



Monthly Market Insights

August 2024



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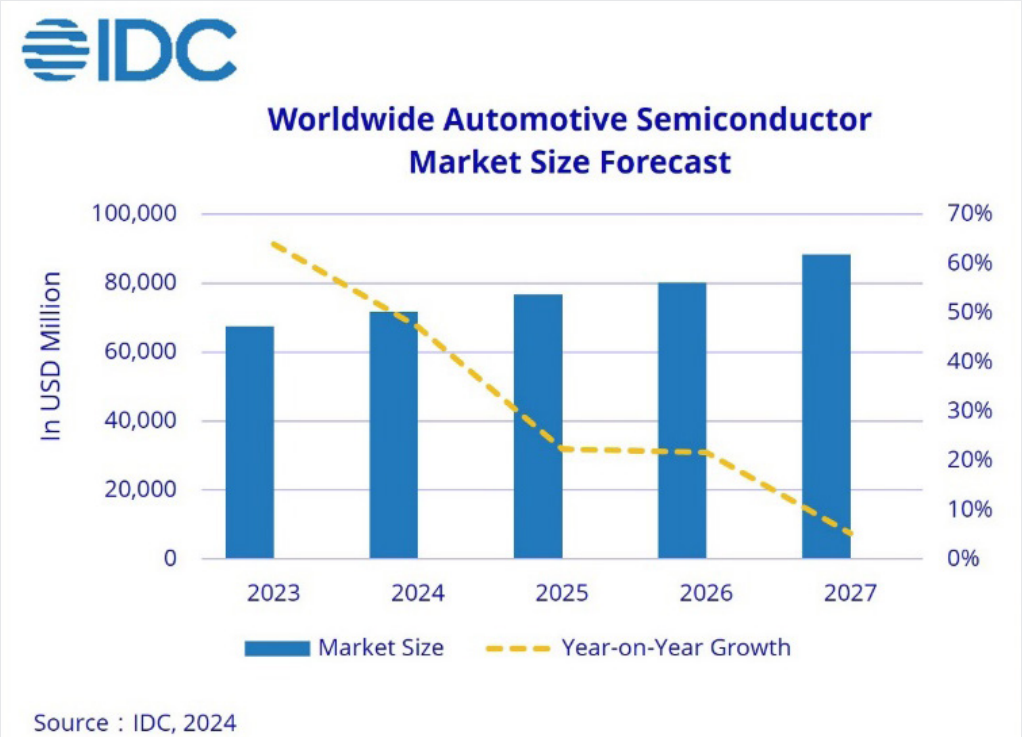
General Market Updates

Cyberattack Disrupts Microchip Technology, Halting Chip Production and IT Systems

Semiconductor manufacturing is experiencing a wave of exciting innovations that address significant challenges. Automation and robotics are revitalizing fabrication processes, enhancing production efficiency, cutting costs, and improving product quality. As the demand for smaller, faster, and more efficient chips grows, fabs are evolving with advancements like extreme ultraviolet (EUV) lithography and advanced packaging methods, allowing for the creation of complex integrated circuits. While Moore’s Law remains a cornerstone, researchers are exploring alternatives, including 3D chip stacking and quantum computing, to overcome physical limitations of silicon technology. The industry is also focusing on sustainability and continues to refine supply and demand dynamics affected by the pandemic.

Automotive Industry

The automotive semiconductor market is projected to exceed \$88 billion by 2027, driven by rising demand for HPC ICs, GPUs, radar chips, and laser sensors. Growth is fueled by the increasing adoption of ADAS, electric vehicles (EVs), and the Internet of Vehicles (IoV).



Source: IDC, 2024 Report



General Market Updates

Manufacturing Plants

India Expands Semiconductor and Technology Landscape

Indian opto-semiconductor maker Polymatech has acquired a US-based IC equipment company to enhance its chipmaking capabilities, while Tata Electronics has started constructing its first IC backend facility in Assam, marking a significant step in India's chipmaking industry. These moves highlight India's growing semiconductor sector amid rising digital transaction demands and evolving market opportunities.

Biden Administration Invests \$1.6 Billion in Texas Instruments' New Chip Plants

The Biden administration has announced a \$1.6 billion investment in Texas Instruments for new chip manufacturing plants in Utah and Texas, funded by the CHIPS and Science Act. This investment aims to create thousands of jobs, bolster U.S. semiconductor production, and enhance economic and national security by reducing dependence on foreign supply chains.

