

CEP5 LC

Cost-effective Multi-layer Encryption Appliance

Product Overview

The CEP5 LC is a multi-layer encryption appliance that provides tunnel-less data protection, including Ethernet frame encryption for Layer 2 networks, IP packet encryption for Layer 3 networks, and Layer 4 data payload encryption for IP and MPLS networks. The CEP5 LC offers full-duplex encryption at speeds up to 5 Mbps using the AES-256 algorithm.

The CEP5 LC provides affordable and centrally managed encryption for large numbers of branch offices or edge devices such as ATMs, kiosks, gas pumps, industrial controllers, SCADA and Smart Grid distribution systems. Environmental hardening for enclosed outdoor environments and a very small form factor allow the CEP5 LC to be deployed at the network edge where encryption was previously difficult to deploy and manage. Furthermore, the CEP5 LC includes an integrated Ethernet switch, so it can switch traffic locally while encrypting traffic to and from the wide area network. This reduces costs by avoiding the need to deploy additional Ethernet switches at the network edge.

The CEP5 uses Group Encryption technology to provide scalable encryption without tunnels allowing multicast, load balancing, disaster recovery and other fundamental full-mesh network capabilities and benefits to operate normally while encryption is enabled and active. Tunnel-less encryption also allows networking and application monitoring and services such as QoS to operating without modification. The CEP5 can be managed centrally from a clientless browser-based interface that provides simple policy management of multi-layer encryption.



FEATURES AND BENEFITS

- Interoperable with Certes CEP product family
- Encrypted throughput up to 5 Mbps
- Seamless scalability
- Infrastructure neutral
- Transparent to network and applications
- Easy installation and management
- Per-frame/packet authentication

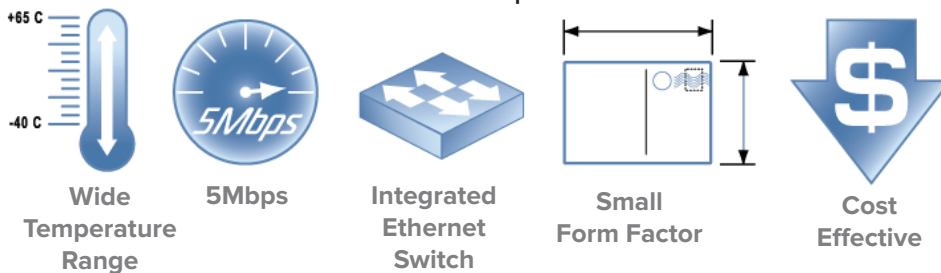
COMPREHENSIVE DATA PROTECTION

- IPsec site-to-site networks
- MPLS meshed networks
- Metro Ethernet and VPLS networks
- Voice and video over IP applications

ABOUT CERTES NETWORKS

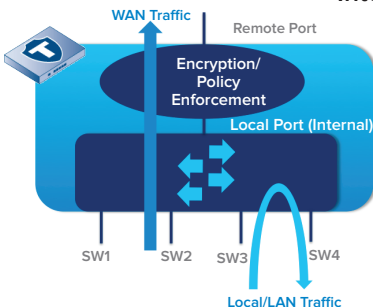
Certes Networks protects data in motion. The company provides advanced data protection solutions for both physical and virtual networks that enable secure connectivity over any infrastructure without compromising performance or availability. Customers rely on Certes Networks to protect data, decrease risk and reduce the cost of compliance by enabling secure connectivity to critical infrastructures.

Product Snapshot



The features of the CEP5 LC make it an affordable solution for small branches, remote terminals, kiosks, ATM machines or any location that requires environmental hardening where remote management helps reduce ongoing management costs and local switching capability helps reduce the number of devices to be managed.

Integrated Ethernet Switch



The diagram to the left illustrates how WAN traffic is passed through the switch and to the policy enforcement engine, while LAN traffic is switched locally, so it doesn't use any CPU cycles.

CEP5 LC Technical Specifications

Performance

- Encrypted throughput: 5.8Mbps (bidirectional)*
- Encrypted latency: 4.9 ms* per hop
- * *Measured with 512 byte packets with L3 encryption enabled. Results depend on packet size and may be affected by policy and key updates or other management activity.*

Security

- Encryption: AES-CBC (256 bit) (FIPS 197), Triple-DES-CBC (168 bit) (NIST 800-67)
- Authentication (Message Integrity): HMAC-SHA-1-96, HMAC-SHA-256-96 (FIPS 180-3, FIPS 198)
- Signature generation and verification: ANSI X9.31, RSASSA-PS, RSASSA-PKCS v1.5, DSA FIPS 186-2
- Management session authentication: RSA, DSS
- Automatic or manually triggered hitless key rotation
- Group keying with TrustNet Manager SSL/TLS (bilateral authentication) based on certificates
- Certificate revocation: OCSP (RFC 2560), CRL (RFC 5280)
- IPsec (RFC 2401) for Layer 3 encryption

