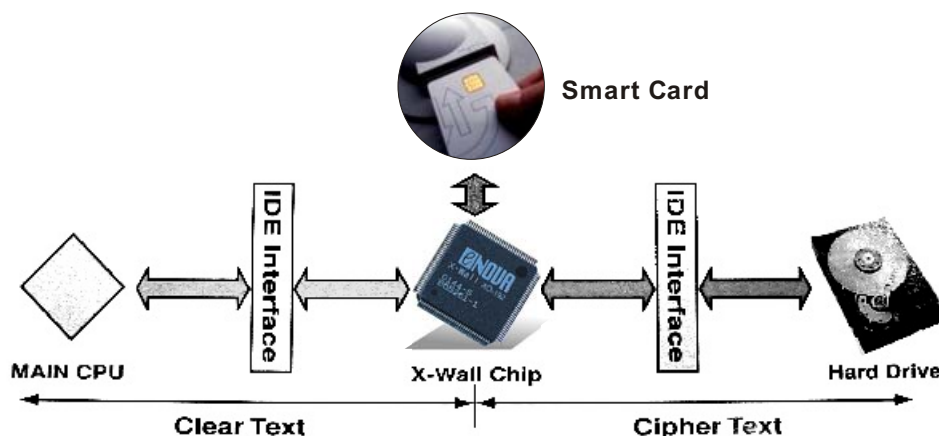




# X-wall<sup>®</sup> XO ASIC

## Secure Storage with Hardware Encryption -- Protects Critical "Data-at-Rest"

The X-Wall XO ASIC ensures privacy and confidentiality of data and credentials stored on the hard drives without degrading system performance. A cryptographic system-controller ASIC operating at the physical layer, the X-Wall XO microchip performs "real-time" encryption of the entire hard disk (including boot sector and operating system) at 1.1Gbit/sec using Federal Government<sup>1,2</sup> certified DES / TDES<sup>3</sup> algorithms. In contrast to software disk encryption solutions, no clear text including pass phrases is ever stored on the disk drive or held in machine memory. XO's unique design also completely eliminates any dependency on operating systems or device drivers while functioning automatically and transparently, thereby eliminating user intervention.



### Description

The X-Wall XO chip resides between the motherboard Host IDE and the IDE hard drive. It intercepts and translates IDE commands and encrypts all data in real-time. All data written to the hard drive, including the boot sector, operating system, temp and swap files is automatically and transparently encrypted. Attempts to circumvent security by booting from a floppy disk or by removing the hard drive to be read on a different machine would prove futile since the entire content of the hard drive is encrypted.

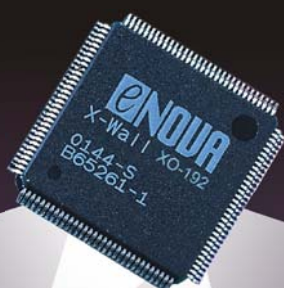
### Key Benefits

- Delivers significant performance improvement over traditional software disk encryption solutions
- Provides flexible Key Management Structure to accept versatile authentication mechanisms such as Smart Card, Biometrics, Single Sign-On, USB key token, or PIN/Password
- Eliminates platform dependency
- Minimizes Total Cost of Ownership (TCO)
- Requires no users' training

<sup>1</sup> NIST - National Institute of Standards & Technology of the United States of America

<sup>2</sup> CSE - Communications Security Establishment of the Government of Canada

<sup>3</sup> Enova's DES and TDES certificate numbers are 143 and 92 respectively



## ● Operation

Various authentications mechanisms including Smart Card, Biometrics, Single Sign-On, USB key token, or PIN/Password can be engineered to protect the “Secret Key” required to operate the X-Wall XO. Upon authentication, the “Secret Key” will be delivered through X-Wall XO to enable the operation of encryption and decryption. All existing key management systems maybe put to work without significant system platform change. Access to the disk drive will only be granted upon correct authentication.



## ● Product List

<i>X-Wall</i>	Encryption Strength	NIST & CSE Certified 100% hardware Cipher Engine	Maximum Throughput	Ultra ATA hard disk support	Ultra ATA hard disk compliance	Protocol & Transfer mode support up to	Package
<i>XO-64</i>	64-bit	<b>DES</b>	1.1 Gbit/sec	> 137GB	66, 100, 133	ATA 6, Mode 6 transfer	128-pin TQFP
<i>XO-128</i>	128-bit	<b>TDES</b>	1.1 Gbit/sec	> 137GB	66, 100, 133	ATA 6, Mode 6 transfer	128-pin TQFP
<i>XO-192</i>	192-bit	<b>TDES</b>	1.1 Gbit/sec	> 137GB	66, 100, 133	ATA 6, Mode 6 transfer	128-pin TQFP

## ● Specifications

- Compatible with all operating systems including MS Windows, Mac OS, Linux, BSD, Unix, SCO Unix and Solaris
- 1.1 Giga bit per second throughput at 66MHz
- Encryption key lengths vary by chip model from 64-bit to 192-bit. All XO chips are pin to pin compatible
- Compatible with all Ultra DMA 66/100/133 hard drives
- Compatible with all motherboards with standard IDE interface
- 128-pin TQFP small form factor package
- Dimensions: 14x14mm, 1.2mm thickness
- Power requirement: +3.0V to +3.6V
- Operating temperature: 0 degrees C to +70 degrees C
- Storage temperature: -55 degrees C to +125 degrees C



Enova Technology, a privately held company with its HQ in Milpitas, California, specializes in the design of advanced real-time cryptographic solutions. Enova's innovative encryption technology satisfies the needs of Corporations, Government Agencies, Consumers and security-conscious users worldwide who demand absolute privacy and confidentiality of stored data and network credentials.



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