

## Metro Ethernet Encryption – Swiss Security Solution for Layer-2 Multipoint-Networks.



- **Overhead-free Ethernet encryption from 20 Mbps to 10 Gbps at wire-speed**
- **Built according to Metro Ethernet Forum (MEF) Standards for point-to-point, point-to-multipoint and multipoint-to-multipoint topologies**
- **Protection of Unicast, Multicast and Broadcast traffic**
- **Priority-Bit and VLAN based Class of Service (CoS)**
- **Investment protection due to available feature upgrades**
- **Highly Secure AES 256bit based Encryption**

Companies have long depended on reliable Ethernet technology. The well-known LAN technology has enjoyed a veritable boom in recent years and is now also available with professional, reliable and cost-efficient layer-2 Ethernet services for MAN and WAN environments. That means there is now a scalable and highly flexible alternative available to IP VPN, leased lines, ATM and Frame Relay.

InfoGuard offers a modular and cost-effective encryption solution for the secure transfer of information in Ethernet networks. This approach allows data to be efficiently encrypted in a headquarters network with any number of field offices across modern Metro Ethernet services.

# Metro Ethernet Encryption – Top Performance Layer-2 Encryption with the Swiss Seal of Quality.

In day-to-day business, data transfer over public networks has become *«de rigueur»*. Bandwidths of a few Megabits per second (Mbps) up to 10 Gigabits per second (Gbps) are the order of the day when linking various sites, e.g. computer centers as well as for backup infrastructures. The only reasonable and secure way of protecting yourself against attacks is to encrypt the information. However, you have to do so without jeopardizing performance or increasing latency time in any way. The solution also has to be one that can be integrated without any trouble in the existing infrastructure. InfoGuard Layer-2 encryption meets these requirements perfectly.

## Great Flexibility

Thanks to their modular architecture, the InfoGuard product family can protect all topologies defined by the Metro Ethernet Forum (MEF 6/10) at data rates from 20 Mbps to 10 Gbps. In addition to point-to-point, point-to-multipoint and multipoint-to-multipoint topologies, these products also support various types of traffic such as unicast, multicast and broadcast as well as quality of service.

With the layer-2 approach, all higher-level protocols can be encrypted, thus allowing all network traffic to



revolutionary



secure



reliable

be protected. The speed can be upgraded and the number of peer units and class of service

can be increased on the existing device, which protects your investment in important ways. InfoGuard equipment grows right along with the customer's requirements.

## Trouble-free Operation

Thanks to their bump-in-the-wire design, the units can be integrated without any trouble into existing networks. The layer-2 encryption renders the devices completely transparent in the network and makes them much easier to configure than layer-3 VPN solutions. InfoGuard products are remarkably user friendly. Maintenance is minimal and the operating costs are noticeably lower.

## Maximum Performance, Minimal Latency

With their outstanding performance, i.e. 100% encryption throughput, and their minimal latency in microsecond range, these devices can be used even in time-critical applications and at heavy-load links (see as well chart 'performance comparison' page 3).

## Powerful Data Encryption

All security solutions meet the highest standards and have been developed strictly in accordance with the FIPS 140-2 level 3 requirements. Data encryption is done using the public Advanced Encryption Standard (AES) with a key length of 256 bits. The devices can be administered locally via the internal user interface or a graphical PC user interface or remotely via a secure SSH port.

## High Availability

InfoGuard products have been explicitly designed for longevity. In order to guarantee uninterrupted service at all times, the devices are equipped with a redundant power supply and fans.

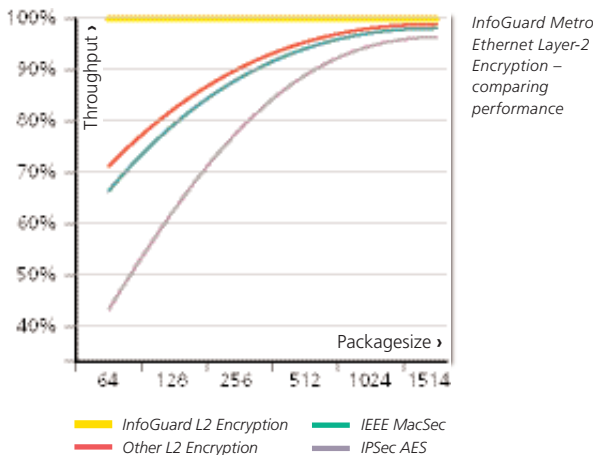
## A Swiss Product

As a Swiss company, we can guarantee the highest quality of our products and absolute independence when implementing our security features. All development and production is done in-house in Switzerland.

