KATIM Gateway 9011

THE BACKBONE OF
ULTRA-SECURE COMMUNICATION

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 factorisation 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 9011 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.

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.

With capacity options of 1/4/10 Gbps, and support for L2 or L3 tunnelling, the unit is ideal for protecting data in transit in the widest variety of networks. In addition to point-to-point connections, meshed or hub/spoke deployment architectures are supported.

KEY BENEFITS ─

Next generation high performance hardware platform with a full lifecycle tamper detection / response.

Unparallel deployment flexibility in a single device:
- L2 or L3 encryption
- 1/4/10 Gbps cryptographic capacity options
- 100/1000/10GBASE-T copper
- 1GE/10GE SR/LR(/ER) fiber

Integrated data diode ports enable hardware-enforced uni-directional secure data transfers between networks with incompatible security policies.

Three-level physical red / white / black isolation for reduced attack surface to sensitive data from external interfaces.

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

Standards-based or custom national cryptographic algorithms 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 custom national Crypto
- Post-quantum resistant primitives
- 512-bit or stronger keys for elliptic curves and 256-bit symmetric keys for 256-bit security
- 1/4/10 Gbps bi-directional cryptographic capacity

KEY MANAGEMENT
- Non-deterministic hardware-based random number generators from multiple vendors
- In-device generated non-exportable peer authentication private keys
- Ephemeral keys generated for each handshake
- KATIM® Gateway NMS Customizer application orchestrates key generation and certificate signing

IN-TRANSIT DATA PROTECTION
- L2 or L3 VPN for up to 500 KATIM® Gateways in point-to-point and/or mesh configurations
- 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, customisable key ratcheting of per encryption tunnel keys
- Peer identity protection
- Secure bypass for traffic not requiring encryption

TAMPER-PROOF, SECURE DESIGN
- HW designed for FIPS 140-2 Level 4 compliance
- Strict red/crypto/black separation in HW
- Multiple layers of mechanical, temperature and anti-drill mesh sensors.
- Always-on, battery-backed tamper detection and response
- Hardware protected root of trust, encrypted non-volatile memory and secure boot

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MANAGEMENT

Local & remote management
- Local management using RS-232
- 100/1000BASE-T IPv4 remote management
- SSH, SNMPv3, rSysLog, TLS, secure NTP, SFTP
- Role-based access control with enforced multi-factor authentication using USB tokens
- DDoS protection for management traffic
- KATIM® Gateway Network Management Suite applications for offline management and future on-line management

NETWORKING

DATA PLANE
- Four cipher and plain SFP+ ports for pluggable copper or optical transceivers
  - 100/1000Base-T/10GBASE-T
  - 1GE/10GE SR, LR and ER
- Untagged 802.3 Ethernet II or single VLAN tagged 802.1Q/p Ethernet traffic on plain and cipher
- VLAN translation on plain/cipher
- Jumbo frames up to 9216 bytes
- MAC learning, ARP, GARP, ICMP, ICMP Path MTU discovery
- Policy-based forwarding/routing, static routing and dynamic routing (future)
- Ingress replication on plain interfaces for broadcast and multicast
- Integrated data diode

QUALITY OF SERVICE
- Up to 8 QoS-aware encryption planes for each gateway to gateway association with independent encryption keys for true voice/video/data end-to-end QoS
- User-configurable or automatic mapping of plain traffic to QoS-aware encryption planes
- Four internal classes of service for user traffic to ensure ultra-low latency and discard priority on congestion within the KATIM® Gateway
- QoS remarking on plain/cipher

OTHER
- **Dimensions**
  - 2RU, 19" rack mountable
  - 483 mm (W) x 401 mm (D) x 88.2 mm (H)
- **Power**
  - Two 100-230 VAC 50-60Hz AC-Power supplies – redundant and hot-swappable
- **Weight:**
  - 22 kg
- **Tamper-protected, field-replaceable fan and battery unit: 3 redundant fans and 38Ah 3.6V LTC battery for transport and storage security**
- **ETSI EN 300 019-1a-3 V2.3.2 Class 3.1 temperature-controlled environments**
  - Operating temperature: 0°C - 50°C
  - Storage temperature: -20°C - 70°C
  - Humidity: 5%-85% (non-condensing)

Note: Information and specifications are subject to change without prior notice. See latest KATIM Gateway OS Release notes for details.