

# **Quantum Security Market Outlook 2025-2034: Market Share, and Growth Analysis By Component (Hardware, Software, Services), By Deployment Model (Cloud, On-Premise), By Application**

<https://marketpublishers.com/r/Q42D1A9F830AEN.html>

Date: October 2025

Pages: 160

Price: US\$ 3,950.00 (Single User License)

ID: Q42D1A9F830AEN

## **Abstracts**

The Quantum Security Market is valued at USD 2 billion in 2025 and is projected to grow at a CAGR of 40.2% to reach USD 41.8 billion by 2034.

### Market Overview

The quantum security market is rapidly emerging as a critical sector in the field of cybersecurity, driven by the need for solutions that can withstand the growing threats posed by quantum computing. Quantum security employs the principles of quantum mechanics to create encryption systems that are fundamentally more secure than classical cryptographic methods. Key technologies in this field include Quantum Key Distribution (QKD) and post-quantum cryptography, both of which provide a level of protection that is considered invulnerable to attacks from both traditional and quantum computers. With the rise of quantum computing, which threatens to break current encryption standards such as RSA and ECC, there is an increasing demand for quantum-resistant security solutions. Industries such as finance, government, defense, and healthcare, where data security is paramount, are driving the demand for quantum security solutions. As quantum computers become more powerful, traditional encryption systems will need to be replaced or augmented with quantum-safe technologies to ensure the continued protection of sensitive data. However, challenges related to the cost, complexity, and scalability of quantum security systems remain significant barriers to widespread adoption in the market. The quantum security market experienced notable developments, with key players making strides in developing and deploying quantum-safe encryption technologies. Companies like ID Quantique, Toshiba, and

Honeywell introduced advanced quantum key distribution systems designed to enhance data protection in critical infrastructure and secure communication channels. The integration of quantum security with existing communication networks, including the development of hybrid quantum-classical systems, became a significant focus. This approach enables organizations to adopt quantum-safe encryption solutions without fully replacing their legacy systems. Additionally, the market saw the rise of post-quantum cryptographic algorithms, which are designed to withstand attacks from both classical and quantum computers. These algorithms are being tested and standardized by organizations such as the National Institute of Standards and Technology (NIST) to ensure their security and applicability in real-world scenarios. While these advancements marked progress, the market still faced challenges, including the high cost of implementing quantum security systems, the need for specialized infrastructure, and a shortage of skilled professionals capable of integrating quantum security solutions effectively across industries. The quantum security market is expected to see substantial growth, driven by the continued evolution of quantum computing and the increasing need for secure data transmission and protection. As quantum computing technology matures, quantum security solutions will become essential for industries that rely on sensitive data, such as finance, healthcare, and government. The integration of quantum-resistant encryption methods, such as lattice-based cryptography, will become more widespread, with businesses looking to future-proof their communication systems against the threats posed by quantum computers. Additionally, advancements in quantum key distribution networks, including satellite-based QKD systems, will expand the reach of quantum security solutions, enabling global secure communications. Governments will likely play a crucial role in the adoption of quantum security, with many investing in national quantum security infrastructures to protect critical assets. However, challenges such as the high costs of deployment, the complexity of transitioning to quantum-safe systems, and the limited availability of skilled quantum security professionals will continue to hinder broader market adoption. Overcoming these challenges will require sustained innovation and collaboration between governments, academia, and industry players.

## Key Insights Quantum Security Market

Increasing investment in quantum key distribution (QKD) systems for secure communication, especially in government, defense, and financial sectors, to protect sensitive data from emerging quantum threats.

Expansion of post-quantum cryptographic algorithms being developed and standardized to ensure encryption systems are resistant to both quantum and

classical computing attacks.

Development of hybrid quantum-classical encryption systems that allow businesses to implement quantum security solutions without fully overhauling existing infrastructure, making the transition to quantum-safe systems more feasible.

Growth in the deployment of satellite-based quantum key distribution networks to provide long-distance secure communication for industries and governments globally.

Rising demand for quantum security in industries such as healthcare, finance, and critical infrastructure, where protecting sensitive data and ensuring secure transactions is paramount.

Rising concerns over the vulnerability of traditional encryption methods to quantum computing, driving the need for quantum-resistant cryptography to protect sensitive data.

Government-backed initiatives and investments in quantum technology, including quantum security solutions, to safeguard national security and critical infrastructure from potential cyber threats posed by quantum computing.

Growing demand for secure communication channels in industries such as finance, healthcare, and government, where data protection is critical to maintaining privacy and trust in digital systems.

