

Despite Downturn, Semiconductors Continue to be Highly Sought After

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HONG KONG, CHINA, October 23, 2023 /EINPresswire.com/ -- Over the past two years, the global <u>semiconductor</u> industry has experienced a period of "ups and downs," especially in the last year, when the semiconductor market plunged into a downturn. According to Gartner's forecast data, global semiconductor revenue is expected to decline by 11.2% in 2023, further deteriorating the short-term outlook for the semiconductor market.

Despite the sluggish performance of the semiconductor market, the investment enthusiasm in the semiconductor industry, a track with great growth potential in the long cycle, has not disappeared, and mergers and acquisitions among semiconductor companies have never ceased.

In the first half of this year, there were several acquisition events in the semiconductor industry, including Renesas Electronics acquiring Panthronics, Intel acquiring Tower Semiconductor, Infineon acquiring GaN Systems, and Qualcomm acquiring Autotalks, which attracted widespread attention in the industry.

In the second half of 2023, with the intensification of global industrial competition, a new wave of mergers and reorganizations in the semiconductor industry seems to be surging.

- I. Recent Acquisition Cases
- 1. Infineon acquires UWB chip company 3db

Recently, Infineon has acquired 3db Access AG, a start-up based in Zurich, which is a pioneer in secure, low-power ultra-wideband (UWB) technology and has now become the preferred IP provider for major car brands.

3db provides secure, ultra-low power, and high-precision integrated UWB ranging and sensing. Its integrated products enable a wide range of applications, including provable secure access to valuable assets, proximity security proof for seamless mobile payments, and real-time highprecision positioning of connected smart devices. This acquisition further enhances Infineon's product portfolio in secure, intelligent access, precise positioning, and enhanced sensing. Infineon is now adding UWB to its connectivity product line, which includes Wi-Fi, Bluetooth/Low Energy Bluetooth, and NFC solutions, to further meet the needs of more automotive, industrial, and consumer IoT applications.

ABI Research predicts that the UWB chipset market will grow at a rate of 13% per year, reaching about \$3.1 billion by 2028. Facing huge market potential, both parties will strive to enrich the secure positioning and sensing functions of key IoT and automotive applications to seize market opportunities.

2. Allegro acquires Crocus

Not long ago, Allegro, a manufacturer of motion control and energy-saving system power and sensor semiconductors, announced the acquisition of Crocus Technology for \$420 million in cash.

Crocus is a private company and a leader in advanced Tunnel Magneto-Resistance (TMR) sensor technology. This acquisition brings unique technology and products that are well-suited to serve high-growth applications in the fields of electric vehicles, clean energy, and automation, supported by more than 200 patents. By 2030, the magnetic sensor market is expected to grow to over \$5 billion, with TMR being the fastest-growing segment, expected to approach a potential market of nearly \$1 billion by 2030. Automotive and industrial applications are expected to drive a projected 30% compound annual growth rate for TMR, significantly outpacing the growth of the overall magnetic sensor market.

Allegro stated that in addition to accelerating our TMR roadmap and further strengthening our leadership position in the magnetic sensor field, this acquisition will also enable us to offer a broader, more differentiated product range to benefit our customers.

3. Nordic acquires Atlazo IP portfolio

Nordic announced that it has reached an agreement to acquire the intellectual property portfolio of Atlazo, an American artificial intelligence and machine learning company. This acquisition is a tactical move aimed at providing Nordic with internal artificial intelligence/machine learning capabilities and further developing miniaturized edge processing machine learning capabilities in its low-power IoT product portfolio.

Nordic stated in the announcement: "Although this is a small supplemental acquisition for Nordic, we believe it has strategic significance. The importance of edge devices is increasing, leading to greater demand for computing power, advanced services, and intelligence at the network edge. To meet these needs, Nordic plans to leverage Atlazo's ultra-low power Al/ML processor technology in future system-on-chips, enhancing the company's market products in many vertical market areas in which Nordic operates." In addition, Atlazo's sensor technology is expected to aid its development in the healthcare market, especially in providing chips for wearable and diagnostic devices in this market.

4. Renesas Electronics acquires Sequans

On August 7, Renesas Electronics announced the acquisition of Sequans, a French cellular IoT wireless chip and module manufacturer.

Founded in 2003, Sequans has long been engaged in the development of the LTE-M/NB-IoT wireless module platform "Monarch" and has offices in the United States, the United Kingdom, Israel, Taiwan, and mainland China.

Renesas and Sequans have been collaborating on the development of IoT modules based on Monarch since October 2020. With this acquisition, Renesas Electronics will strengthen its product lineup for the WAN (Wide Area Network) market, including cellular IoT.

Previously, Renesas Electronics acquired Dialog Semiconductor, Celeno Communications, and Panthronics, and acquired Wi-Fi, Bluetooth, and NFC connectivity technologies. The acquisition of Sequans is aimed at further expanding Renesas Electronics' range of IoT connectivity technologies

II. What signals are being released behind the mergers and acquisitions?

1. Frequent mergers and acquisitions in EDA/IP

EDA/IP belongs to the upstream support industry of semiconductors, and its importance to chip design, manufacturing, and packaging and testing is self-evident. To meet the growing complex market demands, major giants have been adopting merger and acquisition strategies to drive industry development and their own growth.

This is also the reason for Cadence's frequent acquisitions.

