

## Ethernet Layer 2 Link Encryption – High Performance data encryption for Ethernet Networks!



- 1 and 10 Gigabit Ethernet layer 2 data encryption using AES
- 100% encryption performance and consistently low latency <math><5\mu\text{s}</math>
- Easy network integration and minimal maintenance
- Central configuration, administration and monitoring
- Developed and manufactured in Switzerland

Fibreoptic networks are indispensable in today's business world. A fact that is often overlooked remains, however, that such networks can be easily tapped and manipulated and information integrity, confidentiality or authenticity are not absolutely guaranteed. Users of this otherwise revolutionary technology run a potentially existential risk.

The only reasonable and reliable measure for protecting information and for meeting existing compliance requirements is to encrypt such information at the point of entry to the public network.

InfoGuard offers a special new encryption solution for the completely secure exchange of information in optical Gigabit Ethernet networks.

# Ethernet Layer 2 Link Encryption – High-performance encryption made in Switzerland!

In day-to-day business, data transfer over Fibreoptic networks has become 'de rigueur'. In more and more networks, bandwidths of up to 10 Gbps are the order of the day when linking various sites e.g. server farms and computer centers as well as for backup and disaster recovery infrastructures. Unfortunately, the prevailing opinion according to which Fibreoptic lines, compared with regular copper cables, are especially secure, does not hold true in practice. On the contrary: Just bending the Fibre is all it takes to listen secretly to information exchange. The only reasonable and secure measure for protecting yourself against attacks of any kind is the encryption of that information without, however, jeopardizing performance in any way. InfoGuard products have been developed – in accordance with international security standards – exactly for this demanding task using an approach that is truly exemplary and innovative.

## Maximum Performance

InfoGuard encryption devices are fully transparent within the network. Their outstanding performance,

i.e. 100% encryption throughput, and their minimal latency of

<5µs make it possible to use the devices even in time-critical applications and in heavy-load links.



## Great Flexibility

Their flexible and modular architecture allows them to be used perfectly tap-proof in various protocols (Ethernet, SONET/SDH, Fibre Channel) in conjunction with different MAN, WAN and SAN applications at data rates of 10 GbE.

## Powerful Data Encryption

All security solutions 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 128 or 256 bits.

## Easy Handling

Simplicity and ease of use to the benefit of security are guaranteed. The devices can be managed locally via the internal user interface or via a graphic PC user interface or remotely via a secure SSH port.

## High Availability

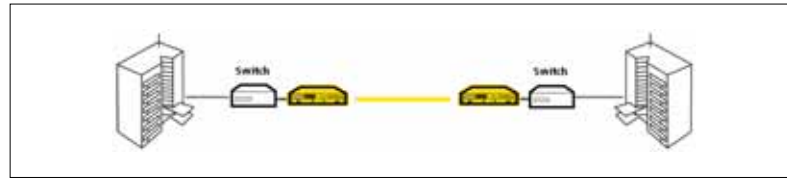
InfoGuard products have been explicitly designed for longevity and require almost no maintenance. In order to guarantee uninterrupted service at all times, the devices are equipped with a redundant power supply. In order that users can depend on the high availability of the devices, InfoGuard provides individually tailorable maintenance services.

## A Swiss Product

A Swiss company, we can guarantee the highest quality of our products and absolute independence when implementing our security features. All security-relevant modules are developed and manufactured by our certified security specialists in Switzerland.

## Dark Fiber

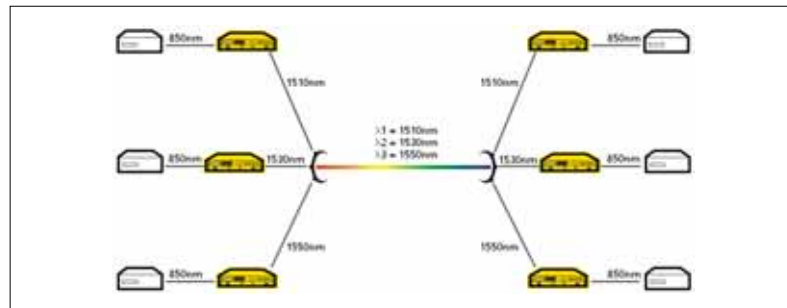
To interlink their branches, more and more companies choose Fibreoptic links, over a Dark Fiber, for instance. In this type of link, the two encryption devices are just switched on. This application is very common, and it is irrelevant whether it is used within a company's own network or within a line leased or purchased from a service provider.



