+357 96 030922
info@marketpublishers.com

Quantum Computing Hardware Market Forecasts to 2034– Global Analysis By Component (Processors, Memory & Storage, Quantum Interconnects, Control Electronics, Software & Firmware and Cryogenic Systems), Type, Deployment, End User and By Geography

https://marketpublishers.com/r/QD24D08E8E9FEN.html
Date: April 2026
Pages: 200
Price: US$ 4,150.00 (Single User License)
ID: QD24D08E8E9FEN

Abstracts

According to Stratistics MRC, the Global Quantum Computing Hardware Market is accounted for $1.44 billion in 2026 and is expected to reach $13.90 billion by 2034 growing at a CAGR of 32.7% during the forecast period. Quantum computing hardware refers to the physical systems and components designed to process information using principles of quantum mechanics. Unlike classical computers that rely on bits, quantum hardware utilizes quantum bits (qubits), which can exist in multiple states simultaneously through superposition and become interconnected via entanglement. This hardware includes superconducting circuits, trapped ions, photonic systems, and cryogenic infrastructure to maintain quantum coherence. It also integrates control electronics and error-correction mechanisms to ensure stability and accuracy. Quantum computing hardware enables complex problem-solving capabilities beyond classical limitations, particularly in cryptography, optimization, and advanced simulations.

Market Dynamics:

Driver:

Rising Investments and Government Support

Rising public and private investments are accelerating advancements in quantum

+357 96 030922
info@marketpublishers.com

computing hardware. Governments across major economies are funding large scale research initiatives, while technology leaders and venture capital firms are injecting capital into startups and innovation hubs. This financial backing supports the development of advanced qubit architectures and scalable systems. Additionally, strategic collaborations between academia, industry, and defense sectors are strengthening the ecosystem, fostering breakthroughs that push quantum hardware closer to commercial viability and long-term technological leadership.

Restraint:

High Cost and Complex Infrastructure

The development and deployment of quantum computing hardware involve significant capital expenditure and intricate infrastructure requirements. Maintaining quantum states demands ultra-low temperatures, specialized cryogenic systems, and highly controlled environments, which drive up operational costs. Moreover, the need for precision engineering, skilled expertise, and advanced materials further increases complexity. These barriers limit widespread adoption, particularly among smaller enterprises, and slow commercialization efforts, making affordability scalability critical challenges for sustained market growth.

Opportunity:

Demand for High Performance Computing

The growing need for high performance computing across industries is creating strong opportunities for quantum computing hardware. Sectors such as pharmaceuticals, finance, logistics, and energy require immense computational power for simulations, optimization, and data analysis. Quantum systems offer the potential to outperform classical supercomputers in solving complex problems. As organizations seek faster and more efficient processing capabilities, the integration of quantum hardware with existing HPC frameworks is expected to unlock new applications, driving demand and encouraging further technological advancements.

Threat:

Scalability Challenges

Scalability remains one of the most significant challenges facing quantum computing

+357 96 030922
info@marketpublishers.com

hardware. Expanding qubit counts while maintaining coherence and minimizing errors is technically demanding. As systems grow larger, issues such as noise interference, error rates, and hardware instability become more pronounced. Additionally, integrating multiple qubits into stable, interconnected architectures requires breakthroughs in materials and design. These technical limitations pose a threat to achieving practical, potentially delaying commercialization and limiting the technology's immediate impact.

Covid-19 Impact:

The COVID-19 pandemic had a mixed impact on the market. While initial disruptions in supply chains and laboratory operations slowed research activities, the crisis also underscored the importance of advanced computing for drug discovery, epidemiological modeling, and data analysis. Increased digital transformation and government stimulus funding supported continued investment in emerging technologies. As a result, the pandemic ultimately reinforced the strategic importance of quantum computing, accelerating long-term research priorities and strengthening global interest in resilient, high performance computing systems.

The photonic qubits segment is expected to be the largest during the forecast period

The photonic qubits segment is expected to account for the largest market share during the forecast period, due to their inherent advantages in stability and room temperature operation. Unlike other qubit types, photonic systems are less susceptible to environmental noise and can transmit quantum information over long distances with minimal loss. These characteristics make them highly suitable for quantum communication and networking applications. Continuous advancements in integrated photonics and optical technologies are further enhancing performance, positioning photonic qubits as a leading choice.

