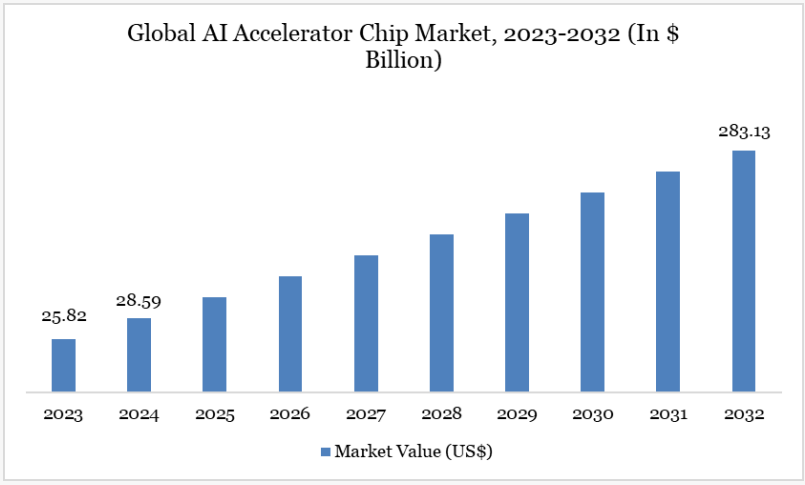
AI Accelerator Chip Market Fueled by AI Adoption in Cloud Computing, Edge Processing and Automotive | DataMIntelligence

AI Accelerator Chip Market grows with demand from data centers, edge devices, and autonomous systems, powering high-performance and next-gen AI applications.

NEW YORK, NY, UNITED STATES, August 19, 2025 /EINPresswire.com/ -- Global AI Accelerator Chip Market reached US$ 28.59 billion in 2024 and is expected to reach US$ 283.13 billion by 2032, growing with a CAGR of 33.19% during the forecast period 2025-2032.



AI Accelerator Chip Market Analysis

The global AI accelerator chip market is being turbocharged by landmark public investments and strategic industrial policies. In the US, the CHIPS and Science Act commits approximately US$ 52.7 billion across manufacturing subsidies, research, and workforce development, including US$ 39 billion for domestic chip production and US$ 13 billion for R&D and training initiatives. In China, the third phase of the National Integrated Circuit Industry Investment Fund (Big Fund III) has launched with a registered capital of ¥344 billion (US$ 47.5 billion), targeted at bolstering advanced AI chip infrastructure, including fabrication equipment, materials, and high-bandwidth memory (HBM) capabilities.

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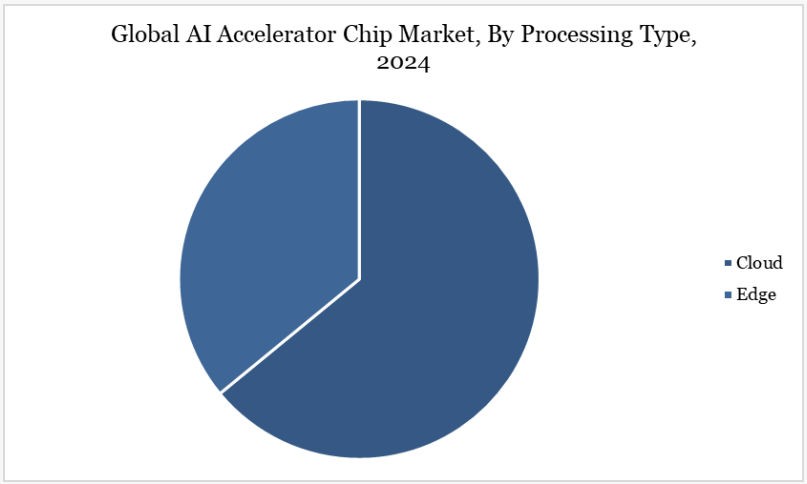
Strategic Policy Commitments and Capital Mobilization :



AI Accelerator Chip Market By Processing Type

 US Industrial Push: Under the CHIPS Act, a substantial US$ 8.5 billion in direct funding supports Intel's expansion of advanced semiconductor manufacturing across multiple states, aligning with US$ 100+ billion in corporate investments and significant job creation.

 Samsung's Expansion: The US Department of Commerce granted US$ 4.74 billion to Samsung's Texas chip fabrication and R&D facility, part of broader resilience-building, expected to generate 12,000 construction jobs and 3,500 manufacturing roles.

 Micron's Mega Investment: In 2025, Micron unveiled a US$ 200 billion domestic investment plan, including new fab sites and HBM capacity in Idaho, New York, and Virginia, supported by US$ 275 million in CHIPS Act funding.

 China's Sovereign Push: Big Fund III's US$ 47.5 billion capitalization marks a strategic escalation in state-led chipmaking efforts, particularly focused on overcoming bottlenecks in lithography, design tools, and localized AI semiconductor production.

Emerging Technology & Policy Trends :

 Sovereign Supply Chain Strategies: A clear industrial policy divergence is emerging, where the US leverages public-private investments and incentives, China doubles down on state-directed capital through equity-led funds.
 Talent & Infrastructure Focus: The CHIPS Act earmarks investments not only in physical infrastructure but also in workforce education and advanced R&D through institutions like the National Semiconductor Technology Center.
 Cross-Sector Collaboration: Samsung's Texas expansion and Micron's fabrication plans reflect increasing integration between chipmakers, regional economies, and AI ecosystems.
 Security-Driven Export Controls: Latest developments include a policy allowing Nvidia and AMD to sell downgraded AI chips to China under the condition that 15% of sales revenue is remitted to the US government, a novel twist in tech diplomacy.
 Global Competitive Positioning: The scale and direction of public funding underscore that AI chip leadership is now a strategic priority, governments are actively shaping markets to secure technological and geopolitical advantage.