Network Support

- Ethernet
- VLAN tag preservation
- MPLS tag preservation
- IPv4
- IPv6 (Layer 2 Ethernet encryption mode)
- Secure NTP

Policy Selector Options

- Source or destination IP address
- Source or destination port number
- Protocol ID (L3 and L4 options)
- VLAN ID (L2 option)
- Multicast address

Transforms

- Certes Networks ESP Tunnel Mode (header preservation option)
- Certes Networks ESP Transport Mode (L4 option)
- Certes Networks Ethernet ESP Mode

Management Communication Security Options

- X.509 v3 digital certificates
- TLS (full bilateral authentication)
- SSH

Indicators

- Power LED

Device Management

- TrustNet Manager
- Command Line Interface
- Out-of-band management
- SNMPv2c and SNMPv3 managed object support
- Alarm condition detection and reporting (traps and SNMP alarm table)
- Syslog support
- Audit Log

Environmental

- Operational: temperature -40°C to +65°C (-40°F to 149°F) (fanless); humidity up to 95% relative humidity (non-condensing)
- Cold start: temperature -20°C

Regulatory

- Safety: EN 60950 (TUV), UL/CSA 60950
- Emissions: FCC Part 15 Class A
- Immunity : EN55024, EN61000
- Environmental : WEEE, RoHS

Physical

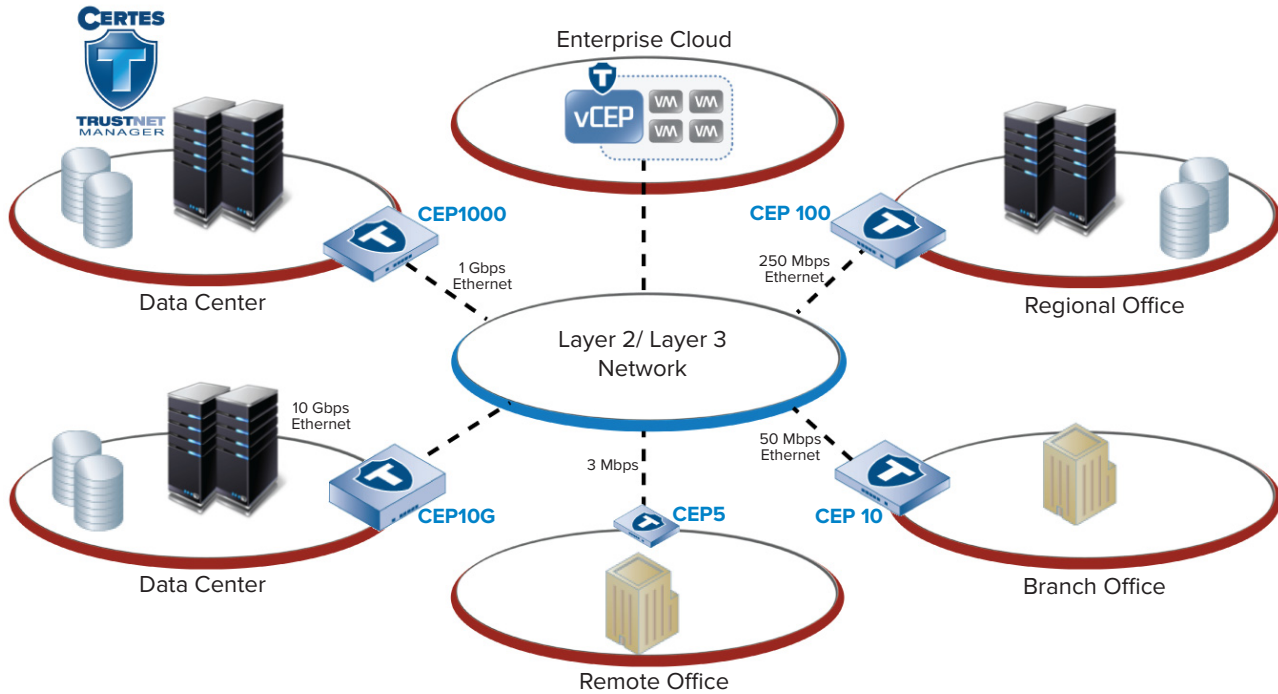
- Small form factor chassis
- Dimensions: 4 in x 5.25 in x 1 in (102 mm x 134 mm x 26 mm)
- Desktop or wall-mount with optional rack mount kit available for one or two units in a standard 19 inch rack
- External AC power adapter: input 100-240V AC @ 0.8A, 50/60 Hz; output 24V DC, 1000mA
- Power consumption: 7W at maximum load
- Weight: desktop: 1.08 lbs (including external AC adapter)
- MTBF: CEP5 LC 832, 200 hours; AC power adapter 50,000 hours

