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Global 48V AI Server Fan Driver Chip Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global 48V AI Server Fan Driver Chip market size is expected to reach $ million by 2032, rising at a market growth of %CAGR during the forecast period (2026-2032).
The 48V AI server fan driver chip is a semiconductor integrated circuit specifically designed for controlling high-voltage fan motors inside AI servers. This chip can drive brushless DC fans or three-phase fan motors under a 48V power supply architecture, achieving efficient heat dissipation. Due to the rapid increase in computing power and power consumption of AI servers, the requirements for heat dissipation performance have significantly increased, thus the demand for 48V fan drive solutions continues to grow. In 2024, global sales of such chips were approximately 18 million units, with an average unit price of approximately $20 and a single-line monthly production capacity of approximately 200,000 units. In terms of upstream and downstream companies, the upstream mainly belongs to the semiconductor design and manufacturing field, including dedicated control IP designers, wafer foundries and packaging and testing service providers, and power semiconductor and power management chip manufacturers; the downstream mainly consists of AI server manufacturers, large data center operators, and heat dissipation system integrators. Gross profit margins are typically between 35% and 45%. The product cost structure mainly consists of wafer manufacturing costs, packaging and testing costs, power device and passive component costs, and R&D and design investment. Products can be categorized by parameters into types with varying voltage adaptability, such as those supporting only 48V input and those supporting higher voltage withstand and stronger overvoltage protection. They can also be categorized by control algorithm, such as sensorless FOC control, square wave control, and highly integrated DC-DC converters. On the demand side, downstream needs include high-efficiency temperature-controlled fan drivers, adjustable speed control, high-reliability protection functions, low electromagnetic interference design, and interfaces compatible with various fan topologies. Downstream

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customers include hyperscale cloud service providers, enterprise-level AI server manufacturers, data center operation and maintenance service providers, and high-performance computing platform integrators. In terms of business opportunities, policy drivers include countries promoting data center energy efficiency standards and green computing infrastructure upgrades; technological innovation drivers include more efficient control algorithms, more integrated power management, and more intelligent fault diagnosis functions; and changing consumer demands reflect customers' continued pursuit of solutions with higher heat dissipation efficiency, lower energy consumption, and longer lifecycles. These factors collectively drive the growth potential of 48V AI server fan driver chips.

This report studies the global 48V AI Server Fan Driver Chip production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for 48V AI Server Fan Driver 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 competition, as well as details the characteristics of 48V AI Server Fan Driver Chip that contribute to its increasing demand across many markets.

Highlights and key features of the study

Global 48V AI Server Fan Driver Chip total production and demand, 2021-2032, (K Units)

Global 48V AI Server Fan Driver Chip total production value, 2021-2032, (USD Million)

Global 48V AI Server Fan Driver Chip production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (K Units), (based on production site)

Global 48V AI Server Fan Driver Chip consumption by region & country, CAGR, 2021-2032 & (K Units)

U.S. VS China: 48V AI Server Fan Driver Chip domestic production, consumption, key domestic manufacturers and share

Global 48V AI Server Fan Driver Chip production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (K Units)

Global 48V AI Server Fan Driver Chip production by Type, production, value, CAGR, 2021-2032, (USD Million) & (K Units)

Global 48V AI Server Fan Driver Chip production by Application, production, value, CAGR, 2021-2032, (USD Million) & (K Units)

This report profiles key players in the global 48V AI Server Fan Driver 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 Nuvoton, Melexis, Microchip, RICHTEK, Silergy Technology, Shanghai Bright Power Semiconductor, Halo Microelectronics, Fortior Technology (Shenzhen), etc.

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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 48V AI Server Fan Driver Chip market
Detailed Segmentation:
Each section contains quantitative market data including market by value (US$ Millions), volume (production, consumption) & (K 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 48V AI Server Fan Driver Chip Market, By Region:

United States

China

Europe

Japan

South Korea

ASEAN

India

Rest of World

Global 48V AI Server Fan Driver Chip Market, Segmentation by Type:

Single Phase Driver Chip

Three Phase Driver Chip

Global 48V AI Server Fan Driver Chip Market, Segmentation by Maximum Voltage:

HQFN-32 Package

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QFN Package

Other

Global 48V AI Server Fan Driver Chip Market, Segmentation by LDO:

Supports LDO

Does Not Support LDO

Global 48V AI Server Fan Driver Chip Market, Segmentation by Application:

GPU Server

TPU Server

ASIC Server

Others

Companies Profiled:

Nuvoton

Melexis

Microchip

RICHTEK

Silergy Technology

Shanghai Bright Power Semiconductor

Halo Microelectronics

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Fortior Technology (Shenzhen)

Key Questions Answered:

1. How big is the global 48V AI Server Fan Driver Chip market?
2. What is the demand of the global 48V AI Server Fan Driver Chip market?
3. What is the year over year growth of the global 48V AI Server Fan Driver Chip market?
4. What is the production and production value of the global 48V AI Server Fan Driver Chip market?
5. Who are the key producers in the global 48V AI Server Fan Driver Chip market?
6. What are the growth factors driving the market demand?

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