

Quantum Cryptography Market to Surpass USD 33.15 Billion by 2034 as Post-Quantum Threats Force Global Security Overhaul

The quantum cryptography market hits \$2.93B in 2025, racing to \$33.15B by 2034 at 35.3% CAGR as quantum threats force a global security overhaul.

NEW YORK CITY, NY, UNITED STATES, May 26, 2026 /EINPresswire.com/ -- The growth is mainly linked to rising cyber threats from nation-states and increasing risks to data security. Meanwhile, the fast progress in [quantum computing](#) is creating urgency. There is an increasing need for robust protection systems. Many organizations are now moving towards quantum-safe encryption. This is essential to protect sensitive information.

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"Quantum computing is no longer a distant threat. Nation-states are harvesting encrypted data today to decrypt tomorrow. Organizations that delay quantum-safe encryption are already falling behind."

Prajakta Bengale

Quantum cryptography market is projected to reach USD 33.15 billion by 2034, growing at a CAGR of 35.30% from USD 2.93 billion in 2025. The market is driven by the increasing need for secure communication methods as quantum computing progresses.

by 2034.

Government regulations and compliance requirements are also driving adoption. Industries are actively exploring quantum cryptography solutions. This include banking, defense, and healthcare. The report states that as quantum computing progresses, the demand for secure communication methods will rise steadily.

Quantum cryptography is no longer seen as a future only technology. The shift is becoming a reality as organizations move towards quantum-safe encryption to protect sensitive information.

Quantum cryptography & security

Quantum cryptography is no longer seen as a future only technology. The shift is becoming

more practical as problems grow that advances in quantum computing could weaken traditional encryption methods like RSA and ECC. This underscores the importance of more effective protection systems than ever. The year 2024 marked a significant milestone. The NIST post-quantum standards were approved. This gave businesses, governments and security providers a more concrete way forward to transition to post-quantum cryptography and more comprehensive quantum-safe encryption strategies. Consequently, adoption is gaining momentum in key industries.

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- By Offering: Solutions, Services
- By Security Type: Network Security, Application Security
- By Vertical Outlook: Government, Defense, BFSI, Health Care, Retail & eCommerce
- By Regional Outlook:
 - o North America: US, Canada
 - o Europe: Germany, France, UK, Italy, Spain, Netherlands, Russia, Rest of Europe
 - o Asia Pacific: China, Japan, India, Malaysia, South Korea, Indonesia, Australia, Vietnam, Rest of Asia Pacific
 - o Middle East & Africa: Saudi Arabia, UAE, Israel, South Africa, Rest of Middle East & Africa
 - o Latin America: Mexico, Brazil, Argentina, Rest of Latin America

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Escalating cyber threats are one of the biggest reasons behind the growing demand for quantum cryptography. The “harvest now, decrypt later” threat is creating real problem in sectors. In this type of attack, bad actors collect encrypted data today and store it for future use. They expect that eventually, sufficiently powerful quantum computers will be able to decrypt this data in the future. This is the reason why quantum-safe encryption is already starting to become a requirement before large-scale quantum computers are even available.



Quantum Cryptography Market

Quantum cryptography, also known as quantum encryption, is a technique that leverages the laws of quantum mechanics to protect communication links.

Growth Drivers

- ⚙ Rising global cyberattacks increasing data security concerns
- ⚙ Quantum computing threats to traditional encryption methods
- ⚙ Growing demand for long-term confidential data protection

Quantum Cryptography Market

Nation-state cyber espionage is also pushing governments to invest in quantum key distribution and other secure communication systems. In the BFSI sector, institutions are looking at quantum-resistant protocols. This is to protect long-term financial records and confidential customer information. At the same time, there are growing requirements for healthcare and [critical infrastructure protection](#). This is under regimes such as NIS2 and CISA. These regulations are putting more pressure on organizations to improve their security strategies.

Funding is also supporting market growth. Venture capital activity is increasing, and governments are backing research. This program includes the US CHIPS Act and the EU Quantum Flagship. This is helping the larger cybersecurity market move closer to quantum ready solutions.

Quantum Security Solutions & Quantum Key Distribution

Quantum security solutions are being developed to protect data and communications from quantum computing attacks. Quantum key distribution (QKD) is a secure communication method that uses quantum mechanics to create and distribute cryptographic keys. Quantum-resistant algorithms are also being developed to protect data from quantum computing attacks.

