

# Quantum Networking Equipment

## ANMD-MRS24-236 · Quantum & Advanced Computing

A Global Sustainability Due Diligence & Market Research Study

History 2020–2024 · Base Year 2025 · Forecast 2025–2032 · Outlooks 2035 / 2040 / 2050 · Currency US\$

### WHY THIS REPORT

Quantum networking equipment is the hardware backbone of the future quantum internet — quantum repeaters, entanglement sources and quantum memories that distribute entanglement across metro, long-haul and satellite links to connect quantum processors and secure communications. This report is a comprehensive, decision-grade study of the quantum-networking-equipment market across equipment type, link domain, application, end user and deployment model, spanning history 2020–2024, a 2025 base year, a 2025–2032 forecast and long-term outlooks to 2035, 2040 and 2050.

### SUSTAINABILITY & SDG IMPACT — THE ANMD LENS

The sustainability case centres on secure, sovereign connectivity. Quantum networks underpin critical-communication security and resilient digital infrastructure for the long term. The analysis applies double materiality, maps outcomes to GRI, SASB, ISSB, TCFD, TNFD, CSRD and the EU Taxonomy, and links contributions to SDGs 9, 16 and 17. Dual-use governance, equitable access and responsible-innovation practices are treated as material risks — with greenwashing and SDG-washing screens applied throughout.

#### Mapped Sustainable Development Goals:

<b>SDG 9</b> Industry & Innovation	<b>SDG 16</b> Peace & Justice	<b>SDG 17</b> Partnerships for Goals
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**Framework alignment:** Double materiality mapped to GRI, SASB, ISSB, TCFD, TNFD, CSRD and the EU Taxonomy, with greenwashing and SDG-washing screens applied throughout.

### WHAT'S INSIDE AT A GLANCE

<b>53</b> Chapters	<b>9</b> Report Parts	<b>7</b> Regions Covered	<b>40+</b> Country Markets
<b>2025–32</b> Forecast Horizon	<b>4</b> Forward Scenarios	<b>25+</b> Companies Profiled	<b>3</b> SDGs Mapped

## MARKET OVERVIEW

### Quantum networking is at the testbed-to-infrastructure inflection.

Demand is driven by secure-communication mandates, distributed quantum computing and national quantum-internet initiatives. The market is read three ways — value, units deployed and entanglement rate — and forecast under conservative, base, accelerated and disruption scenarios, with every projection resolved to the 2025 base year and each region reported separately rather than folded into Rest of World.

- North America builds testbeds, anchored by the United States, where Aliro Technologies, Inc., Qunnect, Inc., Cisco Systems, Inc. and Quantum Xchange, Inc. advance metro and entanglement-distribution networks.
- Europe leads research integration, with the Netherlands, France, Finland and the UK advancing QuTech, Weling SAS, Nokia Corporation and Nu Quantum Ltd under EuroQCI.
- Asia Pacific scales backbone links, as China and Japan combine QuantumCTek Co., Ltd., CAS Quantum Network Co., Ltd. and Toshiba Corporation with the largest deployed quantum links.
- Equipment type and link domain segment the value, across repeaters, entanglement sources and quantum memories, and metro/fiber, long-haul and satellite/free-space domains.

## REGIONAL OUTLOOK

Across the seven reporting regions, the report separates research and deployment leaders from emerging adopters, profiling named country sub-markets, quantum-internet programmes and supply pipelines in each. Europe and Asia Pacific anchor research and backbone links; North America scales testbeds; while Latin America, Africa and the Middle East are assessed on their own merits rather than aggregated away.

Region	Stage	Lead Country Markets & Drivers
Europe	Research leader	Netherlands, France, Finland, UK — QuTech, Weling SAS, Nokia Corporation, Nu Quantum Ltd
Asia Pacific	Backbone scale	China, Japan — QuantumCTek Co., Ltd., CAS Quantum Network Co., Ltd., Toshiba Corporation
North America	Testbed builder	United States, Canada — Aliro Technologies, Inc., Qunnect, Inc., Cisco Systems, Inc., Photonic Inc.
Latin America	Emerging	Brazil, Chile — research links, university testbeds
Africa	Frontier	South Africa, Egypt — early research engagement
Middle East	Frontier	Saudi Arabia, UAE, Israel — sovereign secure-network interest

