

# KATIM



## KATIM GATEWAY 9001-R

**ULTRA - SECURE ENCRYPTION FOR MOST DEMANDING ENVIRONMENTS**



Organisations interested in protecting data in transit are faced with the challenge of Quantum Computing. Based on latest research, it is predicted that traditional cryptographic algorithms relying on factorization of large numbers, or the discrete logarithm problem are vulnerable to attacks that are more practical to execute with Quantum Computers. The most capable global threat actors are expected to have such capabilities in near future.

KATIM Gateway 9001-R has been designed from the ground up to mitigate these risks. The field-upgradeable platform integrates post-quantum resistant cryptographic primitives with a modern tunnelling protocol for protecting data in transit. Full lifecycle tamper detection and response ensures integrity of the hardware while management access is secured with enforced segregation of duties with hardware-based multi-factor authentication.

KATIM Gateway 9001-R device can be used in most demanding environments including in-motion deployments, being ideal for protecting data in transit in the widest variety of networks requiring a ruggedized solution.

Hardware-based, QoS-aware, cryptographic implementation ensures excellent user experience for video and voice applications, even in parallel to bulk transfers. QoS-aware encryption planes isolate traffic in different classes of service to eliminate impact of congestion in transit network to higher priority encrypted traffic. In addition to point-to-point connections, meshed or hub/spoke deployment architectures are supported.



## KEY BENEFITS

Purpose-designed to deliver network encryption for most demanding environments and in-motion deployments. Fully ruggedized, next-generation, high-performance platform with a full lifecycle tamper detection / response.

Unparallel deployment flexibility in a single device:

- L2 or L3 encryption
- Up to 1 Gbps cryptographic capacity options
- 10 / 100 / 1000BASE-T copper
- 1000BASE-SX / LX / EX fibre

Red / crypto / black separation for reduced attack surface to sensitive data from external interfaces.

Custom-designed and hardened peer authentication, key exchange and data tunnelling protocol to mitigate many classes of vulnerabilities by design.

Standards-based or national ciphers to secure your data and key exchanges in post-quantum world.

Software-programmability for crypto, security, management, networking to protect your investment for years post the initial deployment.

Application- and QoS-aware in-transit protection delivers ultimate user experience by minimizing impact of traffic shaping and loss in a cipher network.

KATIM Gateway OS powered and KATIM Gateway Network Management Suite managed for operational simplicity, functional parity and full interoperability in mixed KATIM Gateway product deployments.

# SPECIFICATIONS

## CRYPTOGRAPHY AND SECURITY

### CRYPTOGRAPHY

- Standards-based or national Crypto Suite
- Post-quantum resistant primitives
- 512-bit or stronger keys for elliptic curves and 256-bit symmetric keys for 256-bit security
- Up to 1 Gbps bi-directional encryption capacity

### IN-TRANSIT DATA PROTECTION

- L2 or L3 VPN overlay with full tunnelling
- P2P and (M)P2MP hub-and-spoke or mesh topologies
- Authenticated key exchange
- Dual-layer asymmetric handshake leveraging both classical and post-quantum cryptography
- Frequent re-handshake with ephemeral keys for enhanced post-compromise security
- Per-packet confidentiality and integrity protection
- Aggressive, customizable key ratcheting of tunnel-specific data plane encryption keys
- Peer identity protection
- Optional, secure bypass for traffic not requiring encryption

### KEY MANAGEMENT

- KATIM Gateway Customizer application for key management
- In-device generated, non-exportable peer authentication private keys
- Ephemeral keys generated for each handshake
- QRNG and non-deterministic, hardware-based random number generators from multiple vendors

### TAMPER-PROOF, SECURE DESIGN

- Battery backed tamper detection and response for full device lifecycle. Multiple layers of mechanical, temperature and anti-drill sensors.
- HW designed for FIPS 140-3 Level 4 compliance
- Hardware protected root of trust, encrypted non-volatile storage and secure boot

## MANAGEMENT

### LOCAL & REMOTE MANAGEMENT

- Local management using USB or a plain I/O port
- In-band remote management
- SSH, SFTP, SNMPv3, rSysLog, TLS1.3, authenticated NTP
- Role-based access control with enforced multi-factor authentication using USB tokens
- KATIM Gateway Network Management Suite applications for off-line and on-line management

## NETWORKING

### DATA PLANE

- Cipher and plain ports for copper or optical
  - 10/100BASE-T/1000Base-TX RJ-45, or
  - 1000BASE-SX, LX and EX SFP
- Plain/cipher: untagged 802.3 Ethernet II or single VLAN tagged 802.1Q/p Ethernet
- Jumbo frames up to 9216 bytes
- ARP, GARP, ICMP, unknown MAC learning
- Policy-based forwarding/routing, static routing and dynamic routing with OSPFv2
- Ingress replication on plain interfaces for broadcast and multicast

### QUALITY OF SERVICE

- Up to 8 QoS-aware encryption planes for each gateway-to-gateway association with independent encryption keys deliver best voice/video/data end-to-end QoS in a presence of cipher network failure/discards
- User-configurable or automatic mapping of plain traffic to QoS-aware encryption planes
- Internal classes of service with configurable mapping ensure optimized latency and deliver discard priority on congestion within the KATIM Gateway

## OTHER

### DIMENSIONS

190 mm (W) x 290 mm (D) x 44 mm (H)

Weight

3.5kg target

### POWER AND COOLING

DC 12/24/48V ruggedized power input

Optional ruggedized external power supply

Passive cooling

### OPERATING ENVIRONMENTAL

Temperature: -40°C - +60°C

Humidity: up-to 95% non-condensing

Altitude: 0m - 12000m

### STORAGE ENVIRONMENTAL

Temperature: -40°C - +85°C

Humidity: up-to 95% non-condensing

Altitude: 0m - 12000m

### OTHER

MIL-STD Rain, Sand/Dust, Shock, Vibration,

Drop, EMI/EMC protection

RoHS, EN62368-1

# KATIM

KATIM is a leader in developing innovative secure communication products and solutions for governments and businesses. As an integral part of the Electronic Warfare & Cyber Technologies cluster at EDGE, one of the world's most distinguished advanced technology groups, KATIM stands as a beacon of trust in an ever-evolving landscape where cyber risks are a constant menace.

Our aim is to satisfy the growing demand for advanced cyber capabilities by delivering resilient, secure, end-to-end solutions across four fundamental business units: Networks, Ultra Secure Mobile Devices, Applications, and Satellite Communications.

With a global presence spanning from our headquarters in Abu Dhabi to offices in the UAE and Finland, KATIM empowers organisations worldwide with the unwavering assurance that their mission-critical information and communications remain private and secure, no matter the circumstance.

For more information, visit [KATIM.com](https://www.katim.com)

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