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Global RISC-V-based AI Accelerator SoC Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global RISC-V-based AI Accelerator SoC market size is expected to reach $ 3451 million by 2032, rising at a market growth of 30.5% CAGR during the forecast period (2026-2032).

A RISC-V-based AI Accelerator SoC refers to a system-on-chip, accelerator silicon, or heterogeneous processor that uses the RISC-V instruction set architecture as a general-purpose processing core, control core, vector processing element, matrix/tensor execution interface, or programmable scheduling engine, and integrates dedicated AI acceleration resources such as an NPU, CNN accelerator, KPU, DSP/VPU, vector extension, custom AI instruction extensions, on-chip SRAM, power-management logic, and high-speed on-chip interconnects. The product is designed to execute AI inference and related workloads locally across edge vision, audio intelligence, sensor fusion, robotics, automotive intelligence, telecom network intelligence, edge servers, and data-center inference. This study focuses on chip-level products and silicon platforms with explicit AI acceleration capability and a meaningful RISC-V architectural role.

Based on our research, the RISC-V-based AI Accelerator SoC market is still an emerging and heterogeneous segment rather than a mature single-product category. Its core value does not come from replacing all existing AI chips, but from enabling highly customized, energy-efficient, and workload-specific silicon designs where an open and extensible ISA matters. The product boundary should therefore be drawn narrowly around chip-level products that combine a meaningful RISC-V architectural role with explicit AI acceleration capability, such as a RISC-V CPU plus NPU SoC, a RISC-V AI MCU, a many-core RISC-V inference chip, a RISC-V AI CPU, or a RISC-V-controlled chiplet AI accelerator. This boundary is important because the broader ecosystem includes many RISC-V CPU IP vendors, development boards, modules, and Arm-based

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AI SoCs that are relevant to adoption but should not be counted as RISC-V AI Accelerator SoC revenue.

Demand in 2025 is still concentrated in low-power edge inference, AIoT, machine vision, hearables, embedded sensing, and small-scale engineering deployments. The 2026?2032 growth path depends on whether RISC-V-based AI chips can gain design wins in automotive AI, robotics, O-RAN, edge LLM devices, industrial intelligence, and power-efficient server inference. The addressable opportunity is real, but the adoption curve will be constrained by software maturity, model deployment tools, compiler quality, customer qualification cycles, and the ability to offer reliable reference designs. For this reason, the market should be forecast conservatively: RISC-V AI SoCs are likely to expand in specialized and power-sensitive applications first, rather than immediately displacing GPUs or mainstream Arm-based edge AI SoCs.

From a product roadmap and architecture perspective, RISC-V-based AI Accelerator SoCs are evolving from simple ?RISC-V CPU + lightweight CNN accelerator? designs toward more heterogeneous architectures that combine RISC-V control cores, vector extensions, tensor or matrix engines, dedicated NPUs, on-chip memory, and increasingly chiplet-based integration. Early commercial products were mainly optimized for low-power vision, audio, and AIoT inference, while newer platforms are expanding toward edge LLM inference, robotics, telecom AI, automotive intelligence, and data-center-class power-efficient acceleration. This evolution suggests that the industry?s competitive focus is shifting from basic RISC-V adoption to system-level AI performance, software toolchains, model deployment efficiency, memory bandwidth, and workload-specific customization. Companies with stronger compiler support, quantization tools, reference designs, and ecosystem partnerships are likely to gain a more durable position than vendors that only offer standalone silicon specifications.

This report studies the global RISC-V-based AI Accelerator SoC production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for RISC-V-based AI Accelerator SoC 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 RISC-V-based AI Accelerator SoC that contribute to its increasing demand across many markets.

Highlights and key features of the study

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Global RISC-V-based AI Accelerator SoC total production and demand, 2021-2032, (Million Units)
Global RISC-V-based AI Accelerator SoC total production value, 2021-2032, (USD Million)
Global RISC-V-based AI Accelerator SoC production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (Million Units), (based on production site)
Global RISC-V-based AI Accelerator SoC consumption by region & country, CAGR, 2021-2032 & (Million Units)
U.S. VS China: RISC-V-based AI Accelerator SoC domestic production, consumption, key domestic manufacturers and share
Global RISC-V-based AI Accelerator SoC production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (Million Units)
Global RISC-V-based AI Accelerator SoC production by Type, production, value, CAGR, 2021-2032, (USD Million) & (Million Units)
Global RISC-V-based AI Accelerator SoC production by Application, production, value, CAGR, 2021-2032, (USD Million) & (Million Units)

This report profiles key players in the global RISC-V-based AI Accelerator SoC 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 NXP Semiconductors N.V., Analog Devices, Inc., Alibaba Group Holding Limited, Tenstorrent Inc., Axelera AI B.V., Canaan Inc., Beijing ESWIN Computing Technology Co., Ltd., SOPHGO Technologies Ltd., EdgeQ Inc., SpacemiT Hangzhou Technology Co., 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 RISC-V-based AI Accelerator SoC 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.

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Global RISC-V-based AI Accelerator SoC Market, By Region:

United States

China

Europe

Japan

South Korea

ASEAN

India

Rest of World

Global RISC-V-based AI Accelerator SoC Market, Segmentation by Type:

RISC-V Edge AI SoC

RISC-V Application AI SoC

Other

Global RISC-V-based AI Accelerator SoC Market, Segmentation by Performance Class:

Ultra-low Performance Class

Low Performance Class

Mid Performance Class

High Performance Class

Very High Performance Class

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Global RISC-V-based AI Accelerator SoC Market, Segmentation by Numeric Precision:

INT8 Precision

INT4 / Sub-8-bit Precision

FP16 / BF16 Precision

FP8 Precision

Other

Global RISC-V-based AI Accelerator SoC Market, Segmentation by Compute Architecture:

RISC-V Vector Architecture

RISC-V Tensor / Matrix Architecture

Other

Global RISC-V-based AI Accelerator SoC Market, Segmentation by Application:

Consumer Electronics

Smart Home

Industrial Automation

Healthcare Devices

Energy & Utilities

Data Center & Edge Server

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Other

Companies Profiled:

NXP Semiconductors N.V.

Analog Devices, Inc.

Alibaba Group Holding Limited

Tenstorrent Inc.

Axelera AI B.V.

Canaan Inc.

Beijing ESWIN Computing Technology Co., Ltd.

SOPHGO Technologies Ltd.

EdgeQ Inc.

SpacemiT Hangzhou Technology Co., Ltd.

GreenWaves Technologies

Suzhou China Core Microelectronics Co., Ltd.

BOS Semiconductors Co., Ltd.

Esperanto Technologies, Inc.

Kneron, Inc.

Key Questions Answered:
1. How big is the global RISC-V-based AI Accelerator SoC market?
2. What is the demand of the global RISC-V-based AI Accelerator SoC market?

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3. What is the year over year growth of the global RISC-V-based AI Accelerator SoC market?
4. What is the production and production value of the global RISC-V-based AI Accelerator SoC market?
5. Who are the key producers in the global RISC-V-based AI Accelerator SoC market?
6. What are the growth factors driving the market demand?

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