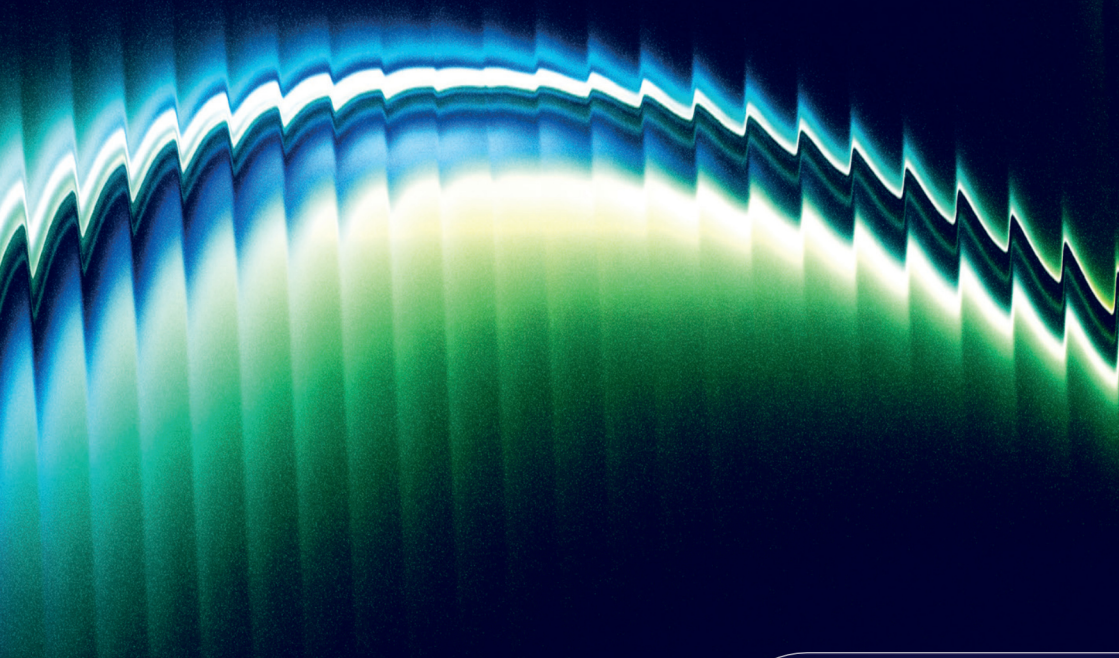
Falqon

PRODUCT

Falqon® 5000 Series

The next-generation infrastructure for Quantum Secure Networks (QSN)



www.falqonsystems.com

Securing the Next Generation of Digital Infrastructure

Digital infrastructure is becoming increasingly interconnected, driving the need for secure, scalable and resilient communication networks. Evolving cyber threats and the emergence of quantum-enabled threats reinforce the importance of long-term cryptographic security across critical infrastructure.

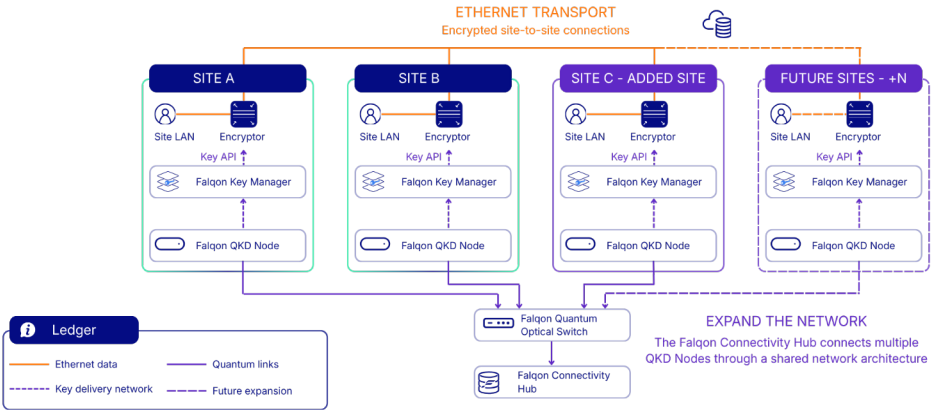
Falqon Systems' Measurement-Device-Independent Quantum Key Distribution (MDI-QKD) technology provides a secure-by-design foundation for Quantum Secure Networks (QSN), eliminating detector vulnerabilities from the QKD security model, enabling secure quantum key generation across multiple network locations.

The Falqon 5000 Series builds on this proven technology with industry-grade hardware, integrated tamper detection, enhanced operational reliability and serviceability, engineered for scalable and resilient Quantum Secure Networks (QSN).

