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Bench Power Supply Market Forecasts to 2030 – Global Analysis By Type (Linear Power Supply, Switching Power Supply, Programmable Power Supply, Multi-Output Power Supply and Other Types), Output Type, Current Type, Application, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Bench Power Supply Market is accounted for $667.82 million in 2024 and is expected to reach $1028.16 million by 2030 growing at a CAGR of 8.2% during the forecast period. A bench power supply is a versatile, adjustable power source used in electronics testing, prototyping, and circuit development. It provides precise voltage and current control, enabling engineers, technicians, and hobbyists to power and test electronic components safely. Typically featuring multiple output channels, overcurrent protection, and digital or analog displays, bench power supplies allow users to set desired voltage and current limits.

According to GSMA, the global number of Internet of Things (IoT) connections is projected to steadily increase, with consumer IoT connections expected to reach approximately 14 billion by 2030.

Market Dynamics:

Driver:

Growing emphasis on electronics training

As educational institutions expand STEM programs, there is a rising need for hands-on

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learning tools, including bench power supplies for circuit design, testing, and prototyping. Governments and industries are investing in technical education, fostering skilled professionals for the electronics sector. Additionally, online and remote learning programs require compact and user-friendly power supplies for home labs. This surge in electronics education increases the demand for reliable power sources, propelling market growth across academic and research sectors.

Restraint:

Energy efficiency concerns

Energy efficiency concerns in bench power supplies arise due to power losses, heat dissipation, and high energy consumption, especially in high-power applications. Inefficient power supplies generate excess heat, requiring additional cooling solutions, increasing operational costs. Regulatory bodies impose strict energy efficiency standards, pressuring manufacturers to develop more efficient designs, which can raise production costs. Therefore, these concerns hamper growth by increasing compliance costs, limiting adoption in energy-conscious sectors

Opportunity:

Growth in smart devices and IoT applications

The rise of smart devices and IoT applications drives demand for bench power supplies as engineers and researchers require precise power sources for testing and development. IoT devices, including wearables, smart home systems, and industrial sensors, need rigorous testing under controlled conditions to ensure efficiency, reliability, and low power consumption. As IoT adoption expands in healthcare, automation, and smart cities, manufacturers rely on bench power supplies for prototype validation, troubleshooting, and performance optimization which increases the complexity of circuits, further boosting the need for accurate and adjustable power solutions.

Threat:

High initial costs

The high initial cost of bench power supplies stems from advanced features, including precision voltage/current control, multiple output channels, digital interfaces, and safety

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protections. High-quality components, strict calibration standards, and R&D investments further increase manufacturing costs. This hampers market growth as small businesses, startups, and educational institutions may struggle with affordability, opting for cheaper alternatives like battery-powered or basic power sources.

Covid-19 Impact:

The covid-19 pandemic disrupted the bench power supply market through supply chain interruptions, factory shutdowns, and component shortages, leading to production delays and increased costs. However, demand surged in sectors like medical device manufacturing, remote learning, and R&D as labs and educational institutions adapted to virtual environments. The shift toward automation and IoT further supported market resilience. Post-pandemic recovery, along with renewed investments in electronics and semiconductor industries, is driving steady growth in the market.

The testing & measurement segment is expected to be the largest during the forecast period

The testing & measurement segment is expected to account for the largest market share during the forecast period. A bench power supply is an essential tool in testing and measurement applications, providing stable and adjustable voltage and current for circuit development, troubleshooting, and validation. It ensures precise power delivery for testing electronic components, prototypes, and devices under controlled conditions. Widely used in R&D, laboratories, and manufacturing, a bench power supply enhances accuracy, reliability, and efficiency in electrical and electronic testing processes.

The electronics & semiconductors segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the electronics & semiconductors segment is predicted to witness the highest growth rate. A bench power supply is an essential tool in electronics and semiconductor applications, providing precise and adjustable DC voltage and current for circuit testing, prototyping, and troubleshooting. It ensures stable and noise-free power, crucial for evaluating semiconductor components like transistors, ICs, and microcontrollers. It plays a vital role in ensuring accurate, reliable performance in electronic design and semiconductor testing.

Region with largest share:

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During the forecast period, the Asia Pacific region is expected to hold the largest market share, driven by rapid industrialization, increasing electronics manufacturing, and rising investments in R&D and automation. Countries like China, Japan, South Korea, and India dominate due to their strong semiconductor, automotive, and consumer electronics industries. The expansion of 5G, IoT, and AI technologies further boosts demand. Government initiatives supporting STEM education and electronics research contribute to market expansion. Overall, the region remains a key hub for bench power supply production and consumption.

Region with highest CAGR:

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR, fuelled by strong demand from the aerospace, defense, automotive, and semiconductor industries. The U.S. leads the market with extensive R&D investments, advanced manufacturing, and technological innovation. Growth in IoT, electric vehicles (EVs), and renewable energy further boosts demand for precise power testing solutions. Overall, North America remains a key innovator and consumer in the global bench power supply market.

Key players in the market

Some of the key players in Bench Power Supply market include Keysight Technologies, Rohde & Schwarz GmbH & Co KG, Schneider Electric, Delta Electronics, Agilent Technologies, Teledyne LeCroy, Keithley Instruments, Advanced Energy, Extech Instruments, Global Specialties, Hardkernel, GW Instek, TDK-Lambda, Rigol Technologies, PeakTech Instruments, Kikusui Electronics, Hioki EE, Mastech Holdings, Tektronix Inc. and B&K Precision Corporation.

Key Developments:

In April 2024, Hardkernel launched the SmartPower 3, a low-cost, versatile bench power supply designed with smart features to meet modern electronics testing needs. Based on the ESP32-S2 microcontroller, this power supply integrates IoT capabilities, allowing users to remotely control and monitor power output through the cloud or via a smartphone app. This makes it highly suitable for IoT projects and smart devices testing.

In December 2020, Keysight launched EL30000 Series of DC electronic loads as part of Keysight’s efforts to provide more versatile, compact solutions for testing and

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measuring power systems in research and industrial applications. This series includes a range of bench-top models designed to provide precise and reliable testing for power supplies, batteries, renewable energy devices, and more.

Types Covered:

- Linear Power Supply
- Switching Power Supply
- Programmable Power Supply
- Multi-Output Power Supply
- Other Types

Output Types Covered:

- Single Output
- Dual Output
- Multiple Output

Current Types Covered:

- AC-DC Bench Power Supply
- DC-DC Bench Power Supply

Applications Covered:

- Testing & Measurement
- Research & Development

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- Education & Training
- Manufacturing & Quality Control
- Repair & Maintenance
- Other Applications

End Users Covered:

- Electronics & Semiconductors
- Automotive & Transportation
- Aerospace & Defense
- Telecommunications
- Healthcare
- Industrial & Automation
- Energy & Power
- Other End Users

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe

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- Germany
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- Italy
- France
- Spain
- Rest of Europe

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- India
- Australia
- New Zealand
- South Korea
- Rest of Asia Pacific

South America

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- Brazil
- Chile
- Rest of South America

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Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2022, 2023, 2024, 2026, and 2030
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as

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per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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