income</b>	31,980,849	72,253,432	58,133,924	105,584,865
Add: Non-operating revenue		15,893		15,893
Less: Non-operating expenses	33,405	13,880	33,405	37,350
<b>Income before income taxes</b>	31,947,444	72,255,444	58,100,519	105,563,408
Provision (benefit) for income taxes	-3,475,688	4,733,979	-5,174,706	4,042,568
<b>Net Income</b>	35,423,132	67,521,465	63,275,224	101,520,840
<b>Earnings per share</b>				
Basic			0.7880	1.2681
Diluted			0.7880	1.2681

CNY	Three Months Ended		Six Months Ended	
	June 30, 2022	June 30, 2021	June 30, 2022	June 30, 2021
<b>Net Income</b>	35,423,132	67,521,465	63,275,224	101,520,840
Other comprehensive income (loss), after tax				
Changes to the fair value of investment in other equity instruments	72,640	-22,240	67,140	-12,960
Currency translation reserves	21,128,298	-6,253,823	19,488,578	-3,484,190
<b>Other comprehensive income (loss)</b>	21,200,938	-6,276,063	19,555,718	-3,497,150
<b>Comprehensive income</b>	56,624,070	61,245,402	82,830,942	98,023,690

# Consolidated Cash Flow Statement (Unaudited)

CNY	Three Months Ended		Six Months Ended	
	June 30, 2022	June 30, 2021	June 30, 2022	June 30, 2021
<b>Operating Activities</b>				
Cash from sales of merchandise and provision of services	323,433,638	363,424,641	716,230,416	659,726,312
Tax refund	626,261	8,766,206	27,942,635	23,494,781
Other received cash related to operational activities	3,506,621	3,095,208	12,795,208	4,629,112
<b>Subtotal of cash inflow from operational activities</b>	<b>327,566,521</b>	<b>375,286,055</b>	<b>756,968,259</b>	<b>687,850,205</b>
Cash paid for merchandise and services	220,744,919	285,440,570	556,762,874	500,090,038
Cash paid to and for employees	63,047,148	35,691,509	170,766,766	125,403,344
Cash paid for taxes and surcharges	18,347,307	24,605,161	25,286,124	30,550,639
Other paid cash related to operational activities	18,081,483	28,598,583	33,677,338	44,354,449
<b>Subtotal of cash outflow from operational activities</b>	<b>320,220,858</b>	<b>374,335,823</b>	<b>786,493,102</b>	<b>700,398,472</b>
<b>Net cash provided by operating activities</b>	<b>7,345,663</b>	<b>950,232</b>	<b>-29,524,843</b>	<b>-12,548,266</b>
<b>Investing activities</b>				
Cash arising from the disposal of investments	807,335,414	835,852,213	1,641,103,857	1,694,207,598
Cash arising from investment income	1,465,867		2,893,450	
Net cash arising from the disposal of fixed assets, intangible assets and other long-term assets				5,510
Other received cash relating to investment activities				
<b>Subtotal of cash inflow from investment activities</b>	<b>808,801,281</b>	<b>835,852,213</b>	<b>1,643,997,307</b>	<b>1,694,213,108</b>
Cash paid for the purchase and construction of fixed assets, intangible assets and other long-term assets	2,753,972	7,655,385	15,360,524	12,555,904
Cash paid for investments	783,000,000	705,000,000	1,538,100,000	1,614,770,000
Other paid cash relating to investment activities				
<b>Subtotal of cash outflow from investment activities</b>	<b>785,753,972</b>	<b>712,655,385</b>	<b>1,553,460,524</b>	<b>1,627,325,904</b>
<b>Net cash used by investment activities</b>	<b>23,047,309</b>	<b>123,196,828</b>	<b>90,536,784</b>	<b>66,887,204</b>
<b>Financing activities</b>				
Cash arising from the issuance of common stock	5,957,003	6,485,097	26,273,338	6,485,097
Including: Cash arising from subsidiaries absorbing investments by minority shareholders				
<b>Subtotal of cash inflow from financing activities</b>	<b>5,957,003</b>	<b>6,485,097</b>	<b>26,273,338</b>	<b>6,485,097</b>
Cash paid for the distribution of dividends and profits, or payment of interests				
Including: dividends and profits paid to minority shareholders by subsidiaries	128,722,856	7,272,435	128,722,856	40,015,250
Other paid cash relating to financing activities	767,795	3,126,415	2,004,407	5,062,442
<b>Subtotal of cash outflow from financing activities</b>	<b>129,490,651</b>	<b>10,398,849</b>	<b>130,727,263</b>	<b>45,077,692</b>
<b>Net cash used for financing activities</b>	<b>-123,533,648</b>	<b>-3,913,752</b>	<b>-104,453,925</b>	<b>-38,592,595</b>
Impact of fluctuation in exchange rates on cash and cash equivalents	11,083,046	-5,225,743	8,856,092	-2,178,014
<b>Net increase in cash and cash equivalents</b>	<b>-82,057,630</b>	<b>115,007,564</b>	<b>-34,585,891</b>	<b>13,568,330</b>
Add: Cash and cash equivalent at the commencement of the period			367,142,726	503,239,843
<b>Cash and cash equivalents at the end of the period</b>	<b>-82,057,630</b>	<b>115,007,564</b>	<b>332,556,835</b>	<b>516,808,173</b>

