

MULTI-SPEED
MULTI-PROTOCOL
ENCRYPTION
CN1000 SERIES

Introducing Senetas CN1000 Series Encryptors - scalable, efficient data encryption for high-speed network security without compromise.

It is often assumed that data networks are inherently safe. They are not. Data networks are vulnerable to security breaches. To be protected from a data network breach, cyber-attack or innocent routing error, your data must be encrypted. Only when encrypted can data be safe - rendering it useless to unauthorised parties.

Senetas high-speed data network encryptors are intentionally certified by independent testing authorities to protect your data while in motion. It's why Senetas encryptors are used by governments and defence forces in more than 25 countries!

THE CN1000 SERIES

When speed and protocol flexibility and multiple certifications are required, the CN1000 encryptors are an optimal choice. Purpose built for Ethernet, SONET, Fibre Channel, Link and ATM networks, the CN1000 series hold all three leading certifications:

- > FIPS, Common Criteria and CAPS

Their flexibility also enables simple future integration with existing encryptors, maximising your investment benefits.

ETHERNET SERVICES

Our CN1000 series platforms provide highly secure, full line rate transparent encryption for data moving across both dark fibre and metro, or wide area Ethernet networks in point-point, hub & spoke, or any meshed environment.

The intrinsic key generation and distribution capability in our CN1000 Encryptors removes reliance on external key servers, providing a robust, fault-tolerant security architecture. The rugged tamper-resistant chassis also gives uncompromising protection to key material held in the Encryptor.

Full interoperability with the Senetas CN & CS series of encryptors means customers may standardise on one platform to secure data in motion across large hub and spoke or meshed networks, between locations.

FIBRE CHANNEL SERVICES

Providing highly secure, full line rate data encryption, our platforms are also the ideal solution for securing Storage Area Networks (SAN's) at 1, 2 or 4 Gbps.

SONET SERVICES

The CN1000 Series also supports SONET and is designed to secure synchronous optical networks at 10Gbps.

The CN "SONET" integrates transparently into SONET network architectures and provides protocol transport encryption with extremely low latency. Both path and line encryption are supported, providing completely confidential data transmission across optic fibre.

NETWORK AND MANAGEMENT

Each of the CN1000 encryptor products are configured and managed using Senetas CM7 – a purpose built software tool that makes managing your organisation's encryption simple and safe.

The local (protected) and network (unprotected) connections are made via SFP, BNC, SC, X.21 or RJ45 interfaces. Management connections are via a standard RJ45 port on each device's front panel, and in addition a Command Line Interface connection is available via a 9-pin D-sub RS232 serial connector.

CERTIFICATIONS*

Government and commercial customers benefit from the Senetas CN1000 series independent testing authority certifications.

- > Common Criteria
- > FIPS
- > CAPS

*Refer to detailed certification information at www.senetas.com

What makes Senetas encryptors stand out? Security without compromise.

PERFORMANCE

The “designed-in” market-leading performance capabilities make Senetas encryptors stand out. They not only stand out, they win competitive performance tests! Among them, they hold all three major international, independent government testing authority certifications. That’s testament to outstanding performance. Ideally suited to demanding environments, they are preferred by many of the world’s most secure organisations.

NEAR-ZERO LATENCY

Senetas high-speed encryptors are high-performance, operating in full-duplex mode at full speed without loss of packets. Latency is not affected by packet size (approx. 4 microseconds per unit at 10Gbps) – meaning maximum throughput with zero protocol overhead. Importantly, by using Field Programmable Gate Array (FPGA) technology, this outstanding latency performance is predictable and dependable.

FLEXIBILITY

Senetas encryptors’ use of FPGA technology enables maximum operational flexibility. They better meet customers’ specific and unique requirements and provide an optimised high-speed data encryption solution. This multi-purpose flexibility enables on-going operational simplicity, such as in-field upgradability, as customers’ requirements change – protecting their investment.

TRUSTED ASSURANCE

Because Senetas encryptors include the world’s only triple-certified products of their types, they are trusted by governments and defence forces around the world. This exhaustive and rigorous testing over many years provides our government and commercial customers with maximum assurance. Certified CN encryptors provide the assurance of the three leading international, independent government testing authorities: FIPS, CAPS and Common Criteria.

COMPREHENSIVE RANGE

The CN range of Layer 2 encryptors provides the widest feature-set able to operate at 10Mbps to 10Gbps and are able to support Ethernet, Fibre Channel; SONET/SDH and LINK protocols.

INTEROPERABILITY

Senetas encryptors that support the same protocol are fully interoperable. Locations with minimal needs using CS units can interoperate with fully featured CN units at a larger central site.

EASY TO INSTALL

The ‘Bump in the Wire’ design of Senetas encryptors makes them easy to install. Simply place the encryptor at the access point to the Layer 2 network and all data passing through the unit is encrypted using an AES 256 bit encryption algorithm.

SIMPLICITY

“Set and forget” and transparency are underlying Senetas design themes. They help ensure simplicity of implementation, operation and management. That simplicity continues with an intuitive user interface providing meaningful descriptive diagnostics – such as early warnings and simple fault-finding. They just do their job – with minimal resource requirements.