U.S. Semiconductor Manufacturing Projects Face Significant Delays

Despite over \$400 billion in tax incentives and subsidies from the Inflation Reduction Act and the CHIPS and Science Act, numerous U.S. semiconductor projects are experiencing delays. Major companies like TSMC, Intel, and Samsung have postponed their plans due to market conditions, policy uncertainties, and construction challenges, with some projects facing delays of several years.

EU Approves €5 Billion for New TSMC Chip Factory in Dresden

The European Commission has greenlit €5 billion in state aid for a new semiconductor factory in Dresden, marking TSMC's first European venture. This factory, a joint project with Bosch, Infineon, and NXP, aims to enhance Europe's chip supply security and is set to begin production in 2027, focusing on automotive chips and creating 2,000 jobs.

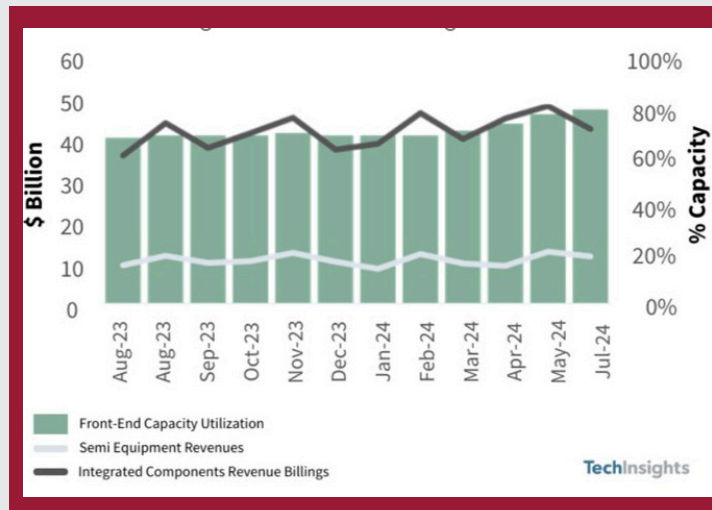


General Market Updates

Cyberattack Disrupts Microchip Technology, Halting Chip Production and IT Systems

Microchip Technology, a major US semiconductor manufacturer, has been hit by a significant cyberattack, forcing the company to take some of its critical IT systems offline, severely impacting its chip production and business operations. Detected on August 17, the attack prompted the company to isolate compromised systems and shut down key operations as a precaution, leaving factories operating at reduced capacity. The disruption has affected Microchip's ability to fulfil client orders globally, stalling production of microprocessors, microcontrollers, and other vital components. With offices and facilities across the US, Asia, and Europe, the company has yet to clarify the geographical scope of the attack. While the identity of the attackers remains unknown, Microchip is collaborating with third-party cybersecurity experts to investigate and mitigate the damage. This incident adds to a growing trend of cyberattacks targeting tech firms, underscoring the increasing vulnerability of critical semiconductor supply chains.

Data Observatory



This chart shows trailing 12-month data for fabrication equipment sales versus integrated components revenues, overlaid against capacity utilization.

Despite speculation about potential delays in NVIDIA Blackwell production, TechInsight's forecast remains optimistic. The strong demand for NVIDIA Hopper suggests that any capacity constraints on Blackwell could lead to higher prices, mirroring last year's trend with Hopper. Memory continues to see robust growth, driven by increased datacenter AI needs. While semiconductor equipment has experienced some slip, the automotive and industrial sectors are poised for recovery and growth.



General Market Updates

IC Design Houses Face Uncertain Q3 2024 Despite Peak Season

IC design houses, including Realtek Semiconductor and RichWave Technology, are anticipating weaker order visibility for the third quarter of 2024, contrary to the usual peak season expectations. While second-quarter sales were satisfactory, there are concerns that early replenishment might dampen revenue for the traditionally high-demand period, with speculation of an inventory correction impacting the sector.

Semiconductor Supply Chain July Overview

Demand Fluctuations

Strong demand persists for high-performance computing (HPC) components, memory, and automotive semiconductors. However, some segments, such as consumer electronics, are experiencing variable demand.

Supply Chain Adjustments

Efforts to stabilize supply chains disrupted by the pandemic are ongoing, with companies focusing on diversifying sources and improving inventory management.

Innovation and Expansion

Investments in new technologies, including automation, robotics, and advanced manufacturing techniques, are accelerating. This includes advancements in EUV lithography and new material explorations.

Market Dynamics

Major players like Infineon, NXP, ST, TI, and Renesas are consolidating their positions, with a significant focus on automotive and high-performance applications.

Sustainability Initiatives

There is an increasing emphasis on sustainability within the semiconductor supply chain. Companies are working on reducing their environmental impact through more energy-efficient processes and sustainable practices.



