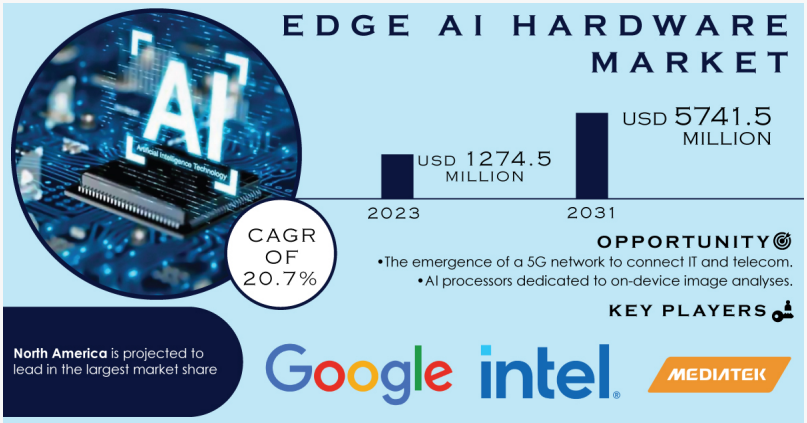
Edge AI Hardware Market to Cross USD 5741.5 Million 20.7% CAGR by 2031 Due to Rising Growth of IoT Devices

Edge AI Hardware Market Size, Share, Growth Drivers and Regional Analysis, Global Forecast 2024 - 2031



Edge AI Hardware Market Size and Growth Report

AUSTIN, TEXAS, UNITED STATES, June 11, 2024 /EINPresswire.com/ -- Edge AI Hardware Market Size

The SNS Insider report forecasts the Edge AI Hardware Market to surge from USD 1274.5 Million in 2023 to USD 5741.5 Million by 2031, reflecting a robust Compound Annual Growth Rate (CAGR) of 20.7% over the forecast period 2024-2031. The burgeoning growth of Internet of Things (IoT) devices across various industries is Drive the expansion of the Edge AI Hardware Market, states the SNS Insider report. This decentralized approach to processing empowers devices to analyse and interpret data locally, minimizing Dependence on centralized cloud computing.

Growing Demand for Real-Time Processing at the Edge

The report attributes this market expansion to several key factors. The exponential growth of IoT devices across smart homes, industrial automation, healthcare, agriculture, and transportation is a significant driver. Edge AI empowers these devices to process data locally, enabling real-time decision-making and reducing dependence on cloud computing. Edge AI hardware facilitates data processing at the network's edge, significantly reducing the time it takes for critical decisions to be made. This is Important for mission-critical applications such as autonomous vehicles, industrial automation, and healthcare monitoring, where real-time data processing with minimal latency is paramount.

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KEY PLAYERS:
- Google
- Intel Corporation
- MediaTek
- NVIDIA Corporation
- Samsung Electronics
- Apple
- Huawei Technologies
- International Business Machines Corporation
- Microsoft Corporation
- Qualcomm Technologies

Edge AI hardware fosters more reliable and resilient mission-critical systems by minimizing dependence on cloud connectivity. Local processing ensures application functionality even during network disruptions. By filtering and processing data locally, edge AI hardware reduces the volume of data transmitted over the network, minimizing congestion and optimizing bandwidth utilization – particularly beneficial in scenarios with continuous generation of large data volumes. Generative AI excels in tasks such as creating realistic images, music, or text formats based on existing data. Edge AI hardware empowers devices to analyse and interpret data at the source, complementing generative AI by providing the processing power required for real-time applications.

Recent Developments

• April 2024, Apple reportedly plans to revolutionize its Mac lineup with the M4 series processors featuring cutting-edge AI processing capabilities, aiming to equip every Mac model with this advanced technology. (Source: Bloomberg)
• January 2024, IBM announced a collaboration with Korea Quantum Computing (KQC) to offer its most advanced AI software, infrastructure, and quantum computing services. This empowers KQC's users with access to IBM's full-stack AI solutions, including Watsonx – an AI and data platform for training, refining, and deploying advanced AI models for enterprises.
• August 2022, Stanford University engineers unveiled NeuRRAM, a novel resistive random-access memory (RRAM) chip designed for efficient and flexible AI processing in tiny edge devices. This innovation holds immense potential for powering AI in resource-constrained environments.

KEY MARKET SEGMENTS:

BY DEVICE
• Smartphones
• Surveillance cameras
• Smart speakers
• Edge servers

- Robots
- Wearables
- Automotive
- Smart mirrors

by Device, the smartphone segment holds the largest market share due to the early integration of AI chips or processors. These advanced technologies facilitate image recognition, real-time Edge AI Hardware, and the addition of AI and edge computing further enhances their capabilities.

BY END USER
- Smart home
- Automotive & transportation
- Industrial
- Healthcare
- Consumer electronics
- Aerospace & defense
- Government
- Construction

by End User, the consumer electronics industry leads the market in terms of volume, driven by rising consumer spending and demand for feature-rich electronics. The emergence of novel use cases for edge AI is expected to propel further growth within this segment.

Impact of Global Disruptions

Russia-Ukraine War has disrupted global supply chains for electronic components, potentially hindering the production of edge AI hardware. However, the war has also heightened the need for advanced technologies in areas such as security and remote monitoring, which could create new market opportunities. An economic slowdown Result to Slow down consumer spending on electronics, impacting the market's growth in the short term. long-term prospects remain positive, as businesses are increasingly recognizing the value proposition of edge AI for optimizing operations and enhancing efficiency.

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Regional Dominance

North America is projected to hold the largest market share for edge AI hardware throughout the forecast period. This dominance is driven by
- The region experiences a strong demand for faster device processing due to factors like network congestion and latency concerns.
- The United States and Canada are at the forefront of integrating edge AI technologies into

various applications.
• The widespread adoption of IoT devices across diverse industries fuels the need for edge AI hardware to process data locally.
• Government funding initiatives and a strong technological foundation further bolster market growth in this region.

The Asia-Pacific region is anticipated to witness the highest Compound Annual Growth Rate (CAGR) within the Edge AI Hardware Market. This rapid growth can be driven by, The presence of leading semiconductor manufacturers and exporters in the region creates a strong foundation for market expansion. Many Asian governments are actively promoting AI development and adoption, Drive the demand for edge AI hardware. The region is experiencing significant advancements in AI research and development, driving the need for edge AI solutions. For Example, China's ambitious "Smart City" initiative exemplifies the growth potential of the Edge AI Hardware Market in the Asia-Pacific region. This initiative involves integrating various technologies, including edge AI, to enhance urban infrastructure and services. Edge AI hardware empowers real-time traffic management, intelligent energy grids, and improved public safety – all requiring decentralized data processing at the edge.

Key Takeaways for the Edge AI Hardware Market

• The report highlights the burgeoning demand for edge AI hardware Driven by the rise of IoT devices across various industries.
• Edge AI empowers these devices with local data processing capabilities, minimizing reliance on centralized cloud computing and enabling real-time decision-making.
• The report identifies several factors propelling the Edge AI Hardware Market forward. These include reduced latency for mission-critical applications, enhanced reliability of systems, optimized network bandwidth utilization, and synergy with generative AI for real-time processing.
• The report acknowledges both opportunities and challenges within the market. While disruptions such as the Russia-Ukraine War Creates supply chain concerns, they also create demand for advanced technologies.

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