## Metro Ethernet Layer-2 Multipoint Encryption – Swiss Security Solution for Multipoint Networks.

It is crucial that the use of encryption devices does not restrict the customer's choice of Ethernet services or network architecture.

InfoGuard EGM, EG1M and EG10M gives the customer full discretion in selecting the Ethernet service, the topology and the service level agreement. This freedom is ensured by our consistent implementation of the topologies defined by the Metro Ethernet Forum (MEF) as well as our support of class of service, VLAN IDs and Q-in-Q taggings.



### Point-to-multipoint

With a point-to-multipoint (hub and spoke) topology, companies can control and monitor network traffic centrally. One important advantage this approach has over a point-to-point connection is economical operation, because the number of required service access points and encryption devices can be reduced. A typical application example for hub and spoke would be the linking of regional or national branches and field offices to their headquarters.

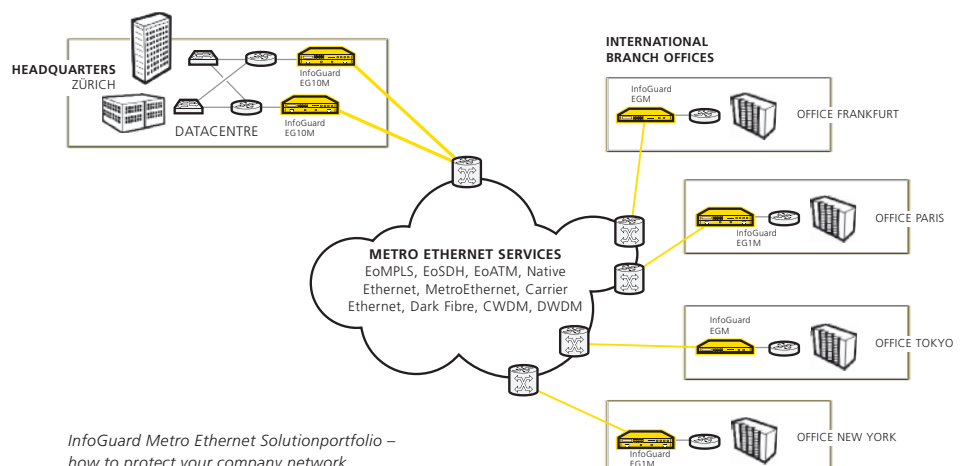
### Multipoint-to-multipoint

A company may have requirements that necessitate the use of a multipoint-to-multipoint (fully-meshed) topology, where every site can communicate directly with every other site. The advantages of an 'any-to-any' configuration are network simplicity, direct communication lines to partners with no detours and the resulting increase in performance. The implementation of Voice over IP (VoIP) or multimedia applications within a company is a possible and reasonable application for a fully meshed topology.

The encryption devices can be used in point-to-point, point-to-multipoint or multipoint-to-multipoint topologies depending on customer needs:




### Point-to-point

Point-to-point connections play an important role even within Ethernet services. This topology often replaces outdated legacy technologies such as leased lines, ATM or Frame Relay. A typical example of a point-to-point connection is an international line marketed as an «Ethernet Private Line».



