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Global eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing market size is expected to reach $ 174 million by 2032, rising at a market growth of 12.2% CAGR during the forecast period (2026-2032).

eNVM for neuromorphic computing refers to a category of emerging memory technologies and product solutions that directly embed non-volatile storage capabilities into chips, memory subsystems, or process platforms. Its core objective is to reduce the power consumption, latency, and area burden caused by repeated data movement between processors and external memory in edge intelligence, compute-in-memory, and brain-inspired architectures. This field covers ReRAM, RRAM, eMRAM, F-RAM, SONOS-type embedded flash, SRAM with non-volatile backup, and related IP modules. Its key capabilities include data retention after power loss, fast write speed, relatively high endurance, low standby power consumption, compatibility with CMOS logic, limited impact on analog circuits, and the feasibility of replacing traditional eFlash at advanced or specialty process nodes. Typical applications are concentrated in MCUs, PMICs, sensor controllers, NFC and security chips, industrial and automotive event recording, wearable and medical devices, AIoT terminals, and edge AI chips that store neural network weights in on-chip arrays to support inference acceleration and compute-in-memory integration. Its major customers include SoC design companies, IDMs, foundry customers, and system manufacturers.

eNVM for neuromorphic computing is a composite sector that spans storage physics, IP licensing, foundry platforms, and system-level demand for low-power computing. Its commercial logic has shifted from the earlier question of simply identifying technologies that can replace eFlash to determining which players can embed non-volatile memory

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more efficiently into SoCs and edge AI chips without significantly increasing process complexity or disrupting existing logic and analog design assets. Companies such as TSMC emphasize the integrability of RRAM or ReRAM in back-end metal layers or compatible mass-production flows, while Samsung emphasizes the logic compatibility and working-memory extension potential of eMRAM at nodes such as 28 nm and 14 nm. This means industry competition is no longer about a single device parameter, but about the combined strength of process migration capability, IP maturity, PDK and EDA compatibility, customer adoption barriers, and mass-production support. The companies that ultimately win are usually not those with the most aggressive specifications, but platform-oriented players that can simultaneously deliver low power consumption, compatibility, reliability, and commercial readiness. Especially in neuromorphic-computing-related scenarios, customers care more about whether memory can be deployed close to compute units, whether it can deliver energy-efficiency advantages under frequent read/write operations, and whether it can be smoothly adopted in MCUs, PMICs, sensor controllers, and mixed-signal SoCs.

eNVM for neuromorphic computing mainly targets edge AI, industrial control, automotive electronics, wearable devices, and medical electronics, where applications are simultaneously sensitive to local inference capability, data retention after power loss, real-time recording, and low-power operation. As terminal devices become more intelligent, the value of eNVM is no longer limited to traditional configuration storage, but is gradually extending to higher-value functions such as neural-network weight residency, enhanced on-chip caching, power-loss protection, and compute-in-memory integration. For customers, the key factor driving procurement decisions is not whether a technical concept sounds advanced, but whether the product can improve system reliability and reduce overall cost under conditions of lower power consumption, faster write speed, higher endurance, and fewer peripheral components. Over the next few years, eNVM for neuromorphic computing will be mainly driven by demand from AIoT, edge intelligence, industrial control, automotive electronics, and medical electronics. It will first be adopted in scenarios such as program-data storage, power-loss protection, real-time recording, and edge inference, before gradually evolving toward on-chip weight residency, compute-in-memory integration, and deeper neuromorphic computing architectures.

From a regional perspective, production and technology supply have already formed a multipolar structure. U.S. companies are active in MRAM, mission-critical persistent memory, and AI-related memory; Taiwan’s companies and foundry ecosystem play an important role in RRAM IP, logic-compatible processes, and ecosystem coordination; South Korea maintains a leading position in advanced-node eMRAM platforms; Japan

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still has unique strengths in SONOS and specialty embedded NVM; and Israel has shown strong performance in ReRAM IP and foundry-partnered commercialization. Industrial, automotive, data infrastructure, and medical customers in North America and Europe, as well as SoC design, consumer electronics, and AIoT manufacturing ecosystems in East Asia, will continue to represent the main sources of demand. Based on demand generated by the development of automotive and other related industries, the industry outlook is generally optimistic in the short term.

This report studies the global eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing 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 eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing that contribute to its increasing demand across many markets.

Highlights and key features of the study
Global eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing total production and demand, 2021-2032, (Million Units)
Global eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing total production value, 2021-2032, (USD Million)
Global eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (Million Units), (based on production site)
Global eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing consumption by region & country, CAGR, 2021-2032 & (Million Units)
U.S. VS China: eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing domestic production, consumption, key domestic manufacturers and share
Global eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (Million Units)
Global eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing production by Type, production, value, CAGR, 2021-2032, (USD Million) & (Million Units)
Global eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing production by Application, production, value, CAGR, 2021-2032, (USD Million) & (Million Units)

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This report profiles key players in the global eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing market based on the following parameters - company overview, production, value, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Beijing InnoMem Technologies Co., Ltd., Hua Hong Semiconductor Limited, eMemory Technology Inc., Taiwan Semiconductor Manufacturing Company Limited, United Microelectronics Corporation, Floadia Corporation, Samsung Electronics Co., Ltd., Infineon Technologies AG, Tower Semiconductor Ltd., Weebit Nano Ltd., etc.

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

Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the World eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing market

Detailed Segmentation:

Each section contains quantitative market data including market by value (US$ Millions), volume (production, consumption) & (Million Units) and average price (US$/Unit) by manufacturer, 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 eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing Market, By Region:

United States

China

Europe

Japan

South Korea

ASEAN

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India

Rest of World

Global eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing Market, Segmentation by Type:

FeRAM Memory

Carbon Memory

Mott Memory

Macromolecular Memory

Global eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing Market, Segmentation by Technology Route:

Resistive ReRAM

Ferroelectric F-RAM

Charge-Trap SONOS

Other

Global eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing Market, Segmentation by Delivery Form:

Embedded Memory IP

Embedded Memory Macro

Standalone NVM Chip

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Other

Global eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing Market, Segmentation by Application:

Consumer & General AIoT Terminals

Industrial & Energy Control

Automotive Electronics

Medical & Life-Health Devices

Companies Profiled:

Beijing InnoMem Technologies Co., Ltd.

Hua Hong Semiconductor Limited

eMemory Technology Inc.

Taiwan Semiconductor Manufacturing Company Limited

United Microelectronics Corporation

Floadia Corporation

Samsung Electronics Co., Ltd.

Infineon Technologies AG

Tower Semiconductor Ltd.

Weebit Nano Ltd.

Avalanche Technology, Inc.

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CrossBar, Inc.

Everspin Technologies, Inc.

GlobalFoundries Inc.

Microchip Technology Incorporated

Numem

SkyWater Technology, Inc.

Texas Instruments Incorporated

Key Questions Answered:
1. How big is the global eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing market?
2. What is the demand of the global eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing market?
3. What is the year over year growth of the global eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing market?
4. What is the production and production value of the global eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing market?
5. Who are the key producers in the global eNVM (Emerging Non-Volatile Memories) for Neuromorphic Computing market?
6. What are the growth factors driving the market demand?

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