Dark Fiber

## CWDM

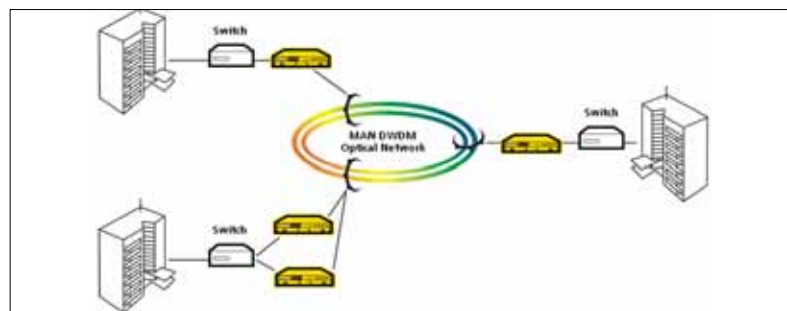
In this application scenario, a CWDM infrastructure forms the transport network. The CWDM process increases the performance of existing infrastructures by distributing the data across different wavelengths for subsequent transfer over the same optical cable. In addition, the encryption solution supports, thanks to the flexibility of its transceivers, passive multiplexing and helps users to reduce overall cost even further.



CWDM

## DWDM

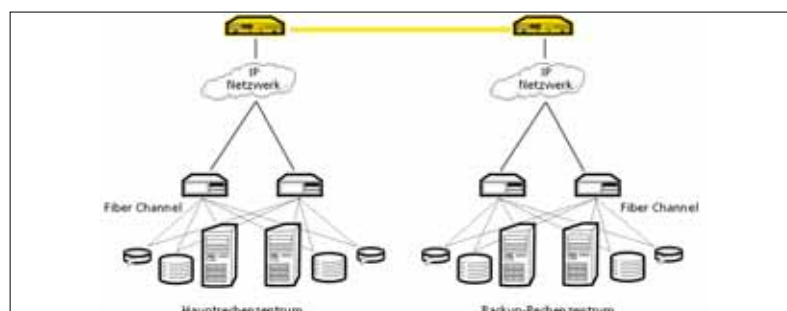
The encryption solution is perfectly suited for use in DWDM networks, bridging distances of up to several hundred kilometers, or in city networks using DWDM. Interlinking company branches directly using Gigabit Ethernet over DWDM is highly advantageous for a company's network, as the company can "plug" its Ethernet infrastructure right into the city network. All applications of the local network will work regardless of site.



DWDM

## SAN Extension

SAN Extension means linking two SAN islands over transport networks. A common transmission technology is IP (Storage over IP). The encryption solution is easily integrated into such topologies, reliably protecting sensitive data from being tapped during transfer.



SAN Extension

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# InfoGuard EG1/EG10 – Ethernet Encryption

## Security

Algorithm	AES
Key length	256 Bit (Optional 128 Bit)
Key change	Automatic communication key change without interruption of traffic
Access protection	Tamper-proof design Password protection, identity-based operator authentication Block/unblock function Emergency clear

## Management

Key Entry	Automatic key generation with true random generator Copy / backup of key and installation data via SecurityCard Manual key input via user interface
Management	<ul style="list-style-type: none"> <li>Secure Remote Management (SSH v2 CLI)</li> <li>Inter unit management via SecurityCard – SDC-1100</li> <li>Local management via keypad and display or via via web-based user interface</li> <li>Standard network management (SNMPv1/Standard MIB-II)</li> <li>Audit and Event Logging</li> </ul>



## Hardware

	InfoGuard EG1	InfoGuard EG10
Line rate	1 Gbps, Full Duplex, Encryption without overhead regardless of size of filepackages	10 Gbps, Full Duplex, Encryption without overhead regardless of size of filepackages
Communication Interface	Interface IEEE802.3 standard <b>1000BASE-SX, -LX</b> SFP-Module with LC connector	Interface IEEE802.3 standard <b>10GBASE-R, -W</b> XFP-Module with LC connector
Latency	< 5 µs	< 5 µs
Management Interface	Ethernet 10BASE-T/100BASE-TX RJ45 (local and remote management) Serial RS-232 RJ45 (diagnostics) RJ45 Alarm Relay (Active or Non-Active Alarm Indication)	
Test facilities	Build-in test equipment (BITE) Diagnostics (BITE)	
Quality system	ISO 9001:2000	
Conformity	CE (European conformity)	
Compliance	Fulfills FIPS 140-2 level 3 requirements	
EMC	EN 55022 Cl B and EN 55024 according to 89/336/EEC guidelines	
Safety	EN 60950-1 and EN 60825-1 (class 1) according to 73/23/EEC guidelines	
Power supply	Dual power supply unit, hot-pluggable(AC/AC; AC/DC; DC/DC) AC input 230 VAC nominal 100 V – 240 V/50 ... 60 Hz (+/-10%) / DC 48 V (+/-25%) Maximum power consumption 150 W	
Operation temp.	-5° C ... +50° C	
Storage temp.	-25° C ... +70° C	
Humidity	5% ... 95%	
Cooling	6 ventilators, redundancy, hot-pluggable	
Dimensions	19" Rack-Mounting - 2 Units High, 441 x 88 x 336mm (W/H/L)	
Weight	8 kg	
Reliability	MTBF 50'000 hrs, MTTR 0.5 hrs	
Availability	99.999%	

## InfoGuard – Your Partner for Persuasive Security Solutions with the Swiss Seal of Quality!

We have many years of experience in conceiving and developing security solutions for demanding applications. All security-relevant features are developed, manufactured and implemented by our certified security specialists in Switzerland.

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