## KEY MARKET DRIVERS & RESTRAINTS

Drivers	Restraints
<ul style="list-style-type: none"> <li>• Quantum-internet &amp; national initiatives</li> <li>• Secure-communication &amp; QKD-network demand</li> <li>• Distributed &amp; networked quantum computing</li> <li>• Satellite &amp; free-space link progress</li> <li>• Research-testbed &amp; standards momentum</li> </ul>	<ul style="list-style-type: none"> <li>• Immature repeater &amp; memory technology</li> <li>• Loss, distance &amp; fidelity constraints</li> <li>• High cost &amp; early-stage TRL</li> <li>• Standards &amp; interoperability gaps</li> <li>• Long horizon to commercial revenue</li> </ul>

## SEGMENTATION SNAPSHOT

<b>By Equipment Type</b>	Quantum repeater · entanglement source · quantum memory
<b>By Link Domain</b>	Metro / fiber · long-haul · satellite / free-space
<b>By Application</b>	Metro / fiber · long-haul · satellite / free-space use cases
<b>By End User</b>	Telecom · research labs · government / defence · cloud / QC providers
<b>By Business Model</b>	Equipment sale · network service · research partnership
<b>By Deployment Scale</b>	Testbed · metro network · backbone / satellite

## TABLE OF CONTENTS — PARTS & CHAPTERS

The full report is organised into nine parts across 53 chapters, listed below. Detailed sub-headings, country tables and directories are provided in the full report.

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- › Chapter 1. Scope, Methodology and Report Architecture
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- › Chapter 3. Executive Intelligence and Decision Dashboard
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**COMPETITIVE & INVESTMENT SNAPSHOT**

The competitive field spans networking incumbents, quantum-networking specialists and research spin-offs. Profiled players include Toshiba Corporation, ID Quantique SA, Aliro Technologies, Inc., Qunnect, Inc., Cisco Systems, Inc., Thales S.A. and Nokia Corporation. Deal activity — testbed consortia, carrier partnerships and venture financing — signals a market forming around interoperable components. Investment intelligence spans venture, government, corporate-strategic and infrastructure finance, culminating in a bankability assessment and investment verdict.

## KEY QUESTIONS THIS REPORT ANSWERS

- ? How large is the global quantum networking equipment market, and how fast will it grow to 2032?
- ? Which regions, countries and segments offer the strongest risk-adjusted opportunity?
- ? How do technology and adoption shifts change value versus legacy approaches?
- ? Who leads, and where is the competitive and patent white space?
- ? Is the investment case bankable — and under what conditions?
- ? How does the category align with the SDGs and disclosure regulation?

## WHY ANMD — THE DIFFERENCE

*Most market studies stop at units and revenue. This report is built as a sustainability due diligence instrument — fusing market sizing with ESG, SDG and natural-capital intelligence and a decision-ready bankability verdict in a single architecture.*

- **Triangulated sizing** — every market read three ways so value, volume and installed-base views reconcile rather than conflict.
- **Region-honest forecasting** — Latin America, Africa and the Middle East reported in full, never hidden inside Rest of World, every forecast resolved to the 2025 base year.
- **Integrated evidence base** — company, patent and project databases linked to the analysis, with published-filing patents and FTO treated as an indicator, not a legal conclusion.
- **No-fabrication discipline** — every estimate carries a data-confidence rating and disclosed sources; gaps are flagged for further diligence, never filled with invented numbers.
- **Anti-greenwashing rigour** — SDG-washing and greenwashing screens plus claim-substantiation checks built into the ESG and project analysis.
- **Decision-first structure** — 9 Parts and 53 Chapters culminating in stakeholder playbooks and a clear, conditional investment verdict.

## WHO SHOULD BUY THIS REPORT

Investors and technology funds, telecom operators and OEMs, research agencies and national labs, government and defence buyers, cloud and quantum-computing providers, policymakers and lenders, and corporate strategy and ESG teams — alongside strategic corporate planners and decision-makers.

### Access the Full Report

The complete report delivers all 53 chapters in full, with every sub-heading, country table, company and patent directory, forecast model and due diligence checklist.

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### Want the Complete Detailed Table of Contents?

This prospectus lists the nine parts and 53 chapters. The complete detailed table of contents — every sub-heading, country table, exhibit, company and patent directory and annex — is available on request to registered users. To receive it, register with your official company email at [www.anewmarketdynamics.com](http://www.anewmarketdynamics.com). The full detailed table of contents will be sent directly to your registered company email address.

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