Advancements in quantum key distribution and post-quantum cryptography, making quantum security solutions more practical and scalable for real-world applications across various industries.

The high cost of quantum security infrastructure, the complexity of implementing quantum-safe encryption systems, and the shortage of skilled professionals in quantum cryptography continue to hinder the widespread adoption and scalability of quantum security solutions.

## Quantum Security Market Segmentation

## By Component

Hardware

Software

Services

## By Deployment Model

Cloud

On-Premise

## By Application

Banking Industry

Financial Industry

Government And Defense Industry

Lotteries And Online Gaming

Business

Other Applications

## Key Companies Analysed

Google LLC

Microsoft Corporation

China Telecom Corporation Limited

International Business Machines Corporation (IBM)

Toshiba Corporation

SK Telecom Co. Ltd.

ISARA Corporation

ID Quantique SA

QuantumCTek Co. Ltd.

Oxford Quantum Circuits Ltd.

Zapata Computing Inc.

QuintessenceLabs Pty Ltd.

Crypta Labs Limited

Qrypt Inc.

PQSecure Technologies LLC

Qubitekk Inc.

Nucrypt LLC

QNu Labs Pvt. Ltd.

QuEra Computing Inc.

KETS Quantum Security Ltd.

VeriQloud Inc.

MagiQ Technologies Inc.

Quantum Xchange Inc.

Anhui Qasky Quantum Technology Co. Ltd.

Kudelski Group SA

### Quantum Security Market Analytics

The report employs rigorous tools, including Porter's Five Forces, value chain mapping, and scenario-based modeling, to assess supply–demand dynamics. Cross-sector influences from parent, derived, and substitute markets are evaluated to identify risks and opportunities. Trade and pricing analytics provide an up-to-date view of international flows, including leading exporters, importers, and regional price trends.

Macroeconomic indicators, policy frameworks such as carbon pricing and energy security strategies, and evolving consumer behavior are considered in forecasting scenarios. Recent deal flows, partnerships, and technology innovations are incorporated to assess their impact on future market performance.

### Quantum Security Market Competitive Intelligence

The competitive landscape is mapped through OG Analysis' proprietary frameworks, profiling leading companies with details on business models, product portfolios, financial performance, and strategic initiatives. Key developments such as mergers & acquisitions, technology collaborations, investment inflows, and regional expansions are analyzed for their competitive impact. The report also identifies emerging players and innovative startups contributing to market disruption.

Regional insights highlight the most promising investment destinations, regulatory landscapes, and evolving partnerships across energy and industrial corridors.

### Countries Covered

North America — Quantum Security market data and outlook to 2034

United States

Canada

Mexico

Europe — Quantum Security market data and outlook to 2034

Germany

United Kingdom

France

Italy

Spain

BeNeLux

Russia

Sweden

Asia-Pacific — Quantum Security market data and outlook to 2034

China

Japan

India

South Korea

Australia

Indonesia

Malaysia

Vietnam

Middle East and Africa — Quantum Security market data and outlook to 2034

Saudi Arabia

South Africa

Iran

UAE

Egypt

South and Central America — Quantum Security market data and outlook to 2034

Brazil

Argentina

Chile

Peru

*\* We can include data and analysis of additional countries on demand.*

## Research Methodology

This study combines primary inputs from industry experts across the Quantum Security value chain with secondary data from associations, government publications, trade databases, and company disclosures. Proprietary modeling techniques, including data triangulation, statistical correlation, and scenario planning, are applied to deliver reliable market sizing and forecasting.

## Key Questions Addressed

What is the current and forecast market size of the Quantum Security industry at global, regional, and country levels?

Which types, applications, and technologies present the highest growth

potential?

How are supply chains adapting to geopolitical and economic shocks?

What role do policy frameworks, trade flows, and sustainability targets play in shaping demand?

Who are the leading players, and how are their strategies evolving in the face of global uncertainty?

Which regional “hotspots” and customer segments will outpace the market, and what go-to-market and partnership models best support entry and expansion?

Where are the most investable opportunities—across technology roadmaps, sustainability-linked innovation, and M&A—and what is the best segment to invest over the next 3–5 years?

