

AI Chip Market to Surge to \$335B by 2031, Driven by Edge Computing, Gen AI & Custom Silicon Trends | DataM Intelligence

AI chip market to hit USD 335.02B by 2031, driven by generative AI, edge computing, and custom silicon demand across automotive, cloud, and smart devices.

AUSTIN, TX, UNITED STATES, July 30, 2025 /EINPresswire.com/ -- The [Artificial Intelligence \(AI\) Chip market](#) was valued at US\$ 25.12 billion in 2022 and is estimated to grow at a CAGR of 38.41% during the forecast period (2024–2031), reaching a value of approximately US\$ 335.02 billion by 2031. This explosive growth is fueled by the global acceleration of AI deployment across industries, the rapid evolution of hardware architectures, and the surge in demand for high-performance computing in cloud and edge environments.

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AI chip market to skyrocket from US\$ 25.12B in 2022 to US\$ 335.02B by 2031 at 38.41% CAGR- driven by GenAI, edge computing, and global chip innovation shaping the future of smart infrastructure.”

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Market Dynamics

Growth Drivers:

The AI chip market is riding the wave of digital transformation, where artificial intelligence is no longer a buzzword but a mission-critical component in enterprise and consumer ecosystems. From natural language

processing to autonomous driving, smart cities to real-time diagnostics in healthcare, AI

applications require specialized chips that offer both speed and efficiency.

The growing reliance on generative AI technologies, including large language models, has triggered record-breaking demand for high-performance chips. Organizations are scaling up their infrastructure to accommodate increasing workloads, leading to massive investments in AI-focused GPUs, ASICs, and edge-based accelerators.

Another critical driver is the increasing prevalence of edge computing. As businesses aim to reduce latency and bandwidth usage, there's rising demand for AI chips embedded in edge devices, enabling on-device inference and analytics without cloud dependency.

Recent Corporate and Industry Developments:

1.Nvidia Orders H20 Chips for China:

Nvidia placed an order for 300,000 H20 AI chipsets with TSMC as sales are set to resume in China following a reversal of US export restrictions. This comes after earlier bans on advanced chips, with the US government now indicating that limited exports are strategically allowed to prevent China from creating its own advanced chip capabilities. Nvidia's H20 is a less powerful AI chip designed to comply with US rules, and this order adds to their existing stockpile of 600,000–700,000 chips aimed at Chinese tech firms such as Tencent, ByteDance, and Alibaba.

2.Groq Nears \$600 Million Funding at \$6 Billion Valuation:

AI chip startup Groq is in advanced talks to raise \$600 million in a new funding round, doubling its valuation in just nine months to nearly \$6 billion. The round is reportedly led by Disruptive, a venture firm, with Groq recently striking infrastructure deals with telecom and cloud players. This highlights strong investor demand for specialized AI chipmakers that can rival incumbents like Nvidia.

3.TSMC Sees Accelerating AI Chip Demand:

TSMC, the leading contract chipmaker, reported a year-over-year revenue increase of over 40% in its latest quarter, with 60% of sales from high-performance computing—including AI chips for clients like Nvidia and Apple. TSMC's executives note that AI-driven demand and global investments in local facilities continue to boost outlook, and US-China trade policy can have rapid impacts on their business.

Key Trends:

Edge AI is surging: real-time, low-latency AI on devices is a new growth frontier.

Investors are backing both large incumbents (Nvidia, AMD) and specialized startups (Groq, Thinking Machines).

Industrial policies and geopolitics are heavily shaping global market structure and supply

chains.

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Investment Trends:

The AI chip industry is witnessing unprecedented capital inflows. Market leaders are expanding production capacity, acquiring innovative startups, and launching next-gen chipsets optimized for AI training and inference.

Startups specializing in ultra-low-power chips, neuromorphic computing, and custom accelerators are securing venture capital funding as investors look for niche opportunities in the broader AI ecosystem. Meanwhile, major chipmakers are aggressively competing to win hyperscaler contracts, creating a dynamic, high-stakes environment.

Government initiatives and strategic public-private partnerships are also playing a vital role in promoting AI chip manufacturing and reducing dependence on global supply chains.

Competitive Landscape:

The AI chip space is dominated by a few global giants, but several emerging players are challenging the status quo through innovation.

NVIDIA Corporation

Intel Corporation

Advanced Micro Devices Inc.(AMD)

MediaTek Inc

Google

Samsung Electronics Co Ltd

Qualcomm Technologies Inc.

Alphabet Inc.

INTERNATIONAL BUSINESS MACHINES CORPORATION

Cambricon Technologies

The competitive intensity is further heightened by ongoing advancements in chip architecture, memory bandwidth, and power efficiency.

Market Segmentation:

By Chip: Graphics Processing Unit (GPU), Application-Specific Integrated Circuit (ASIC), Field-Programmable Gate Array (FPGA), Central Processing Unit (CPU), Others.

By Processing: Cloud, Edge.

By Technology: System On Chip, System in Package, Multi Chip Module, Others.

By Application: Nature Language Processing, Robotics, Computer Vision, Network Security, Others.

By Industry Vertical: Media and Advertising, BFSI, IT and Telecom, Retail, Healthcare, Automotive and Transportation, Other.

By Region: North America, Latin America, Europe, Asia Pacific, Middle East, and Africa.

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Latest News – USA

In the United States, chipmakers and cloud providers are forming new alliances to build next-generation data center infrastructure optimized for AI workloads. A leading chip manufacturer announced a multi-billion-dollar contract with an electric vehicle company to produce advanced AI chips domestically. This move aims to reduce reliance on foreign fabs and ensure long-term chip supply security.

A new AI memory platform was also recently launched, designed to lower the cost of operating large-scale AI systems. By allowing AI chips to interface with conventional memory instead of expensive alternatives, companies hope to make AI infrastructure more scalable and cost-effective.

Meanwhile, regulatory flexibility on AI chip exports has returned select U.S.-designed chips to international markets, opening the door for renewed growth in regions previously restricted by policy.

Latest News – Japan

Japan has taken major strides to revitalize its semiconductor ecosystem with the launch of collaborative ventures between domestic firms and international chipmakers. One such initiative focuses on developing memory alternatives to current high-bandwidth standards, which could significantly improve cost efficiency and performance.

A Tokyo-based AI chip startup recently secured millions in government funding to advance edge AI chips for use in both civilian and defense technologies. This highlights Japan's ambition to establish technological sovereignty in AI hardware.

Additionally, Japan's parliament passed an AI governance framework designed to promote innovation while mitigating risks. The regulation aims to support companies developing AI technologies without creating burdensome compliance obstacles.

Conclusion:

The Artificial Intelligence (AI) chip market is entering a golden era of growth, driven by technological necessity, economic opportunity, and global digitalization. With a market value set to leap from US\$ 25.12 billion in 2022 to over US\$ 335.02 billion by 2031, the journey is not just about faster chips but smarter strategies, resilient supply chains, and inclusive global innovation. As competition intensifies, the leaders will be those who can combine cutting-edge performance with scalability, efficiency, and ecosystem adaptability.

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