LOW IMPACT

The low impact of Senetas encryptors is not limited to network bandwidth and speed. It extends to network operations and management. They simply “fit in” within the user network. They don’t require changes to other devices or network reorganisation. Minimal impact makes Senetas encryptors a favourite among network engineers - they don’t add load to network operations or management.

RELIABILITY

Senetas encryptors are designed, developed and manufactured in Australia to exacting standards. In addition to the high levels of security, the encryptors conform to international requirements for safety and environment, as well as providing dependable 99.999% uptime.

LOCAL OR CENTRALISED MANAGEMENT

Configuration can be performed locally or remotely through the intuitive CM7 management software, which acts as the Certificate Authority in a network of encryptors by signing and distributing X.509 certificates.

CN1000 SERIES ENCRYPTORS AT-A-GLANCE:

Model	CN1000				
	Ethernet	Fibre Channel	SONET/SDH	E1/T1	ATM
Protocol					
Speed	1Gbps	1,2,4 Gbps	2Gbps (OC-48)	2/1.5 Mbps	622 Mbps
Protocol and application transparent	✓	✓	✓	✓	✓
Common Criteria certified	✓	✓	✓	✓	✓
FIPS certified	✓	✓	✓	✓	✓
CAPS certified	✓	N/A	N/A	N/A	N/A
Low overhead full duplex line-rate encryption	✓	✓	✓	✓	✓
Ultra low latency for high performance	✓	✓	✓	N/A	✓
Support for external (X.509v3) CAs	✓	✓	✓	N/A	N/A
Robust AES encryption algorithm	✓	✓	✓	✓	✓
CRL and OCSP server support	✓	✓	✓	N/A	N/A
Automatic key management	✓	✓	✓	✓	✓
Flexible encryption policy engine	✓	✓	✓	✓	✓
Encrypts Unicast, Multicast and Broadcast traffic	✓	N/A	N/A	N/A	N/A
Policy based on MAC address or VLAN ID	✓	N/A	N/A	N/A	N/A
Support for Jumbo frames	✓	N/A	N/A	N/A	N/A
Self healing key management in the event of network outages	✓	N/A	N/A	N/A	N/A
Per packet confidentiality and integrity with AES-GCM encryption*	✓	N/A	N/A	N/A	N/A
Fibre Channel point-point encryption	N/A	✓	N/A	N/A	N/A
Smart network discovery and automatic connection establishment	✓	✓	✓	✓	✓
Centralised configuration and management using CM7	✓	✓	✓	CM6	CM6
Remote management using SNMPv3 (inband and out-of-band)	✓	✓	✓	N/A	✓
FPGA based cut-through architecture	✓	✓	✓	N/A	✓
Tamper resistant and evident enclosure	✓	✓	✓	✓	✓
Fully interoperable with related CN/CS models	✓	✓	✓	N/A	N/A

YOUR ASSURANCE

- > Government and defence-grade assurance certified.
- > Among CN series encryptors, certification includes FIPS (USA), CAPS (UK) and Common Criteria (International and Australia).
- > No-compromise certified performance provides exceptional assurance, network performance and peace of mind.

WHY SENETAS CN1000 SERIES ENCRYPTORS?

- > No-compromise performance:
 - Near-zero latency
 - Maximum bandwidth
 - Minimum overhead
 - Scalable and flexible
 - Simple to manage
 - Reliability
 - Maximum availabilities
- > Secure transmission of data through Layer 2 networks.
- > Defence-grade and ultra reliable 99.999% up-time data network security.
- > Senetas high-speed encryptor technology is used by governments, defence forces and commercial organisations in more than 25 countries.

For full details of encryptor models' complete features and specifications see www.senetas.com

*Pending firmware release

PRODUCT-SPECIFIC FEATURES

CN1000 ATM Encryptor

Providing maximum security within Asynchronous Transfer Mode networks. The system can be ordered at speeds of 1.5Mbps (T1), 2Mbps (E1), 34Mbps (E3), 44Mbps (DS3), 155Mbps (OC-3) and 622Mbps (OC-12), and offers full duplex communications in all modes, without loss of frames. SONET frame size is fixed but varies, based on line speed.

- > Full duplex line-rate encryption at up to 622Mbps
- > Supports Permanent Virtual Paths and Circuits
- > Provides standards-based certificates and key management
- > Network connections via pre-configured electrical or optical (OC-3, OC-12) interfaces
- > Supported Networks: SONET OC-192 SDH STM-64 Line mode Path mode
- > Latency of 20 Microseconds max
- > Size: 435mm, 42mm (1U), 380mm (WxHxD)
- > 19" rack mountable
- > Weight: 6kg
- > 0° to 50°C operating temperature
- > 0 to 80% RH at 50°C operating
- > Power requirements: 100-240 VAC / 47-63 Hertz 60 watts

CN1000 Ethernet Encryptor

Providing maximum security within modern Ethernet networks. The system can be used to secure point-to-point links, or used in a meshed network of up to 509 interoperable units. The unit operates in full-duplex mode at full line speed. Latency is not affected by packet size and is less than 7 microseconds per unit at 1Gbps. Configurable at speeds of 10Mbps, 100Mbps, and 1Gbps, and supports the Layer 2 protocol in point to point or multipoint topologies.