## Your Key Takeaways from the Quantum Security Market Report

Global Quantum Security market size and growth projections (CAGR), 2024-2034

Impact of Russia-Ukraine, Israel-Palestine, and Hamas conflicts on Quantum Security trade, costs, and supply chains

Quantum Security market size, share, and outlook across 5 regions and 27 countries, 2023-2034

Quantum Security market size, CAGR, and market share of key products, applications, and end-user verticals, 2023-2034

Short- and long-term Quantum Security market trends, drivers, restraints, and opportunities

Porter’s Five Forces analysis, technological developments, and Quantum Security supply chain analysis

Quantum Security trade analysis, Quantum Security market price analysis, and

Quantum Security supply/demand dynamics

Profiles of 5 leading companies—overview, key strategies, financials, and products

Latest Quantum Security market news and developments

### Additional Support

With the purchase of this report, you will receive

An updated PDF report and an MS Excel data workbook containing all market tables and figures for easy analysis.

7-day post-sale analyst support for clarifications and in-scope supplementary data, ensuring the deliverable aligns precisely with your requirements.

Complimentary report update to incorporate the latest available data and the impact of recent market developments.

*\* The updated report will be delivered within 3 working days*

## Contents

### 1. TABLE OF CONTENTS

- 1.1 List of Tables
- 1.2 List of Figures

### 2. GLOBAL QUANTUM SECURITY MARKET SUMMARY, 2025

- 2.1 Quantum Security Industry Overview
  - 2.1.1 Global Quantum Security Market Revenues (In US\$ billion)
- 2.2 Quantum Security Market Scope
- 2.3 Research Methodology

### 3. QUANTUM SECURITY MARKET INSIGHTS, 2024-2034

- 3.1 Quantum Security Market Drivers
- 3.2 Quantum Security Market Restraints
- 3.3 Quantum Security Market Opportunities
- 3.4 Quantum Security Market Challenges
- 3.5 Tariff Impact on Global Quantum Security Supply Chain Patterns

### 4. QUANTUM SECURITY MARKET ANALYTICS

- 4.1 Quantum Security Market Size and Share, Key Products, 2025 Vs 2034
- 4.2 Quantum Security Market Size and Share, Dominant Applications, 2025 Vs 2034
- 4.3 Quantum Security Market Size and Share, Leading End Uses, 2025 Vs 2034
- 4.4 Quantum Security Market Size and Share, High Growth Countries, 2025 Vs 2034
- 4.5 Five Forces Analysis for Global Quantum Security Market
  - 4.5.1 Quantum Security Industry Attractiveness Index, 2025
  - 4.5.2 Quantum Security Supplier Intelligence
  - 4.5.3 Quantum Security Buyer Intelligence
  - 4.5.4 Quantum Security Competition Intelligence
  - 4.5.5 Quantum Security Product Alternatives and Substitutes Intelligence
  - 4.5.6 Quantum Security Market Entry Intelligence

### 5. GLOBAL QUANTUM SECURITY MARKET STATISTICS – INDUSTRY REVENUE, MARKET SHARE, GROWTH TRENDS AND FORECAST BY SEGMENTS, TO 2034

5.1 World Quantum Security Market Size, Potential and Growth Outlook, 2024- 2034 (\$ billion)

5.1 Global Quantum Security Sales Outlook and CAGR Growth By Component, 2024-2034 (\$ billion)

5.2 Global Quantum Security Sales Outlook and CAGR Growth By Deployment Model, 2024- 2034 (\$ billion)

5.3 Global Quantum Security Sales Outlook and CAGR Growth By Application, 2024-2034 (\$ billion)

5.4 Global Quantum Security Market Sales Outlook and Growth by Region, 2024- 2034 (\$ billion)

## **6. ASIA PACIFIC QUANTUM SECURITY INDUSTRY STATISTICS – MARKET SIZE, SHARE, COMPETITION AND OUTLOOK**

6.1 Asia Pacific Quantum Security Market Insights, 2025

6.2 Asia Pacific Quantum Security Market Revenue Forecast By Component, 2024-2034 (USD billion)

6.3 Asia Pacific Quantum Security Market Revenue Forecast By Deployment Model, 2024- 2034 (USD billion)

6.4 Asia Pacific Quantum Security Market Revenue Forecast By Application, 2024-2034 (USD billion)

6.5 Asia Pacific Quantum Security Market Revenue Forecast by Country, 2024- 2034 (USD billion)

6.5.1 China Quantum Security Market Size, Opportunities, Growth 2024- 2034

6.5.2 India Quantum Security Market Size, Opportunities, Growth 2024- 2034

6.5.3 Japan Quantum Security Market Size, Opportunities, Growth 2024- 2034

6.5.4 Australia Quantum Security Market Size, Opportunities, Growth 2024- 2034

## **7. EUROPE QUANTUM SECURITY MARKET DATA, PENETRATION, AND BUSINESS PROSPECTS TO 2034**

7.1 Europe Quantum Security Market Key Findings, 2025

7.2 Europe Quantum Security Market Size and Percentage Breakdown By Component, 2024- 2034 (USD billion)

7.3 Europe Quantum Security Market Size and Percentage Breakdown By Deployment Model, 2024- 2034 (USD billion)

7.4 Europe Quantum Security Market Size and Percentage Breakdown By Application, 2024- 2034 (USD billion)

7.5 Europe Quantum Security Market Size and Percentage Breakdown by Country,

2024- 2034 (USD billion)

