



## LLEA – Layer 2 Ethernet Encrypter

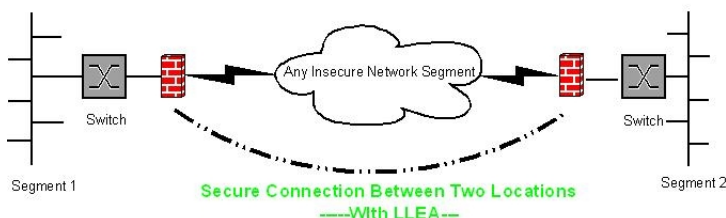
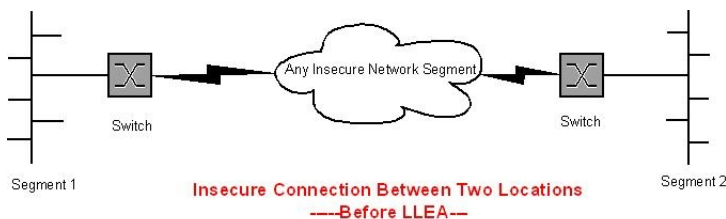


### LLEA

## FEATURES

- 128, 192, or 256 bit AES encryption available
- Throughput at rates above 500 Mbps @ AES128
- FIPS 140-2 Level 1 validated encryption module
- 10/100/1000 BaseT ethernet ports
- Easy configuration or Plug and Play
- Installs in pairs for point-to-point drop in use
- Extensive statistics logging and diagnostic tools
- Tunnels ALL ethernet protocols
- Tunnels multicast traffic
- Tunnels 802.1Q tagged V-Lan trunks
- Ethernet to ethernet encryption
- Links LAN to LAN to bridge sites together
- Use to encrypt high speed microwave links
- Layer 2 – Raw ethernet transport between units
- Compact 1U high: standalone or rack-mount

### - BEFORE -



### - With LLEA-

The LLEA is an Ethernet bridging device that allows two layer-2 network segments to be securely bridged across an insecure network segment.

They are used in pairs to create a point-to-point connection between the layer-2 segments. Network traffic that traverses the the insecure network segment is protected against eavesdropping and tampering. Furthermore, the LLEA devices protect the network segments from malicious packet injection.

The LLEA uses AES encryption and HMAC-SHA1 for data integrity. The Diffie-Hellman algorithm is used for session key establishment. Encryption keys are changed every 6-hours or 2 billion packet, whichever comes first. All cryptographic operations are provided by an embedded FIPS 140-2 Level 1 validated cryptographic module.

The LLEA completely encapsulates the original Ethernet packet for transport across the insecure network segment. To minimize the overhead of encapsulation and encryption, the LLEA will coalesce packets where possible. This reduces the number of small packets that traverse the insecure network often improving the throughput of a slower network link.

The LLEA can transport both standard Ethernet packets and 802.1q tagged VLAN packets. Since packets are encapsulated when transported across the insecure network segment, this has the effect of tunneling 802.1q across a network segment that may not support it. The packets that traverse the insecure network segment will always appear as standard Ethernet packets.

The LLEA requires very little configuration. In fact, it is possible to deploy a pair with no configuration at all. Just place them in-line and turn them on. Typical configuration consists of setting an IP address, a shared secret, and selecting the encryption level. Configuration is web based with a click-for-help hyperlink on every configuration item.

### Applications for the LLEA

- Utility critical infrastructure connections
- Gas and oil production, pipelines
- Retail – Stores, credit card readers
- Law Enforcement – Remote offices
- Medical – Meets HIPAA requirements

# LLEA Encrypted Ethernet Bridge Appliance with Gigabit Ethernet

## SPECIFICATIONS

### General

LLEA – Two Ethernet ports:

- 10/100/1000 BaseT interfaces
- Sustained full duplex throughput of over 500 Mbps @ 128bit AES
- Point to point via raw ethernet

Protocol Features

- AES 128, 192, 256 bit encryption
- Web browser configuration and management from local trusted interface
- Default IP address: 192.168.0.100
- Tunnels multicast packets
- Tunnels all ethernet protocols
- **The LLEA uses an embedded FIPS 140-2 validated cryptographic module (Certificate #918) running on a Linux x86 platform per FIPS 140-2 Implementation Guidance section G.5 guidelines**

### Indicators

Front - Power, Drive Activity, Ethernet 0, Ethernet 1, Overheat

### Controls

Setup

Power

### Physical/Electrical

Power requirements: 100-240 VAC, 300 watts

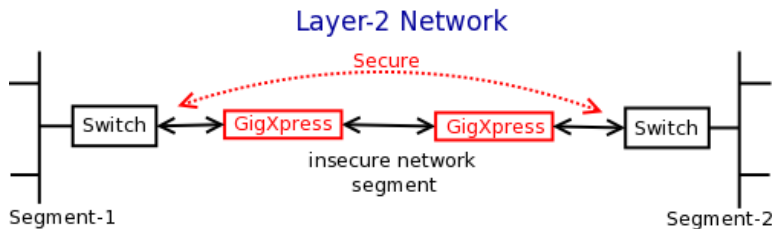
Dimensions: 14 ½" x 16 ¾" x 1 ¾"

15 pounds

### Environmental

- Operating Temperature: 0 to +40 C
- Storage Temperature: -50 to +75 C
- Humidity: <95% Non-condensing

## APPLICATION



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