InfoGuard Metro Ethernet Solutionportfolio – how to protect your company network

# InfoGuard EGM / EG1M / EG10M – Metro Ethernet Encryption

<b>Application scenarios</b>			
Network topologies	Point-to-point, Point-to-multipoint, Multipoint-to-multipoint		
Networks	Ethernet over MPLS (EoMPLS), Ethernet over SDH/SONET (EoSDH), Native Ethernet, Metro Ethernet, VPWS, VPLS, Darkfibre and WDM		
MEF topologies	Ethernet Private Line (EPL), Ethernet Virtual Private Line (EVPL), Ethernet Private LAN (EPLAN), Ethernet Virtual Private LAN (EVPLAN)		
Traffic Types	Unicast, Multicast, Broadcast		
<b>Security</b>			
Encryption algorithm	AES		
Key length	256 Bit (optional 128 Bit)		
Communication key	<ul style="list-style-type: none"> <li>· Separate session key per peer</li> <li>· Automatic key change every 1 to 15 minutes</li> </ul>		
Access protection	<ul style="list-style-type: none"> <li>· Tamper-proof hardware design</li> <li>· Password protection, identity-based operator authentication</li> <li>· Block/unblock function and emergency clear</li> </ul>		
<b>Management</b>			
Key entry	<ul style="list-style-type: none"> <li>· Automatic key generation by the device (with true random generator)</li> <li>· Manual key input via user interface</li> </ul>		
Management features	<ul style="list-style-type: none"> <li>· Secure Remote Management (SSH v2 CLI)</li> <li>· Inter Unit Management for secure transfer of the master key</li> <li>· Security Card for secure saving of configuration and backups</li> <li>· Local management via keypad and display or via browser-based user interface</li> <li>· Network monitoring via SNMP</li> <li>· Eventlog and Syslog</li> </ul>		
<b>Hardware</b>			
			
	InfoGuard EGM	InfoGuard EG1M	InfoGuard EG10M
Line rate	≤ 20 Mbps / ≤ 100 Mbps	≤ 200 Mbps / ≤ 1 Gbps	≤ 2 Gbps / ≤ 10 Gbps
Peer units/Device	2 / 99	2 / 99	2 / 99 / 256
Quality of Service	Supports 802.1q VLAN (Q-in-Q) and 802.1p (1-4 classes)		
Communication Interface	Interface IEEE802.3 Standard Interface IEEE802.3 Standard		
	100BASE-TX RJ45	100BASE-SX,-LX,-ZX,-T	100BASE-SX,-LX,-ZX,-T
	100BASE-SX w/ LC connector	SFP-Modul w/ LC connector	XFP-Modul w/ LC connector
Latency	< 150 µs	< 30 µs	< 5 µs
Management Interface	Ethernet 10BASE-T/100BASE-TX RJ45 (Management), Serial RS-232 RJ45 (Diagnostics)		
	RJ45 Alarm Relay (Active or Non-Active Alarm Indication)		
Test facilities	Built-in self-test (BITE), diagnostics (BITE), transparent mode		
Quality system	ISO 9001:2000		
Conformity	CE (European Conformity)		
Compliance	Designed according to FIPS 140-2 level-3 requirements		
EMC	EN 55022 Cl B und EN 55024 nach 89/336/EEC-Richtlinie		
Safety	EN 55022 Cl B and EN 55024 according to 89/336/EEC Directive		
Power supply	Dual power supply, hot-pluggable (AC/AC)		
	AC 230 VAC nominal 100 V – 240 V/50 ... 60 Hz (+/-10%)		
max. power cons.	50W	100W	100W
Operating temp.	0° C ... +50° C		
Storage temp.	-25° C ... +70° C		
Relative humidity	5% ... 95%		
Cooling	2 fans, redundant, hot-pluggable	6 fans, redundant, hot-pluggable	6 fans, redundant, hot-pluggable
Dimensions	19" rack-mounting, 1 unit 444 x 44 x 260 mm	19" rack-mounting, 2 unit 444 x 88 x 350 mm	19" rack-mounting, 2 unit 444 x 88 x 350 mm (B/H/T)
Weight	3.4 kg	8.6 kg	8.6 kg
Reliability	MTBF: > 100'000 Stunden		

**InfoGuard – Your Partner for Compelling Security Solutions with the Swiss Seal of Quality!**

We have many years of experience in designing and developing security solutions for demanding applications. We develop and produce all our products in Switzerland.

#### InfoGuard AG

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