

Latest AI Server Power Supply



Overview

In collaboration with NVIDIA, Infineon will develop the next generation of power systems based on a new architecture with centralized power generation through 800V high-voltage direct current (HVDC). The IEA's latest report, Key Questions on Energy and AI (April 2026), puts the updated trajectory plainly: consumption will roughly double and reach almost 500 TWh in 2025 to 950 TWh by 2030, with AI-specific infrastructure tripling over the same period. We'll discuss state-of-the-art topologies and concepts, leveraging Silicon, Gallium Nitride (GaN), and Silicon Carbide (SiC) to achieve higher. This blog post explores innovations in power devices, gate drivers and advanced controllers with Digital Signal Processing (DSP) capabilities to meet Artificial Intelligence (AI) servers' power and efficiency needs. The rise of artificial intelligence (AI) has significantly increased computing. The rapid scaling of artificial intelligence (AI) servers and hyperscale data centers is driving new requirements for high efficiency, high density power supply unit (PSU) architectures. AI workloads demand precise power delivery, fast transient response, and robust isolation to support GPUs. Texas Instruments (TI) today debuted new design resources and power-management chips to help companies meet growing artificial intelligence (AI) computing demands and scale power-management architectures from 12V to 48V to 800 VDC.

Article Content

2025 OCP Summit Highlights Data Center Efficiency

Ray Wang, Research Director for Semiconductors, Supply Chain, and Emerging Technology at Futurum, shares his insights and observations during

Meeting the Demanding Energy Needs of AI Servers with Advanced ...

Explore how innovations in power devices, gate drivers, and DSP-based controllers tackle AI servers' high energy demands, optimizing efficiency in data centers.

MX Stock Heads For 29-Month Highs — What's The AI Server

Magnachip stated that it will showcase Medium-Voltage MOSFET solutions designed for server and data center power supply units, high-performance computing applications, and industrial

NVIDIA Vera Rubin Ramps Into Full Production to Power Agentic AI ...

NVIDIA GTC Taipei— NVIDIA today announced the NVIDIA Vera Rubin platform is ramping into full production to power agentic AI factories worldwide. Taiwan's top server makers and

Optimizing AI power supply units | Infineon Technologies

Optimize AI server power supply design with the latest PSU topologies across Si, GaN, and SiC for maximum efficiency and power density.

AI Server Demand to Drive Memory Contract Price Increases in 2Q26

TrendForce's latest memory pricing survey reveals that DRAM suppliers are reallocating capacity toward HBM and server applications in 2Q26, while implementing catch-up pricing to narrow

Infineon: Power supply for artificial intelligence with state-of-the ...

The BBU roadmap includes power supply solutions ranging from 4 kW to the world's first 12 kW battery backup system. The power solutions are designed to enable highly efficient, reliable and scalable

AI data center growth: Meeting the demand | McKinsey

But even if all currently known plans are delivered on time, there could still be a data center supply deficit of more than 15 GW in the United States

2026 AI & Semiconductor Outlook: Memory, Power, Packaging Trends ...

Explore the 2026 AI and semiconductor outlook, covering HBM memory, AI servers, power architectures, advanced packaging, and supply chain shifts.

Microsoft Unveils Agentic AI Push Across D365, Power Platform and

Microsoft's 2026 Release Wave 1 introduces deeper Copilot integration, expanded agentic AI experiences, and new governance and automation capabilities across Dynamics 365, Power

Gartner Business Insights, Strategies & Trends For Executives

Gain strategic business insights on cross-functional topics, and learn how to apply them to your function and role to drive stronger performance and innovation.

Global AI Optical Transceiver Market to Reach US\$26 Billion in 2026 ...

TrendForce's latest research indicates that the global market for AI-focused optical transceivers has entered a phase of rapid growth, with market size projected to expand from

AI server boom drives MLCC prices higher as Murata, Samsung split ...

AI server boom drives MLCC prices higher as Murata, Samsung split market Tight supply of high-grade MLCCs for power-hungry AI servers lifts prices as

Scaling AI Data Center Power Delivery with Si, SiC, and GaN

These PSU reference designs represent a clear upgrade path from 3 kW and 3.3 kW to next-generation 8- and 12-kW designs, supporting both greenfield deployments and the replacement of legacy AI

Energy and AI - Analysis

The development and uptake of artificial intelligence (AI) has accelerated in recent years - elevating the question of what widespread deployment of the technology will mean for the energy

Data centre electricity use surged in 2025, even with tightening ...

As a result, electricity consumption from data centres is set to double by 2030, and power use from those focused on AI is poised to triple. At the same time, AI deployment is increasingly

TI's new power-management solutions enable scalable AI infrastructures

Texas Instruments (TI) today debuted new design resources and power-management chips to help companies meet growing artificial intelligence (AI) computing demands and scale power

Dynamics 365 Blog | Modernizing Business with Cloud

Explore new AI innovation for Dynamics 365, Microsoft Power Platform, and Copilot Studio at the Business Applications Launch Event Get a first look at

The AI frenzy is driving a memory chip supply crisis

An acute global shortage of memory chips is forcing artificial intelligence and consumer-electronics companies to fight for dwindling supplies,

AI Power Consumption and Data Centres: IEA 2026 Key Numbers

What does the IEA's latest report say about AI energy consumption and demand? Breakdown of the latest findings on consumption, cooling, and server utilisation.

Meta stock pops on cloud push to sell excess AI compute power

Model developers, including Meta, have been racing to secure computing power since OpenAI kickstarted the AI boom with the launch of its ChatGPT chatbot in 2022, and demand far

Global AI High Power Server Power Supply Market 2026

Between 2024 and 2026, strategic momentum in AI high power server power supplies increasingly centered on enabling higher power density and better thermal/electrical performance for

Infineon: Architecture for power supply in AI servers of the future ...

In collaboration with NVIDIA, Infineon will develop the next generation of power systems based on a new architecture with centralized power generation through 800V high-voltage direct current (HVDC).

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Trends in AI Server Power Supply Architectures

This document explores the AI server PSU application landscape and highlights how Skyworks Solutions is expanding its solutions to address critical power management challenges, including

Top Strategic Technology Trends for 2026 | Gartner

Explore Gartner's Top Strategic Technology Trends for 2026 — 10 trends that will shape innovation, resilience and trust across industries. Learn how CIOs can lead with confidence in an AI-powered world.

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