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Connection Protection Detection

DATA ASSURANCE – Brief Technical Specification

OMNIA's Data Assurance is a zero-trust, multi-layer encryption and data-protection platform built on Defence-grade high speed E=encryption. It encrypts data in motion across any network while preserving full network performance from 10 Mbps up to 100 Gbps and makes intercepted data unreadable and therefor valueless to cybercriminals.

Area	Technical specification
Encryption scope	Provides zero-trust data security through multi-layer encryption at Layers 2, 3 and 4 for data in motion across any network. Protects traffic between offices, data centres, cloud environments, backup locations and disaster-recovery sites.
Protection model	Makes sensitive business data unreadable to protect against data theft, ransomware and costly breaches. Applies zero-trust principles to data flows across sites, clouds, backup and DR locations.
Technology foundation	Built on Defence-grade Network Encryption / High Speed Encryption technology trusted by governments, defence and Tier-1 enterprises globally.
Transport independence	Transport Independent Mode provides network-layer-independent, protocol-agnostic encryption across Layers 2, 3 and 4, including mixed environments, without redesigning the underlying topology.
Data classification and control	Combines data classification and protection in a single, easy-to-manage platform. Customers retain exclusive control of encryption keys:
Performance	Near-zero latency, full-duplex operation at full line rate and zero performance loss, including in latency-sensitive environments.

Area	Technical specification
	Supports line speeds from 10 Mbps to 100 Gbps across single-port and multi-port appliances and virtual solutions.
Interoperability	Vendor-agnostic interoperability with leading network-equipment vendors across the estate.
Centralised management	Central management of encryptors across single links or highly distributed networks, supporting policy management, monitoring and configuration at scale.
Crypto-agility	Supports customisable encryption with a range of elliptic and custom curves, including customer-specific encryption algorithms. Integrates Quantum Key Distribution (QKD) and Quantum Random Number Generation (QRNG).
OMNIA integration	Integrates seamlessly with OMNIA modular components
Certifications and assurance	Technologies have been tested and certified to FIPS 140-2 Level 3, Common Criteria EAL2+ and EAL4+, NATO “Restricted” classification and DISA UC APL.

Deployment Context

OMNIA Data Assurance can secure data in motion across network layers and protocols, including data travelling between sites, data centres and cloud environments. Unlike perimeter-focused firewall and DLP controls, it encrypts data across these paths so intercepted or stolen data remains unusable.

The technology is preferred by financial institutions, telcos, critical-infrastructure providers and governments in more than 35 countries. It is designed to maintain maximum uptime in demanding environments, including trading, live video, SCADA and healthcare imaging.

Reference Use Cases

- National-government communications requiring end-to-end encryption without decrypting and re-encrypting traffic in transit.
- Live video feeds for border-agency monitoring and evidence capture without latency or glitches.
- Financial-services connectivity supporting SOX and PCI-DSS compliance, low-latency trading, real-time transactions and big-data analytics.
- SCADA traffic and real-time signalling for energy-distribution environments.
- High-resolution medical imaging and patient-data transfers between healthcare sites.
- FIPS-certified voice, video and data communications for law-enforcement CJIS traffic.
- Intellectual-property and customer-design protection between manufacturing plants and partners.