Market Specific Updates



- AMD plans to acquire server builder ZT Systems for \$4.9 billion in cash and stock, aiming to boost its AI hardware capabilities and compete with Nvidia. The deal, expected to close in early 2025, will be largely funded by cash, with the remainder in stock, and will add ZT Systems' expertise to AMD's AI GPU efforts.
- AMD is reportedly planning to launch its Ryzen 9000 X3D CPUs at CES 2025, later than initially expected, with anticipated updates aimed at improving performance and stability following mixed reviews of the current Ryzen 9000 series.



- Infineon Technologies has agreed to pay €753.5 million (\$837.21 million) to settle a long-standing dispute with Qimonda's insolvency administrator, reducing the claim from €800 million. This settlement resolves a legal battle over alleged inflated asset transfers when Qimonda, spun off from Infineon in 2006, went bankrupt in 2009.
- Infineon Technologies is partnering with GEDU International to recruit Vietnamese talent for its Dresden headquarters. The collaboration, formalised recently, will support a dual training program and direct recruitment to fill 3,700 job openings at Infineon.
- Infineon Technologies has launched the first phase of its new Kulim 3 fab in Malaysia, aiming to become the world's largest and most competitive 200-millimetre silicon carbide (SiC) production facility. This expansion, following the openings of Kulim 1 and 2, underscores Infineon's commitment to semiconductor manufacturing in Malaysia and supports the development of efficient electric vehicle technologies.
- Infineon has introduced new AIROC chips, including the AIROC CYW20829 and CYW89829 microcontrollers, targeting energy-efficient Bluetooth 5.4 Low Energy applications.



Market Specific Updates

Panasonic®

- Panasonic Life Solutions India's Industrial Devices Division has launched a new suite of factory automation solutions, including the HL-G2 Series Laser Sensors, GM1 Motion Controller, and MINAS A7 Servo Systems, aimed at enhancing efficiency and productivity for Indian OEMs.
- Despite a slowdown in Europe's energy-saving heat pump market due to reduced subsidies, Japanese companies Daikin and Panasonic are continuing to invest heavily, betting on long-term growth in demand for these energy-efficient technologies.
- Panasonic Energy has licensed CAMX Power's GEMX® platform for cathode active materials used in lithium-ion batteries. The GEMX® technology, covered by over 30 global patents, enhances battery performance and stability by optimizing the placement of cobalt and aluminium in cathode particles, leading to reduced costs and improved efficiency.

onsemi™

ON Semiconductor is investing \$2 billion in a new Czech Republic plant and expanding in South Korea to strengthen its supply chain and mitigate risks from rising Chinese chip makers, as global competition and geopolitical uncertainties increase.

ON Semiconductor's new €2.75 million lab in Slovakia is pioneering advances in power management by developing and testing cutting-edge silicon and silicon carbide semiconductors, which enhance electric vehicle range by up to 30% and improve renewable energy applications.

More Than Sourcing, Your Complete Solution.



Reverse Logistics



Shortage Management &
PPV



Obsolescence
Management



Vendor Tail
Management



Nuvox



Market Specific Updates



- Vishay Intertechnology's new VEMD8082 silicon PIN photodiode enhances sensitivity in biomedical applications by offering increased reverse light current, reduced capacitance, and faster response times, making it ideal for precise monitoring in devices like smartwatches.
- Vishay Intertechnology's new shielded IFDC and semi-shielded IFSC series ferrite inductors, available in 2020DE, 3232DB, and 5050HZ case sizes, offer higher inductance, lower DCR, and improved performance at reduced sizes and costs, making them ideal for energy storage and noise suppression in consumer electronics and computing applications.



- Texas Instruments has secured a \$1.6 billion grant from the U.S. government under the CHIPS Act to build up to four new chip factories in Sherman, Texas, enhancing domestic production of industrial-grade semiconductors and creating thousands of jobs as part of a broader push to revitalize American semiconductor manufacturing.



Market Specific Updates



- TDK's extended ERU27M series of AEC-Q200 qualified SMD alloy powder chokes now support rated currents up to 48 A with improved saturation characteristics, low DC resistance, and compact dimensions, making them suitable for high-current applications in automotive and industrial sectors such as DC-DC converters and solar converters.
- TDK's TCM06U series thin-film common mode filters, now in production, are the first to achieve 30 dB attenuation at 10 GHz and support high-speed signals with a cutoff frequency of 20 GHz, enhancing noise control for USB 3.2 and USB 4 applications in compact digital devices.



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