In fact, in the long run, the development of semiconductors cannot be separated from mergers and acquisitions, especially the development history of the EDA industry is a magnificent epic full of mergers and acquisitions.

According to data from Jak Electronics, the EDA industry has experienced nearly 300 mergers and acquisitions in the past 30 years, with about 20 mergers and acquisitions occurring in a single year during the industry's heyday. Through these acquisitions, they have brought together technology, knowledge, and talent from different fields, continuously expanded their product and service portfolio to better meet customer needs, and enhanced their market competitiveness. This strategy of combining independent research and development with mergers and acquisitions allows the three major EDA giants to continuously innovate and lead the wave of industry development. At the same time, they play a key role in the global semiconductor ecosystem. By integrating various technologies and resources, they provide comprehensive solutions for semiconductor design, manufacturing, and verification, driving the rapid growth of the semiconductor industry and protecting the competitiveness of the global semiconductor industry. This also reflects that in high-tech fields, technological innovation and market integration are inseparable, and mergers and acquisitions have become one of the important driving forces for industry evolution.

2. Chip giants seize the Al track

Al is one of the hottest tracks this year, and in response, industry vendors are trying to improve their competitiveness through mergers and acquisitions. For example, Infineon acquired Imagimob, a leader in miniature machine learning, to enhance the TinyML edge AI capabilities on its microcontrollers and sensors.

ADI and Renesas Electronics have also made edge-side AI/ML layouts. ADI's recent acquisitions of Mipsology and Nod.ai, for example, show ADI's attempt to catch up with NVIDIA.

Since last year, Lisa Su and other executives have developed a comprehensive AI strategy that focuses on "AMD's multibillion-dollar growth opportunity in the cloud, at the edge, and across an increasingly diverse set of intelligent endpoints.

In June, AMD's powerful AI chips, the Instinct MI300 series, presented NVIDIA with its biggest challenge yet. The new lineup includes the MI300X, which will provide greater efficiency and cost savings for running large language models compared to NVIDIA's flagship H100 data center GPU.

But for AMD to effectively challenge NVIDIA in AI computing, chip designers need to attract software developers to build on their hardware. That's why AMD is integrating its previously disparate CPU, GPU and adaptive chip software development stacks to provide a "cohesive AI training and inference interface" called the AMD Unified AI Stack.

With the acquisitions of Mipsology and Nod.ai, AMD hopes to help the company accelerate customer engagement and expand its AI software development capabilities, making it easy for customers to deploy high-performance AI models tuned to AMD hardware. But in the face of catching up, NVIDIA is also continuing to make efforts. Following the secret acquisition of AI startup OmniML in February this year, NVIDIA in July, NVIDIA has reached a deal worth \$300 million of Lambda Labs equity, Lambda Labs is also an AI startup, the main business is to provide GPU cloud services for AI training, and its competitors include major cloud service providers such as AWS.

It's worth noting that NVIDIA's money is not only being spent on edge computing and AI cloud

services, but NVIDIA has also invested \$50 million in biotech company Recursion. The two companies are building large-scale biomolecular generative AI models.

As Jen-Hsun Huang once said, "Many people think of NVIDIA as a chip company, but in reality, NVIDIA is a vertically integrated AI company."

It can be seen that NVIDIA is also laying out the AI field in all directions.

3. The promising prospects of automotive chips, and the acceleration of third-generation semiconductors

In addition, with the rapid development of electric vehicles, the load of automotive semiconductors has been on the rise in the past decade. Omdia predicts that the size of the automotive semiconductor market will grow to more than 80 billion U.S. dollars by 2025. Against this backdrop, automotive chip giants are actively preparing for battle, constantly enhancing their own strength through frequent mergers and acquisitions to meet the rapidly developing automotive technology needs.

In the field of third-generation semiconductors, many leading companies have been frequently acquiring joint ventures and expanding production this year, hoping to catch the wave and opportunity of third-generation semiconductors.

From Bosch's acquisition of TSI, Foxconn's acquisition of Guochuang Semiconductor's SiC department, and Rohm's acquisition of Solar Frontier's original Kokusai factory (Japan), it is not difficult to see that the sharing of third-generation semiconductors has already begun.

4. Domestic semiconductors set off a wave of mergers and acquisitions

Against the backdrop of intense competition in the global semiconductor industry, Chinese semiconductor companies are also expanding their technical capabilities and product lines through mergers and acquisitions.

It needs to be emphasized that the active participation of domestic semiconductor manufacturers in mergers and acquisitions is not only an important measure to promote industrial upgrading and technological progress, but also a key path to achieving self-sufficiency. Overall, analog chips, MCUs, power semiconductors, and automotive semiconductors are the hot areas for mergers and acquisitions among domestic semiconductor companies. Looking at industry trends, mergers and acquisitions integration is an inevitable result of industry rules. Regarding domestic semiconductor mergers and acquisitions, Zhu Jing, deputy secretary-general of the Beijing Semiconductor Industry Association, once stated that compared with the integration between international giants, China's semiconductor mergers and acquisitions are of a smaller scale, generally in the form of "big eats small", and occur between similar companies. Companies that grow first gather more resources to acquire companies that are catching up and have certain growth bottlenecks. It is expected that the next wave of mergers and acquisitions in China's semiconductor industry will begin to land around 2025. At that time, many funds will come to the exit period, and the collective integration wave may last for many years.

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