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Edge AI Hardware Market

Global Edge AI Hardware Market, By Device (Smartphones, Cameras, Robots, Wearables, Smart Speaker, Other Devices), By Processor (CPU, GPU, FPGA, ASIC), By End Use (Consumer Electronics, Real Estate, Automotive, Transportation, Healthcare, Manufacturing, Others), and Region - COVID-19 Impact Analysis and Forecast to 2026

This market research report provides in-depth information on trends, dynamics, revenue opportunities, competitive landscape, and recent developments in the global Edge AI Hardware market. The historic years considered for the study are 2016-2019, base year is 2021, estimated year is 2024, and forecast period is 2024-2026.

The Global Edge AI Hardware Market is projected to grow from USD XX million in 2021 to USD XX million by 2026 at a CAGR of over XX % during the forecast period.

Figure: Global Edge AI Hardware Market Size, 2020-2026 (USD Million)
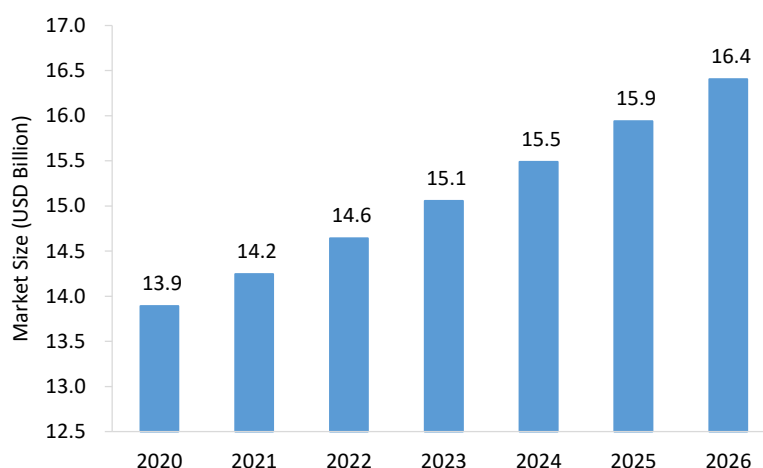
Edge AI hardware, often referred to as AI accelerators are used to accelerate deep learning inference on edge devices, making them a viable solution many computation-intensive applications. The edge AI platform can run on a wide range of hardware platforms, from normal MCUs to advanced neural processors. The main devices of edge AI hardware are smartphones, cameras, robots, wearable, smart speakers, and others. A smartphone refers to a handheld electronic device that is connected to a cellular network. Its component includes processor, memory, sensors and others, which are employed by various end users including consumer electronics, smart home, automotive, government, aerospace and defence, healthcare, industrial, construction and others.

Key players operating in the global Edge AI Hardware market are Apple Inc., Google LLC (Alphabet Inc.), Huawei Technologies Co. Ltd., Intel Corporation, International Business Machines Corporation (IBM), MediaTek Inc., Microsoft Corporation, NVIDIA Corporation, Qualcomm Technologies Inc., and Samsung Electronics Co. Ltd. (Samsung).

Market Dynamics

One of the key growth factors for edge AI hardware market is exponential development of IoT devices. With the production of connected devices, there is a huge invasion of data produced at the edge. Edge AI hardware allows efficient processing and analysis of this data locally, dropping dormancy and bandwidth necessities. This is mainly vital for application that require real time responses, such as autonomous vehicles, manufacturing automation, and smart cities. However, the edge AI hardware market also faces certain challenges. One of the key challenges is the limited

computational power and energy restrictions of edge devices. AI procedure typically require considerable processing power, which can be a challenge to implement on resource-constrained devices. Hardware manufacturer needs to advance energy-efficient and compact solutions to overcome this restriction. Additionally, the constant development in AI chip design and manufacturing skills present opportunities for revolution and performance development in edge AI hardware. Corporations are participating in developing dedicated AI chips, such as neural processing units (NPUs) and field-programmable gate arrays (FPGAs), to improve AI computations and quicken inferencing at the edge.

Industry Vertical Trends

There is a rising trend towards emerging energy-efficient AI chips that lessen power consumption while keeping high performance. These chips are mainly crucial for battery-operated edge devices, allowing longer working times without frequent recharges. Additionally, the development of 5G network globally support advanced data transfer rates and lower latency, making it easier to organize more complex AI applications on edge devices. This trend is vital for real-time analytics and improved connectivity.

Regional Trends

By region, the market for Edge AI hardware was dominated by North America. The strong network of tech giants like Intel, NVIDIA and Qualcomm, which are at the top of AI hardware innovation, significantly influence to North America market dominance. Moreover, North America's importance on enhancing industrial automation, smart cities, and autonomous vehicles has driven the demand for edge AI hardware.
Additionally, the U.S. government has launched numerous initiatives to stimulate AI research, safeguarding the area remains competitive in the global AI landscape. These tactics not only foster revolution but also fascinate funding from both local and global stakeholders, further coagulating North America's leading position in the edge AI hardware market.

COVID-19 Impact on Global Edge AI Hardware Market

The ongoing spread of COVID-19 has become one of the biggest threats to the global economy and is causing widespread concerns and economic hardship for consumers, businesses, and communities across the globe. The "new normal" that includes social distancing and working from home has created challenges with daily activities, regular work, needs, and supplies, causing delayed initiatives and missed opportunities. The COVID-19 pandemic is impacting the society and overall economy across the globe. The impact of this outbreak is on an increase and is affecting the supply chain. This creates uncertainty in the stock market, decreases business confidence, slows supply chain, and increases panic among customers.

Segmentation

- By Device
  - Smartphones
  - Cameras
  - Robots
  - Wearables
  - Smart Speaker
  - Other Devices

- By Processor
  - CPU
  - GPU
  - FPGA
  - ASIC

- By End-use
  - Consumer Electronics
  - Real Estate
  - Automotive
  - Transportation
  - Healthcare
  - Manufacturing
  - Others

Critical Questions Answered in the Report

- What are the key trends in the global Edge AI Hardware market?
- How the market (and its various sub-segments) has grown in the last five years and what would be the growth rate in next five years?
- What is the impact of COVID-19 on global Edge AI Hardware market?
- What are the key strategies adopted by the major vendors to lead in the global Edge AI Hardware market?
- What is the market share of the top vendors?

Target Audience

- Edge AI Hardware companies
- Edge AI Hardware vendors
- Government bodies

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