Quantum Security Built for Network Scale

Falqon Systems' network-first solution enables an expanding network of QKD Nodes to connect through one or more shared Connectivity Hub, reducing dedicated pairwise fiber requirements and network complexity.

Supporting multi-node connectivity, dual-homing and inter-hub connectivity, the Falqon 5000 Series enables flexible and resilient Quantum Secure Networks (QSN) across distributed environments.



QKD Node create the ultra-secure cryptographic keys.

Connectivity Hub facilitates quantum key distribution without access to network secrets. No need for a trusted infrastructure.

Quantum Optical Switch enables flexible quantum optical routing across interconnected networks.

Falqon® Key Manager enables secure key management across QKD, PQC and hybrid environments.

Falqon® Domain Controller enables centralised quantum network monitoring, management and orchestration.

Why Trust Your Data To Falqon 5000 Series?

- Detector-side security powered by proven MDI-QKD technology
- Integrated tamper detection and hardware-based security
- Seamless integration with existing telecom and security systems
- High availability through redundant, hot-swappable power and cooling
- Enhanced network resilience with dual-homing and inter-hub connectivity
- Scalable multi-node deployments with shared Connectivity Hubs

Key Features Of The Falqon 5000 Series

Scalable and Cost Effective Solution	✓
Remote Management and Configuration	✓
Embedded Key Management System	✓
Standardized Interfaces	ETSI004, ETSI014, ETSI020, SKIP
Security	Tamper Detection, Detector-Side-Channel Protection, Trojan-Horse Attack Protection, TPM-Based Key Protection
Maximum Distance between 2 QKD Nodes	Up to 200 Km — 40 dB



Key Features of the Falqon 5000 Series

Protocol	Measurement Device Independent QKD (MDI-QKD) with Decoy States
Maximum Quantum Channel Distance	200 km / 40 dB (at 0.2 dB/km)
Secret Key Rate	2400 bps at 100 km (0.2 dB/km)
Pulse Repetition Rate	1.25 GHz
Quantum Random Number Generator	QRNG 12.5 Gbps
Network Architecture	Shared Connectivity Hub, multi-node MDI-QKD
Fiber Requirements	1 fiber pair total for quantum and service channels
Optical Wavelength	C Band (1530–1580 nm) or O Band (1310 nm)
WDM Compatibility	Available upon request
Security Architecture	MDI-QKD; Measurement devices do not require trust
Eavesdropping Detection	QKD protocol security monitoring
Tamper Detection	Persistent, power-independent, tamper detection
Secure Key Storage	Hardware-based TPM
Embedded Key Management	Falqon Key Manager, with secure key relaying, PQC/ECC hybrid key exchange, redundant key routing, key buffering, multi-tenancy architecture
Key Delivery Interface	ETSI GS QKD 004, 014, 020; SKIP, with SNMPv3 extensions
Secure Key Handover	Mutual TLS (mTLS) with PKI or PSK
Remote Management Interfaces	NETCONF, RESTCONF, SNMP, CLI
Centralised Network Management	Web-based management via Falqon Domain Controller

Environmental and Physical Parameters

	Connectivity Hub - CH5000	QKD Node - QN5000
Form Factor	13 U to 34 U*	2 U
Dimensions	Varies by configuration	19 inch x 60 cm
Interfaces	2N x simplex fiber 4 × 1 Gpbs Ethernet Ports 1 × 100 Mpbs serial port 3 x USB	2, 3, 4 or 6 x simplex fiber* 4 × 1 Gpbs Ethernet Ports 1 × 100 Mpbs serial port 1 x USB
Power Supply	1+1 redundant power supply 1400 W, 100-240 VAC	1+1 redundant power supply 110 W, 100-240 VAC or 36-72 VDC
Cooling	2+1 redundant hot-swappable	2+1 redundant hot-swappable
Temperature Range	5°C – 35°C	5°C – 40°C

**Depending on configuration.*

RoHS COMPLIANT

Falqon

Your Partner in Quantum Security

Falqon Systems is a leader in quantum communication technology, based in Delft, The Netherlands. We provide cutting-edge solutions and expert support to ensure your data security.

Trusted by

Port of Rotterdam · eurofiber · Belnet · SURF · RINIS · WALTON Institute for Information and Communication Systems Science · EuroQCI · QIA Quantum Internet Alliance · QuIC European Quantum Industry Consortium · IQBN

Contact us to learn how the Falqon MDI-QKD Series can protect your organization from data breaches, quantum threats and future-proof your network security.

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