Interfaces

- Four 10/100/1000 RJ45 locally switched network interfaces to the local (trusted) network
- One 10/100/1000 RJ45 network interface to the remote (untrusted) network
- Integrated four-port Ethernet switch
- Auto MDI/X (straight or crossover correction)
- One DB9 RS232C asynchronous serial port (male)

Certes TrustNet Solution

The CEP5 LC is a fully interoperable part of the Certes Networks family of products. In combination with Certes TrustNet Manager and the full line of CEP encryption appliances, organizations can ensure complete data protection across their entire network regardless of scale, scope or technology.



Scalable and Secure Group Encryption

The CEP5 LC uses Certes Networks’ web-based management platform, Certes TrustNet Manager™, to securely generate and distribute group keys to authorized endpoints. By avoiding the use of IPsec tunnels, group encryption greatly reduces deployment complexity and provides fully meshed encryption that is easy to manage. The solution is also compatible with load balancing, highly available network designs, QoS and network monitoring tools.

Ethernet Frame Encryption

The CEP5 LC is compatible with all Layer 2 unicast, multicast, point-to-point, and multipoint-to-multipoint topologies. Encryption policies can be based on VLAN ID’s for cryptographic segmentation of data, or can be set to encrypt all Ethernet frames.

Persistent authentication of frames ensures that the data received at the remote end of a connection originated from a trusted source. While encryption directly protects data, without authentication data streams remain vulnerable to modification from man in the middle attacks. Unlike many encryption solutions, the CEP5 LC provides continuous authentication to ensure the integrity of the data. Without both encryption and authentication, the network and data are less than secure.

IP Packet Encryption

Using the IP Security (IPsec) protocol, the CEP5 LC provides full data encryption for Layer 3 IP networks. The CEP5 LC utilizes the IPsec-standard Encapsulating Security Payload (ESP) field to encrypt the IP packet, while preserving the original IP header. This unique functionality maintains network transparency, while providing maximum data protection. By preserving the original IP header, the CEP5 LC can protect data over any IP infrastructure including multi-carrier, load-balanced, and high availability networks.

Payload Only Encryption

In addition to standard IPsec encryption, which encrypts the Layer 4 header, the CEP5 LC offers a Layer 4 compatible “payload only” encryption option. This unique, patent-pending capability allows network services, such as Netflow/Jflow, and Class of Service (CoS) based traffic shaping, to be maintained through the service provider network while the payload itself is encrypted.

Ordering Information

Part Number	Description
CEP5 LC-AC	Ethernet multi-layer network encryption and authentication appliance - small form factor. Five 10/100/1000 Ethernet interfaces for network connectivity. Includes Ethernet management port cable, DB-9 serial interface cable, and external AC power supply with power cord. TrustNet appliance software license (TRUSTNET-5-FSE) must be ordered separately.
TRUSTNET-5-FSE	TrustNet software and fixed speed encryption (FSE) software license for one CEP5 LC appliance. Includes a software license to enforce multi-layer (L2, L3, L4) encryption and authentication policies on one CEP5 LC appliance. TRUSTNET-5-FSE licenses include one license for TrustNet Manager (TRUSTNET-MGR-SW).
CEP5 LC-RM-1	Rack mount kit for mounting a single CEP5 LC in a single rack unit (1U) within a 19 inch rack.
CEP5 LC-RM-2	Dual rack mount kit for mounting two CEP5 LC units in a single rack unit (1U) within a 19 inch rack.

CEP5 LC Features, Benefits and Value

Feature	Benefit	Value
Cost effective and centrally managed network encryption	Affordable protection for large edge networks where encryption has been historically difficult to deploy	Saves CAPEX and OPEX
Integrated Ethernet switch	Avoids the need for additional switching devices at remote sites	Avoids additional cost per site
Temperature-hardened device with a very small form factor	Outdoor deployments in small enclosed cabinets	Wide range of applications
Remote in-band management	Allows remote management without a separate management network	Simplifies deployment and management
Interoperable with all Certes CEP products	Fits data centers, offices and cloud networks using standards-based IPsec, AES-256 encryption and SHA2 hashing	Fits into a wide range of networks and applications

Information in this brochure is preliminary and subject to change without notice.

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