7.5.1 Germany Quantum Security Market Size, Trends, Growth Outlook to 2034

7.5.2 United Kingdom Quantum Security Market Size, Trends, Growth Outlook to 2034

7.5.2 France Quantum Security Market Size, Trends, Growth Outlook to 2034

7.5.2 Italy Quantum Security Market Size, Trends, Growth Outlook to 2034

7.5.2 Spain Quantum Security Market Size, Trends, Growth Outlook to 2034

## **8. NORTH AMERICA QUANTUM SECURITY MARKET SIZE, GROWTH TRENDS, AND FUTURE PROSPECTS TO 2034**

8.1 North America Snapshot, 2025

8.2 North America Quantum Security Market Analysis and Outlook By Component, 2024- 2034 (\$ billion)

8.3 North America Quantum Security Market Analysis and Outlook By Deployment Model, 2024- 2034 (\$ billion)

8.4 North America Quantum Security Market Analysis and Outlook By Application, 2024- 2034 (\$ billion)

8.5 North America Quantum Security Market Analysis and Outlook by Country, 2024- 2034 (\$ billion)

8.5.1 United States Quantum Security Market Size, Share, Growth Trends and Forecast, 2024- 2034

8.5.1 Canada Quantum Security Market Size, Share, Growth Trends and Forecast, 2024- 2034

8.5.1 Mexico Quantum Security Market Size, Share, Growth Trends and Forecast, 2024- 2034

## **9. SOUTH AND CENTRAL AMERICA QUANTUM SECURITY MARKET DRIVERS, CHALLENGES, AND FUTURE PROSPECTS**

9.1 Latin America Quantum Security Market Data, 2025

9.2 Latin America Quantum Security Market Future By Component, 2024- 2034 (\$ billion)

9.3 Latin America Quantum Security Market Future By Deployment Model, 2024- 2034 (\$ billion)

9.4 Latin America Quantum Security Market Future By Application, 2024- 2034 (\$ billion)

9.5 Latin America Quantum Security Market Future by Country, 2024- 2034 (\$ billion)

9.5.1 Brazil Quantum Security Market Size, Share and Opportunities to 2034

9.5.2 Argentina Quantum Security Market Size, Share and Opportunities to 2034

## **10. MIDDLE EAST AFRICA QUANTUM SECURITY MARKET OUTLOOK AND GROWTH PROSPECTS**

10.1 Middle East Africa Overview, 2025

10.2 Middle East Africa Quantum Security Market Statistics By Component, 2024- 2034 (USD billion)

10.3 Middle East Africa Quantum Security Market Statistics By Deployment Model, 2024- 2034 (USD billion)

10.4 Middle East Africa Quantum Security Market Statistics By Application, 2024- 2034 (USD billion)

10.5 Middle East Africa Quantum Security Market Statistics by Country, 2024- 2034 (USD billion)

10.5.1 Middle East Quantum Security Market Value, Trends, Growth Forecasts to 2034

10.5.2 Africa Quantum Security Market Value, Trends, Growth Forecasts to 2034

## **11. QUANTUM SECURITY MARKET STRUCTURE AND COMPETITIVE LANDSCAPE**

11.1 Key Companies in Quantum Security Industry

11.2 Quantum Security Business Overview

11.3 Quantum Security Product Portfolio Analysis

11.4 Financial Analysis

11.5 SWOT Analysis

## **12 APPENDIX**

12.1 Global Quantum Security Market Volume (Tons)

12.1 Global Quantum Security Trade and Price Analysis

12.2 Quantum Security Parent Market and Other Relevant Analysis

12.3 Publisher Expertise

12.2 Quantum Security Industry Report Sources and Methodology

## I would like to order

Product name: Quantum Security Market Outlook 2025-2034: Market Share, and Growth Analysis By Component (Hardware, Software, Services), By Deployment Model (Cloud, On-Premise), By Application

Product link: <https://marketpublishers.com/r/Q42D1A9F830AEN.html>

Price: US\$ 3,950.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/Q42D1A9F830AEN.html>