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Quantum Communication Market by Solution (Quantum Detectors, Quantum Key Distribution (QKD), Quantum Random Number Generator (QRNG), Quantum-safe Cryptography), QKD Transmission Type (Fiber-based and Free-space/Satellite-based) - Global Forecast to 2030

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Abstracts

The global quantum communication market size is projected to grow from USD 0.74 billion in 2024 to USD 5.54 billion by 2030 at a Compound Annual Growth Rate (CAGR) of 39.6% during the forecast period.

A major contributing factor to the growth of the quantum communication solutions globally is the advancement of satellite-based networks. As global demand for secure, long-distance communication grows, quantum technologies like Quantum Key Distribution (QKD) are being integrated into satellite systems to enable secure data transmission across vast distances. These satellite-based quantum networks are particularly crucial for industries such as telecommunications and space exploration, as reliable and secure communication channels are essential in these sectors.

'By vertical, the aerospace segment accounts for the highest CAGR during the forecast period.'

The aerospace industry is expected to witness a high growth rate in the quantum communication market due to the rising demand for secure communication systems in space exploration and satellite-based networks. As satellite-based quantum networks and Quantum Key Distribution (QKD) become essential for secure data transmission over long distances, aerospace companies are increasingly investing in quantum

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technologies to enhance communication security. For instance, Airbus is advancing quantum communications with its Teleo project, a space-to-Earth optical link demonstrator designed for high resilience against jamming, paving the way for secure and reliable future networks.

'By region, the North America accounts for a larger market share.'

North America is expected to account for a large market share in the quantum communication market due to significant investments in quantum research, strong government support, and the presence of leading tech companies. The region's focus on developing secure communication networks for commercial, scientific, and space-based applications, along with collaborations between quantum technology providers, drives the adoption of quantum communication. For instance, Toshiba America, partnered with Safe Quantum in the areas of quantum key distribution (QKD) and quantum communications. Additionally, initiatives such as the U.S. National Quantum Initiative and partnerships with aerospace and telecom sectors further bolster North America's leadership in the quantum communication market.

Breakdown of primaries

The study contains insights from various industry experts, from component suppliers to Tier 1 companies and OEMs. The break-up of the primaries is as follows:

By Company Type: Tier 1 – 40%, Tier 2 – 35%, and Tier 3 – 25%

By Designation: C-level – 45%, Directors – 35%, and Managers – 20%

By Region: North America – 55%, Europe – 25%, Asia Pacific – 15%, RoW – 5%

The key players in the quantum communication market include Toshiba (Japan), Thales (France), IDEMIA (France), ID Quantique (Switzerland), Quintessence Labs (Australia), QuantumCtek (China), Qubitekk (US), Quantum Xchange (US), HEQA Security (Israel), MagiQ Technologies (US), Crypta Labs (UK), Nucrypt (US), Quantum Opus (US), Nu Quantum (UK), Ki3 Photonics Technologies (Canada), Miraex (Switzerland), S-Fifteen Instruments (Singapore), and others.

The study includes an in-depth competitive analysis of the key players in the quantum communication market, their company profiles, recent developments, and key market

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strategies.

Research Coverage

The report segments the quantum communication market and forecasts its size by Offering {[Solution (Quantum Communication Components (photon sources, quantum detectors, quantum repeaters, quantum modulators and transceivers, quantum memory), Quantum Key Distribution (QKD) solutions, Quantum Random Number Generator (QRNG), Quantum-Safe Cryptographic Solutions) and Services (Professional (Training & Consulting, Deployment & Integration, and Support & Maintenance) and Managed Services)]}, QKD Transmission Type (Fibre-based QKD and Free-space/ satellite-based QKD), Deployment Mode (On-premises and Cloud), Organization Size (Large Enterprises and SMEs), Vertical (BFSI, Government & Defense, Healthcare, Aerospace, IT & Telecommunication, Energy & Utilities, Academia & Research, and Other Verticals), and Region (North America, Europe, Asia Pacific, Middle East and Africa, and Latin America).

The study also includes an in-depth competitive analysis of the market's key players, their company profiles, key observations related to product and business offerings, recent developments, and key market strategies.

Key Benefits of Buying the Report

The report will help the market leaders/new entrants with information on the closest approximations of the revenue numbers for the overall quantum communication market and the subsegments. This report will help stakeholders understand the competitive landscape and gain more insights to position their businesses better and plan suitable go-to-market strategies. The report also helps stakeholders understand the market pulse and provides information on key market drivers, restraints, challenges, and opportunities.

The report provides insights on the following pointers:

Analysis of key drivers (increasing cyber threats boosting demand for robust quantum communication solutions, increasing investment in quantum technology, rising adoption of quantum-safe/post quantum cryptography (PQC), advancements in quantum sensing), restraints (high implementation cost and technological complexity), opportunities (integration with emerging technologies and emphasis on data protection and privacy), and challenges (regulatory and

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standardization challenges and integration complexity)

Product Development/Innovation: Detailed insights on upcoming technologies, research & development activities, and new product & service launches in the quantum communication market.

Market Development: Comprehensive information about lucrative markets – the report analyses the quantum communication market across varied regions.

Market Diversification: Exhaustive information about new products & services, untapped geographies, recent developments, and investments in the quantum communication market.

Competitive Assessment: In-depth assessment of market shares, growth strategies, and service offerings of leading players Toshiba (Japan), Thales (France), IDEMIA (France), ID Quantique (Switzerland), QuintessenceLabs (Australia), QuantumCTek (China), and Qubitekk (US) among others, in the quantum communication market strategies.

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