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Global In-memory Computing Chips for AI Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global In-memory Computing Chips for AI market size is expected to reach $ 42322 million by 2032, rising at a market growth of 109.7% CAGR during the forecast period (2026-2032).
In-memory Computing Chips for AI are specialized chips that perform AI computations directly inside memory arrays or very close to where data is stored, instead of moving data back and forth between memory and a separate processor. By integrating computation?such as multiply-accumulate operations used in neural networks?within memory, these chips significantly reduce data movement, energy consumption, and latency, overcoming the memory bandwidth bottleneck of traditional von Neumann architectures. In-memory computing chips are particularly well suited for AI inference and edge-AI applications, and are commonly implemented using SRAM, DRAM, or emerging non-volatile memory technologies (such as ReRAM or MRAM), offering a promising path toward high-efficiency, low-power AI acceleration. The downstream market for In-Memory Computing (CIM) Chips for AI is currently in an early adoption phase, with demand concentrated in power- and latency-sensitive AI inference scenarios rather than large-scale training. Key downstream users include edge AI device manufacturers, robotics OEMs, smart cameras, industrial automation system integrators, and IoT solution providers, where CIM chips are used to reduce energy consumption and enable real-time processing under tight thermal and power constraints. Deployment is typically project-based or design-win driven, with close collaboration between chip vendors and system customers, and volumes remain limited compared with mainstream GPUs and NPUs. As AI applications expand deeper into embedded, industrial, and always-on systems, downstream demand for CIM chips is expected to broaden, especially in scenarios where conventional architectures struggle to meet power-efficiency requirements.
The In-memory Computing Chips for AI market is at an early but rapidly emerging

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stage, driven by the growing need for energy-efficient AI inference as traditional GPU- and CPU-centric architectures face power and memory-bandwidth limitations. Current demand is mainly concentrated in edge AI, smart sensors, robotics, automotive, and low-power intelligent devices, where reducing latency and energy consumption is more critical than peak compute performance. The competitive landscape is dominated by startups, university spin-offs, and joint development programs with foundries and memory vendors, while large semiconductor companies are still largely in exploratory or pilot phases. Although large-scale adoption is constrained by challenges in accuracy, reliability, software ecosystem maturity, and manufacturing consistency, industry consensus expects commercial penetration to accelerate after the mid-2020s, with CIM chips first gaining traction in specialized and power-constrained AI applications before broader deployment.

This report studies the global In-memory Computing Chips for AI demand, key companies, and key regions.

This report is a detailed and comprehensive analysis of the world market for In-memory Computing Chips for AI, and provides market size (US$ million) and Year-over-Year (YoY) growth, considering 2025 as the base year. This report explores demand trends and competition, as well as details the characteristics of In-memory Computing Chips for AI that contribute to its increasing demand across many markets.

Highlights and key features of the study

Global In-memory Computing Chips for AI total market, 2021-2032, (USD Million)

Global In-memory Computing Chips for AI total market by region & country, CAGR, 2021-2032, (USD Million)

U.S. VS China: In-memory Computing Chips for AI total market, key domestic companies, and share, (USD Million)

Global In-memory Computing Chips for AI revenue by player, revenue and market share 2021-2026, (USD Million)

Global In-memory Computing Chips for AI total market by Type, CAGR, 2021-2032, (USD Million)

Global In-memory Computing Chips for AI total market by Application, CAGR, 2021-2032, (USD Million)

This report profiles major players in the global In-memory Computing Chips for AI market based on the following parameters - company overview, revenue, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Samsung, SK Hynix, Syntiant, D-Matrix, Mythic, Graphcore, EnCharge AI, Axelera AI, Hangzhou Zhicun (Witmem) Technology, Suzhou Yizhu Intelligent Technology, etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

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Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the world In-memory Computing Chips for AI market

Detailed Segmentation:

Each section contains quantitative market data including market by value (US$ Millions), by player, by regions, by Type, and by Application. Data is given for the years 2021-2032 by year with 2025 as the base year, 2026 as the estimate year, and 2027-2032 as the forecast year.

Global In-memory Computing Chips for AI Market, By Region:

United States

China

Europe

Japan

South Korea

ASEAN

India

Rest of World

Global In-memory Computing Chips for AI Market, Segmentation by Type:

In-memory Processing (PIM)

In-memory Computation (CIM)

Global In-memory Computing Chips for AI Market, Segmentation by Storage Medium:

DRAM

SRAM

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Others

Global In-memory Computing Chips for AI Market, Segmentation by Calculation Method:

Analog CIM

Digital CIM

Global In-memory Computing Chips for AI Market, Segmentation by Application:

Small Computing Power

Large Computing Power

Companies Profiled:

Samsung

SK Hynix

Syntiant

D-Matrix

Mythic

Graphcore

EnCharge AI

Axelera AI

Hangzhou Zhicun (Witmem) Technology

Suzhou Yizhu Intelligent Technology

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Shenzhen Reexen Technology

Beijing Houmo Technology

AistarTek

Beijing Pingxin Technology

Key Questions Answered

1. How big is the global In-memory Computing Chips for AI market?
2. What is the demand of the global In-memory Computing Chips for AI market?
3. What is the year over year growth of the global In-memory Computing Chips for AI market?
4. What is the total value of the global In-memory Computing Chips for AI market?
5. Who are the Major Players in the global In-memory Computing Chips for AI market?
6. What are the growth factors driving the market demand?

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