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Global Application-Specific AI Chip Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global Application-Specific AI Chip market size is expected to reach $ 32170 million by 2032, rising at a market growth of 9.8% CAGR during the forecast period (2026-2032).

In 2025, global Application-Specific AI Chip production reached approximately 11 m units, the average price is 1500 usd/unit. Application-Specific AI Chip is hardware devices specifically designed to perform specific types of AI tasks. Unlike general-purpose AI processors, special-purpose AI chips focus on optimizing one or more types of AI algorithms and applications, such as convolutional neural networks for image processing in deep learning, recurrent neural networks for sequential data such as speech and text processing, etc.

Market Concentration and Key Players:

Internationally, the market concentration of dedicated AI chips is not high, among which, chip enterprises represented by China in Asia are developing in this field with the power and speed of a new star. Europe and the United States, especially chip leading enterprises NVIDIA, Intel and so on can not be underestimated, in general, the development prospects of dedicated AI chips are broad.

Manufacturing Processes and Market Trends:

The manufacturing process of dedicated AI chips is the result of the deep integration of semiconductor technology and artificial intelligence requirements. Such chips need to find the right balance between computational performance, power efficiency, and flexibility to adapt to specific AI tasks, such as training and reasoning. Advanced

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process nodes, such as 7 nm or smaller size technology, are used in the manufacturing process, which helps increase transistor density and reduce power consumption. For AI chips, in addition to traditional CMOS (Complementary Metal Oxide Semiconductor) technology, customized architecture design is also involved, such as tensor processing units (TPU), neural network processors (NPU), etc. These customized architectures are optimized for deep learning algorithms and can significantly improve data processing speed. In addition, to cope with the increasing volume and complexity of data, 3D stacking technology and high-bandwidth memory (HBM) are also widely used to achieve higher storage capacity and faster data transfer rates. In terms of packaging, Chiplet technology allows multiple chiplets to be integrated into a single package, further enhancing the integration and functionality of the system. Throughout the manufacturing process, testing is critical to ensure that each AI chip that leaves the factory can operate stably and meet stringent application requirements.

As global investment in artificial intelligence technology continues to increase, the dedicated AI chip market is showing a rapid development trend. Currently, the market is undergoing a transition from general purpose computing platforms to specialized accelerators, especially in cloud and edge computing environments. Enterprises have a strong demand for high-performance, low-latency AI processing power, which drives the development of dedicated AI chips. The sector is expected to continue its strong growth momentum in the coming years. On the one hand, the popularity of 5G networks has brought massive data streams to Internet of Things devices, stimulating the demand for edge-side AI chips; on the other hand, emerging application scenarios such as autonomous vehicles, smart homes and intelligent medical care have also become important driving forces. Meanwhile, China's government has introduced a series of supportive policies to encourage domestic enterprises to make breakthroughs in key technologies and narrow the gap with international leading levels. In addition, RISC-V open source instruction set architecture is gradually gaining favor in AI chip design due to its flexibility and low cost advantages, which promotes the development of local industry chain. In general, dedicated AI chips will not only occupy an important position in the data center, but also penetrate into the terminal products of various industries and become the key drivers of intelligent transformation.

This report studies the global Application-Specific AI Chip production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for Application-Specific AI Chip and provides market size (US$ million) and Year-over-Year (YoY) Growth, considering 2025 as the base year. This report explores demand trends and

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competition, as well as details the characteristics of Application-Specific AI Chip that contribute to its increasing demand across many markets.

Highlights and key features of the study

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

This report profiles key players in the global Application-Specific AI Chip 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 NVIDIA, Zhongke Yusur (Beijing), MediaTek, ZTE, Intel, Broadcom, Marvell, Meso-micro Semiconductor, AMD, Cambricon, 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 Application-Specific AI Chip 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 Strutrue, 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 Application-Specific AI Chip Market, By Region:

United States

China

Europe

Japan

South Korea

ASEAN

India

Rest of World

Global Application-Specific AI Chip Market, Segmentation by Strutrue:

VPU

TPU

NPU

DPU

Global Application-Specific AI Chip Market, Segmentation by Precision:

High Precision

Low Precision

Mixed Precision

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Global Application-Specific AI Chip Market, Segmentation by End Use:

Data Center AI ASIC

Edge AI ASIC

On-device AI

Global Application-Specific AI Chip Market, Segmentation by Application:

AI Data Center

Edge Computing

Consumer Electronics

IOT

Autonomous Driving

Others

Companies Profiled:

NVIDIA

Zhongke Yusur (Beijing)

MediaTek

ZTE

Intel

Broadcom

Marvell

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Meso-micro Semiconductor

AMD

Cambricon

Shanghai Yunsilicon

NETINT Technologie(Shanghai)

Beijing Emergetech

Shenzhen Yunbao Intelligent

Resnics Technology (Shanghai)

Xinqiyuan Electronic Technology

Beijing Dayu Zhixin Technology

Allwinner Technology

Shenzhen Yuntian Lifei Technology

Kalray

Aojie Technology

Zhonghao Xinying (Hangzhou) Technology

Chengdu Beizhong Wangxin Technology

Ruixin Microelectronics

Ruichuang Weina

Shanghai Fullhan Microelectronics

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Xinrun Technology

Key Questions Answered:

1. How big is the global Application-Specific AI Chip market?
2. What is the demand of the global Application-Specific AI Chip market?
3. What is the year over year growth of the global Application-Specific AI Chip market?
4. What is the production and production value of the global Application-Specific AI Chip market?
5. Who are the key producers in the global Application-Specific AI Chip market?
6. What are the growth factors driving the market demand?

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