- > Full duplex line-rate encryption at up to 1Gbps
- > Ultra low latency cut-through architecture
- > Operates over point-point or meshed topologies
- > Fully compatible with service provider Ethernet services (MEF, VPLS)
- > Flexible encryption policy
- > Encrypts unicast, multicast and broadcast traffic
- > Provides per VLAN cryptographic separation
- > Per packet confidentiality and integrity using AES-GCM mode
- > Automatic key management
- > Certificate revocation; OCSP, CRL
- > Comprehensive alarm and event reporting
- > Secure remote management using SNMPv3
- > Network connections via SFP or RJ45 interfaces
- > Interoperable with Senetas CS10, CS100 and CN3000 series Ethernet encryptors
- > Supported Networks: Ethernet II 802.3 Ethernet over MPLS Carrier Ethernet VLAN/MPLS transparency
- > Latency of less than 7 microseconds/unit at 1 Gbps (19 microsec at 100Mbps, 150 microsec at 10Mbps)
- > Size: 435mm, 42mm (1U), 380mm (WxHxD)
- > 19" rack mountable
- > Weight: 5kg
- > 0° to 50°C operating temperature
- > 0 to 80% RH at 50°C operating
- > Power requirements: 90-240 VAC / 47-63 Hertz 60 Watts

CN1000 Fibre Channel Encryptor

Providing security of traffic between data centres. The platform is used to secure Storage Area Networks (SAN's) and supports data transfer at 1, 2, or 4 Gbps. Latency is not affected by packet size, and at 4 Gbps is 0.75 microseconds per unit.

- > Full duplex line-rate encryption at 1, 2 or 4 Gbps without packet expansion
- > 1 microsecond latency per device at 4 Gbps
- > Cut-through architecture for minimum latency
- > Supports Single and Multimode optical interfaces
- > Provides standards-based certificates and key management
- > Supported Networks: Direct Fibre links, Links with Fibre repeaters, GFP-T connections, GFP-F connections
- > Size: 435mm (17"), 43mm (1U), 320mm (WxHxD)
- > Weight: 5kg
- > 0° to 50°C operating temperature
- > 0 to 80% RH at 50°C operating
- > Power requirements: 90-240 VAC / 47-63 Hertz 40 Watts

CN1000 LINK Encryptor

Providing maximum security within T1/E1 networks or across protocol independent serial links, the system can operate in full duplex mode, at speeds up to 2.048Mbps without loss of data.

- > Full duplex line-rate encryption at up to 2Mbps
- > Low latency
- > Supports E1, T1 or X.21 interfaces
- > Selective encryption of each timeslot/group of timeslots (E1 T1)
- > Supported Networks: G.703 physical/electrical characteristics of hierarchical digital interfaces, G.704 Synchronous frame structures, Leased lines
- > Size: 435mm (19"), 42mm (1U), 380mm (WxHxD)
- > 19" rack mountable
- > Weight: 6kg
- > 0° to 50°C operating temperature
- > 0 to 80% RH at 50°C operating
- > Power requirements: 90–240 VAC / 47–63 Hertz 25 Watts

CN1000 SONET Encryptor

Providing maximum security within modern telecommunications networks, the system can be configured at speeds of 155Mbps (OC-3) to 2488.32Mbps (OC-48), and supports both Line and Path mode topologies.

- > Full duplex line-rate encryption at up to 2488.32Mbps
- > Latency of 20 microseconds max.
- > Latency for an OC-48 link is 10 microseconds per unit
- > Supports Line and Path connections
- > Independent multiplexed Path encryption
- > Provides standards-based certificates and key management
- > Supported Networks: SONET OC-3 to OC-48, SDH STM-0 to STM-16, Line mode, Path mode
- > Network connections via pluggable SFP interfaces
- > Size: 435mm (19"), 42mm (1U), 380mm (WxHxD)
- > 19" rack mountable
- > Weight: 6kg
- > 0° to 50°C operating temperature
- > 0 to 80% RH at 50°C operating
- > Power requirements: 100-240VAC, 0.6 A, 50/60 Hertz 37 watts (typical)

TALK TO SENETAS

The optimal specification of Senetas encryptors for your data network is dependent upon many factors, including your IT and data network environments and business needs.

We and our global partners have data security and network technical specialists who can help. We also work with data network providers and systems integrators to specify the best encryption solution for your needs.

Wherever you are, just contact us to discuss your needs. Or, if you prefer, your service provider can contact us on your behalf.

SENETAS CORPORATION LIMITED

ABN 33 006 067 607

Level 1, 11 Queens Road,
Melbourne, VIC, 3004,
Australia

T +61 (03) 9868 4555

F +61 (03) 9821 4899

E info@senetas.com

www.senetas.com