

Intelligent Integrated Power Supply Specifications and Models



AI Overview

Intelligent Integrated Power Supplies (IIPS) combine digital control with high-efficiency power conversion, offering programmable, flexible, and high-density solutions for applications from consumer electronics to AI data centers. Overview of Intelligent Power Supplies An Intelligent Power Supply integrates a microcontroller (MCU) or Digital Signal Controller (DSC) to provide programmable control, adaptive regulation, and protection functions. Unlike traditional analog power supplies, IIPS can dynamically adjust output voltage, switching frequency, and control loop parameters to optimize efficiency under varying loads. Auxiliary functions such as fan control, data logging, and system monitoring are also integrated, making the power supply a versatile platform for multiple applications (Microchip). Key Specifications and Features Power Ratings: IIPS solutions range from tens of watts to multiple kilowatts, with high-power modules supporting up to 12 kW for AI data centers and server applications (Infineon). Efficiency: Advanced designs achieve >97% efficiency, leveraging hybrid technologies including Si, SiC, and GaN devices for optimized switching and thermal performance (Infineon). Topologies: Common architectures include two-stage designs with 3-level flying capacitor PFC and full-bridge LLC converters, as well as inverter IPMs and 2-in-1 PFC IPMs for industrial and automotive applications (Infineon, onsemi). Voltage and Current Ratings: Intelligent Power Modules (IPMs) cover 650–1200 V with SiC or IGBT and diode switches, supporting motor drives from a few watts up to 7 kW or higher (STMicroelectronics). Integration: IPMs combine gate drivers and power switching sections in a single package, reducing board space and simplifying design. Compact modules like SLLIMM and ACEPACK offer high power density and reduced time to market (STMicroelectronics)...

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[Intelligent Power Series Power Supplies](#)

Intelligent 56VDC / 100W Power Solution with network monitoring, controls, and cross platform integration. Available in 16 & 32 port units

[Intelligent integrated power supply Shanghai Xishun Electrics Co., Ltd](#)

XS-PLC Intelligent Integrated Power Supply is an integrated power supply system composed of UPS, voltage stabilized power supply, isolation, ATS automatic switching, lightning protection, distribution,

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Cisco 8500 Series Secure Routers offer simplified secure networking with QFP ASIC, SD-WAN, robust security, and flexible management to enable

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Advanced Energy (AE) has devoted more than four decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion,

[Intelligent Power Supply Design Solutions Brochure](#)

The intelligent power supply integrates a microcontroller (MCU) or Digital Signal Controller (DSC) for a fully programmable and flexible solution. Below are some examples of intelligent power supply

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[AI PSU | Infineon Technologies](#)

Infineon explores the latest advancements in AI server power supplies, addressing the challenges driven by increasing power demands and the evolution of AI server rack architectures.

[Scaling AI Data Center Power Delivery with Si, SiC, and GaN](#)

To understand where each technology fits into the present and future landscape of AI power delivery, we'll take a closer look at how Infineon's power-supply designs have evolved to address the ever

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Intelligent Power Module (IPM) Devices

ST's power modules help you simplify designs and reduce component count. Save costs with ST's intelligent power modules (IPMs) for flexible and robust designs,

Intelligent Power Modules (IPMs): Concepts, Features,

Form Factor Intelligent power modules tend to come in through-hole packages that I would describe as somewhat nonstandard. Here are some

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IntelliCharge Series

The ICT IntelliCharge Series is a high efficiency DC power supply with integrated battery charger that allows the battery charge to be regulated independently from

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Intelligent Substation Integrated Power Supply Research

This paper addresses the problems of low operation efficiency, high human resource consumption and insufficient safety guarantee of the traditional power supply system, and proposes a solution for the

Intelligent Power Supply Design Solutions

Traditional power supply designs use analog ICs with fixed functionality to provide regulated power. The intelligent power supply integrates a microcontroller (MCU) or Digital Signal Controller (DSC) for a

Intelligent Power Supply Design Solutions Brochure

Today, power supply designers must create power conversion products that offer greater efficiency, higher power density, higher reliability, advanced communications and sophisticated control features.

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