AI in Action: Policy Impacting AI Accelerator Chip Market

 In mid-2025, the US Department of Energy announced four federal sites, including Idaho National Laboratory and Oak Ridge, to be developed into AI data center and energy infrastructure hubs, effectively creating civilian-grade AI computing zones to reduce latency and bolster national capacity.
 The White House's AI Action Plan (July 2025) mandates accelerated development of AI data centers by easing land permitting and fast-tracking environmental reviews, enabling the rapid roll-out of large-scale AI infrastructure on federal lands.
 US export policies now require companies like NVIDIA and AMD to remit 15% of revenue from AI chip sales to China back to the US Treasury, an unusual arrangement that both unlocks access to foreign markets and channels significant funds into domestic accounts.
 Despite political support, China's AI chip adoption remains skewed toward US technology: In 2024, Chinese firms purchased about 1 million NVIDIA H20 chips, compared with just 450,000 Huawei Ascend 910B chips, underscoring domestic producers' lag in performance and market traction.
 In energy performance terms, new-generation AI chips have significantly improved, a recent study notes that modern AI chips can train models in 90 days consuming only 8.6 GWh, using less than one-tenth the energy of previous generations, reflecting growing emphasis on compute efficiency.

Asia-Pacific AI Accelerator Chip Landscape :

 Japan's Strategic Investments Ramp Up: In November 2024, Japan unveiled a bold investment plan of ¥10 trillion (US$ 65 billion) through fiscal 2030 to energize its semiconductor and AI sectors. This initiative is part of a broader goal to attract ¥50 trillion (US$ 325 billion) in combined public–private investments, signaling a long-term commitment to reclaiming technological leadership.
 Rapidus: A National Chipmaking Flagship: The government has funneled nearly ¥1 trillion (US$ 6.5 billion) in subsidies to Rapidus, Japan's domestic semiconductor venture aiming to mass-produce 2 nm chips by 2027. This support includes ¥590 billion (US$ 3.83 billion) in additional grants layered atop earlier investments, marking a high-stakes bet on next-gen logic chip sovereignty.
 Japan's Leading-edge Semiconductor Innovation Hub: In 2022, Japan established the Leading-edge Semiconductor Technology Center (LSTC), backed by a ¥45 billion (US$ 292 million) research grant, to advance 2 nm+ technology through industry–academia collaboration. As of 2024, LSTC supports R&D in cutting-edge AI chip design and pilot-line manufacturing, fostering a domestic innovation ecosystem.
 Malaysia's Push for Chip Design Sovereignty: In March 2025, Malaysia struck a US$ 250 million deal with Arm Holdings to acquire high-end chip design blueprints and train 10,000 engineers over ten years. The move forms part of a broader strategy, including plans for Southeast Asia's largest integrated-circuit design park and the creation of around 10 local chip firms targeting revenues of US$ 1.5–2 billion each.

Tech Giants Unite to Establish Open Standard for Next-Gen AI Accelerator Interconnects:

In May 2024, industry leading companies including Intel, Google, Microsoft, Meta, AMD, Hewlett Packard Enterprise, Broadcom, and Cisco announced the formation of the Ultra Accelerator Link (UALink) Promoter Group, a collaborative initiative aimed at developing an open standard for linking AI accelerator chips in data centers. This move comes amid an exponential rise in AI workloads, where efficient interconnect technologies are critical to scaling AI model training and inference.

The group's first specification, UALink 1.0, will enable the connection of up to 1,024 AI accelerators, initially GPUs, across a single computing "pod" (defined as one or more server racks). Built on open standards such as AMD's Infinity Fabric, UALink 1.0 promises direct memory loads and stores between AI accelerators, significantly improving data throughput while reducing latency compared to existing proprietary interconnect solutions. This advancement is expected to accelerate multi-chip training efficiency for large language models, generative AI, and other compute-intensive applications.
The UALink Consortium will be formally established in Q3 2024 to govern the specification's evolution, with UALink 1.1, offering higher bandwidth capabilities, planned for release in Q4 2024. The first commercial products based on UALink are projected to enter the market within the next two years, potentially reshaping competitive dynamics by providing an alternative to proprietary interconnect solutions.
Notably absent from the founding members is Nvidia, which currently commands an estimated major share of the AI accelerator market. For the broader AI accelerator chip market, this development signals a push toward interoperability, faster innovation cycles, and reduced vendor lock-in, factors likely to influence data center AI infrastructure investment decisions worldwide.

Why Choose This Global AI Accelerator Chip Market Report
 Up-to-Date Public Policy Data: Includes verified figures from U.S. CHIPS investments and China's Big Fund III.
 Policy and Industrial Strategy Insights: Documents how sovereign investments are reshaping global AI chip supply chains.
 Investment and Workforce Intelligence: Highlights funding for infrastructure, educational programs, and ecosystem-building.
 Sector Differentiation: Tracks public vs. private investment dynamics and geopolitical implications.
 Actionable Intelligence: Guides strategic decisions around partnerships, manufacturing, and innovation hubs.
 Expert Analysis: Backed by sources deeply familiar with policy trends and AI semiconductor developments.

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