# Consolidated Statement of Changes in Equity

(Unaudited)

CNY	Share capital	Capital reserves	Other comprehensive income	Surplus reserves	Retained earnings	Total equity
<b>Balance as of December 31, 2021</b>	80,158,963	1,266,771,034	-15,711,579	33,462,951	458,336,543	1,823,017,913
<b>Comprehensive income, net of tax</b>						
Net Income					63,275,224	63,275,224
Other comprehensive income			19,555,718			19,555,718
<b>Transactions with owners</b>						
Capital increase	292,822	36,133,353				36,426,175
Stock-based compensation		-4,689,100				-4,689,100
Surplus reserves						
Dividends					-128,722,856	-128,722,856
<b>Balance as of June 30, 2022</b>	80,451,785	1,298,215,288	3,844,139	33,462,951	392,888,912	1,808,863,075

CNY	Share capital	Capital reserves	Other comprehensive income	Surplus reserves	Retained earnings	Total equity
<b>Balance as of December 31, 2020</b>	80,030,500	1,235,113,896	-7,401,076	15,428,165	317,958,872	1,641,130,356
<b>Comprehensive income, net of tax</b>						
Net Income					101,520,840	101,520,840
Other comprehensive income			-3,497,150			-3,497,150
<b>Transactions with owners</b>						
Capital increase	82,469	13,716,093				13,798,562
Stock-based compensation		1,541,560				1,541,560
Surplus reserves						
Dividends					-40,015,250	-40,015,250
<b>Balance as of June 30, 2021</b>	80,112,969	1,250,371,548	-10,898,227	15,428,165	379,464,462	1,714,478,918



# Further Information

## Terms and Conditions of the Report

### Responsibility Statement

The Board of Directors, the Board of Supervisors and executive management of the Company warrant that the contents of this annual report are true, accurate and complete, and do not contain any false information, misleading statements or material omissions, severally and jointly accepting any legal responsibility thereof.

Shanghai, 22 August 2022  
Espressif Systems

#### Board of Directors

**Teo Swee Ann**  
Founder and Chairman

**Ng Pei Chi**  
Information Technology Officer

**Teo Teck Leong**  
Shareholder-elected

**Xu Xin**  
Shareholder-elected

**Lan Yuzhe**  
Independent Director

**Koh Chuan Koon**  
Independent Director

**Lee Sze Chin**  
Independent Director

#### Board of Supervisors

**Lv Zhihua**  
Employee-elected

**Fu Hanyu**  
Shareholder-elected

**Wang Yiwen**  
Shareholder-elected

#### Executive Management

**Teo Swee Ann**  
Founder and CEO

**Wang Jue**  
Deputy General Manager

**Shao Jingbo**  
Financial Director



### Forward-looking Statements

This report contains forward-looking statements and/or assessments about the business, financial condition, performance and strategy of the Espressif Group. These statements and/or assessments are based on assumptions and management expectations resting upon currently available information and current estimates. These are subject to a multitude of uncertainties and risks, many of which are partially or entirely beyond Espressif's control. Espressif's actual business development, financial condition, performance and strategy may, therefore, differ from what is discussed in this report.

# List of abbreviations

<b>AI</b>	Artificial Intelligence
<b>AIoT</b>	Artificial Intelligence and Internet of Things
<b>Bluetooth LE</b>	Bluetooth Low Energy
<b>CEO</b>	Chief Executive Officer
<b>CES</b>	Consumer Electronics Show
<b>COVID-19</b>	Coronavirus Disease-2019
<b>EBITDA</b>	Earnings Before Interest, Taxes, Depreciation and Amortization
<b>Espressif</b>	ESPRESSIF SYSTEMS (SHANGHAI) CO., LTD.
<b>ETF</b>	Exchange Traded Fund
<b>G&amp;A</b>	General and Administrative
<b>GM</b>	Gross Margin
<b>IC</b>	Integrated Circuit
<b>IoT</b>	Internet of Things
<b>OBD</b>	On-Board Diagnostics
<b>PCS</b>	Piece of Chips
<b>POS</b>	Point of Sale
<b>R&amp;D</b>	Research & Development
<b>RF</b>	Radio Frequency
<b>RISC-V MCU</b>	Reduced Instruction Set Computer-V Microcontroller Unit
<b>ROE</b>	Return on Earnings
<b>RTOS</b>	Real-Time Operating System
<b>SG&amp;A</b>	Selling, General and Administrative
<b>SH</b>	Shanghai
<b>SoCs</b>	System on Chips
<b>TPPS</b>	Third-Party Plugins
<b>TSR</b>	Techno Systems Research
<b>YoY</b>	Year-on-Year

## Investor Relations

ir@espressif.com



## Official Platforms

www.espressif.com

blog.espressif.com

github.com/espressif

esp32.com

esp8266.com

bbs.espressif.com

## Social Media

 [twitter.com/EspressifSystem](https://twitter.com/EspressifSystem)

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All amounts presented in these condensed Consolidated Financial Statements are shown in CNY unless stated otherwise. Slight discrepancies between the amounts presented may occur due to rounding.