The software & firmware segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the software & firmware segment is predicted to witness the highest growth rate, due to growing need for efficient quantum control, error correction, and system optimization. As quantum hardware becomes more complex, advanced software solutions are essential to manage qubit operations, calibration, and algorithm execution. The development of robust programming frameworks and middleware is enabling broader accessibility and integration with classical systems. This rapid evolution of the software layer is critical for unlocking the full potential of quantum

+357 96 030922
info@marketpublishers.com

hardware.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share, due to advanced research infrastructure, and the presence of leading technology companies. The region benefits from a well-established ecosystem that fosters innovation through collaborations between universities, startups, and major corporations. Additionally, defense and cybersecurity initiatives are driving investments in quantum technologies. This combination of financial support, talent availability, and technological leadership positions North America at the forefront of quantum computing hardware development.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, owing to expanding research capabilities, and growing investments in emerging technologies. Countries such as China, Japan, and South Korea are prioritizing quantum computing as part of their national innovation strategies. Rapid industrialization, coupled with rising demand for advanced computing solutions, is further fueling market growth. The region’s focus on building indigenous capabilities and fostering international collaborations is accelerating the development and adoption of quantum hardware technologies.

Key players in the market

Some of the key players in Quantum Computing Hardware Market include IBM, Google, Microsoft, Intel, Rigetti Computing, IonQ, D-Wave Quantum, Quantinuum, PsiQuantum, Xanadu, Pasqal, Atom Computing, Infleqtion, IQM Quantum Computers and Oxford Quantum Circuits.

Key Developments:

In February 2026, IBM introduced the next-generation autonomous storage portfolio featuring IBM Flash System 5600, 7600, and 9600, powered by agentic AI. The systems automate storage management, improve cyber-resilience, and optimize enterprise data operations, helping organizations manage AI workloads more efficiently. This launch strengthens IBM’s hybrid cloud and AI infrastructure ecosystem by reducing manual IT operations and enabling autonomous data storage environments.

+357 96 030922
info@marketpublishers.com

In January 2026, IBM partnered with telecom group e& to deploy enterprise-grade agentic AI solutions for governance and regulatory compliance. The collaboration focuses on implementing advanced AI agents capable of automating compliance monitoring, operational decision-making, and enterprise analytics. Announced at the World Economic Forum in Davos, the initiative demonstrates IBM's growing focus on enterprise AI ecosystems.

Components Covered:

- Processors
- Memory & Storage
- Quantum Interconnects
- Control Electronics
- Software & Firmware
- Cryogenic Systems

Types Covered:

- Superconducting Qubits
- Trapped Ion Qubits
- Photonic Qubits
- Topological Qubits
- Spin Qubits
- Other Types

Deployments Covered:

+357 96 030922
info@marketpublishers.com

- On-Premise
- Cloud-Based

End Users Covered:

- IT & Telecom
- Banking, Financial Services & Insurance (BFSI)
- Healthcare & Life Sciences
- Aerospace & Defense
- Energy & Utilities
- Automotive & Manufacturing
- Academic & Research Institutes

Regions Covered:

- North America
  - United States
  - Canada
  - Mexico
- Europe
  - United Kingdom
  - Germany
  - France

+357 96 030922
info@marketpublishers.com

- Italy
- Spain
- Netherlands
- Belgium
- Sweden
- Switzerland
- Poland
- Rest of Europe

Asia Pacific

- China
- Japan
- India
- South Korea
- Australia
- Indonesia
- Thailand
- Malaysia
- Singapore
- Vietnam

+357 96 030922
info@marketpublishers.com

- Rest of Asia Pacific
- South America
  - Brazil
  - Argentina
  - Colombia
  - Chile
  - Peru
  - Rest of South America
- Rest of the World (RoW)
  - Middle East
    - Saudi Arabia
    - United Arab Emirates
    - Qatar
    - Israel
    - Rest of Middle East
  - Africa
    - South Africa
    - Egypt
    - Morocco
    - Rest of Africa

+357 96 030922
info@marketpublishers.com

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 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034
- 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

+357 96 030922
info@marketpublishers.com

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

+357 96 030922
info@marketpublishers.com

Contents

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

10 STRATEGIC MARKET INTELLIGENCE

11 INDUSTRY DEVELOPMENTS AND STRATEGIC INITIATIVES

12 COMPANY PROFILES

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

List Of Tables

LIST OF TABLES

+357 96 030922
info@marketpublishers.com

Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) are also represented in the same manner as above.

+357 96 030922
info@marketpublishers.com

I would like to order

Product name: Quantum Computing Hardware Market Forecasts to 2034– Global Analysis By Component (Processors, Memory & Storage, Quantum Interconnects, Control Electronics, Software & Firmware and Cryogenic Systems), Type, Deployment, End User and By Geography

Product link: https://marketpublishers.com/r/QD24D08E8E9FEN.html

Price: US$ 4,150.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:
info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/QD24D08E8E9FEN.html