The quantum security solutions market is becoming more competitive as different types of companies rush to enter the space. Telecom giants, defense contractors, and pure-play quantum startups are all working to build stronger quantum-safe encryption and quantum key distribution (QKD) systems. Important players include ID Quantique, Toshiba, IBM, Quantinuum, and MagiQ Technologies, each pushing forward with new technology and partnerships.

Strategic mergers and acquisitions (M&A) are increasing. Several companies are winning government contracts to support secure communication networks. Satellite-based QKD networks are also gaining attention. China’s Micius satellite and the EU’s EuroQCI initiative are strong examples of how governments are moving toward large-scale quantum-secure infrastructure.

At the same time, Quantum-as-a-Service (QaaS) models are becoming more common. These delivery models make it easier for organizations to adopt quantum cryptography. Firms need not build their own infrastructure from scratch. The patent race is becoming fiercer too, particularly in North America and Asia-Pacific. More companies are filing patents related to QKD and quantum-safe encryption. This competition is expected to accelerate innovation, and bring more cost-effective quantum security solutions to the market.

Quantum Cryptography Market

Quantum cryptography is a secure communication method that uses quantum mechanics to create and distribute cryptographic keys. Quantum-resistant algorithms are also being developed to protect data from quantum computing attacks. Quantum key distribution (QKD) is a secure communication method that uses quantum mechanics to create and distribute cryptographic keys.

The quantum cryptography market is growing at different speeds across regions. Government policies, cybersecurity budgets, and national quantum programs are shaping which areas lead and which grow faster. North America currently holds the largest share. Asia-Pacific is expanding

the quickest.

- North America continues to lead the global quantum cryptography market. The region benefits from strong federal support. It includes the US NSM-10 directive that pushes federal agencies toward post-quantum cryptography. The Pentagon has also started QKD pilot programs to test secure communication links. Private investment in quantum security remains high. The investment helps the network security market grow faster in many other regions.
- Europe is advancing the EU Quantum Flagship program and EuroQCI backbone network. These programs are developing a structured path for secure communication across member countries. GDPR-driven data protection needs are also pushing enterprises to adopt quantum-safe encryption and upgrade their security infrastructure.
- Asia-Pacific is emerging as the fastest-growing region. China has built significant quantum satellite infrastructure. It includes the Micius satellite, which helps long-distance quantum communication. Japan has launched a national quantum strategy focusing on both research and commercialization. India is also developing an interest in quantum technologies, with new investments and policy discussions taking place.
- The Middle East is not far behind. The UAE and Saudi Arabia are investing in quantum cryptography as part of their Vision 2030 digital sovereignty goals. These countries need to secure critical data and communication networks while reducing dependence on foreign technology.

Regional investments are on the rise. Government strategies are more defined today. Countries are sponsoring quantum research. Security rules are pushing adoption North America is leading. Quantum cryptography is spreading faster. Asia-Pacific is growing fastest. Europe and the Middle East follow. The world is moving toward quantum-safe protection, step by step.

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The quantum cryptography market is moving into a more active phase as public and private organizations respond to the long-term risks created by quantum computing. NIST finalized its first three post-quantum cryptography standards in August 2024 and said organizations should start transitioning now, while NSM-10 directs U.S. agencies to migrate vulnerable systems to quantum-resistant cryptography. At the same time, Europe is building EuroQCI as a secure quantum communication infrastructure in the EU. This points to the shift not being limited to one region. These developments suggest that quantum-safe planning is increasingly transitioning from a distant research topic to a mainstream cybersecurity strategy. As investments increase, regulations clarify and deployment models mature, stronger adoption should be seen in the market. This adoption should be seen across government, finance, healthcare, telecom and critical infrastructure environments. This suggests steady long term demand for quantum cryptography solutions around the world.

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Quantum Cryptography Market Research Report: Quantum Cryptography Market

<https://www.polarismarketresearch.com/industry-analysis/quantum-cryptography-market>

The Polaris Market Research report on the Quantum Cryptography Market provides in-depth analysis covering market sizing, segmentation, competitive intelligence, and forecasts. The report equips cybersecurity executives, investors, and policy strategists with the data needed to make high-stakes decisions in an era of rapid quantum disruption. It helps organizations understand where the market is heading and how to prepare for quantum-safe security requirements across industries.

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