ENOVA®

X-Wall® MX

SATA Real-Time Full Disk Encryption Cryptographic ASIC Protecting Sensitive "Data-at-Rest" with AES 256-bit Strength

The **X-Wall® MX** family ASIC (Application Specific Integrated Circuit) is the 7th generation of patented X-Wall Technology. It is engineered specifically to encrypt/decrypt **entire SATA hard drive** including boot sector and operating system in real-time performance. The cryptographic engine of the **X-Wall® MX** is NIST (National Institute of Standards and Technology) and CSE (Communications Security Establishment) certified hardware AES (Advanced Encryption Standard) algorithm.

How does it work?

X-Wall® MX, an SATA to SATA cryptographic gateway, sits right in between host SATA and the device SATA hard drive, encrypting entire SATA drive with wire speed performance while providing up to 256-bit AES hardware strength.
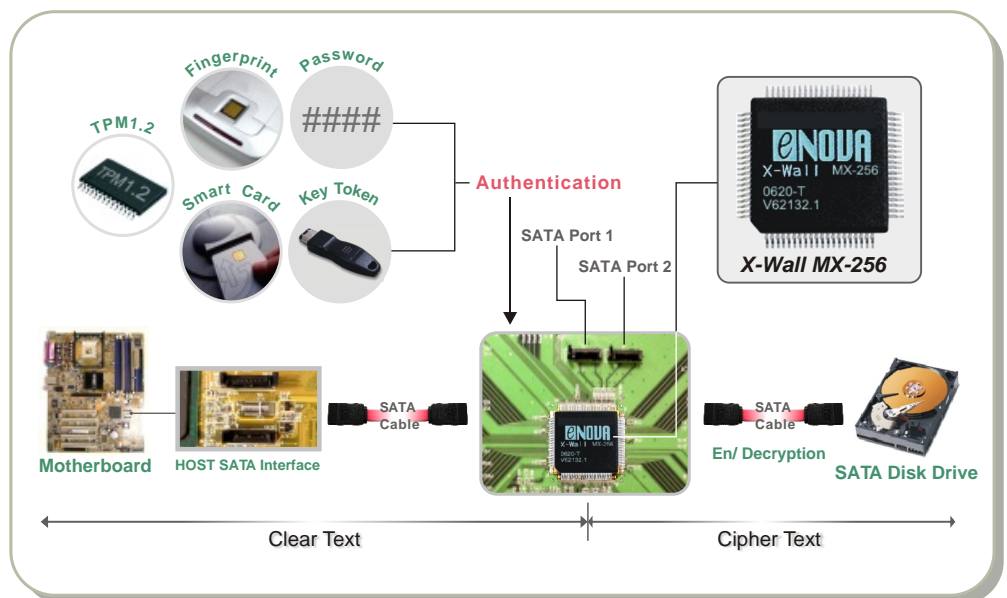

Figure 1. *MX* Overall Architecture

System performance with **X-Wall® MX** engaged is unaffected. **X-Wall® MX** can be operated with SATA1.0a & SATA2.0 compliant disk drives with a cryptographic throughput of 150MB/sec. The performance-optimized AES hardware engine performs all encryption and decryption. There are no extra software components, eliminating entirely the memory and interrupt overheads.

X-Wall® MX requires no device driver and is independent from and invisible to all known Operating Systems including embedded OS. As long as the drive is SATA1.0a & SATA2.0 compliant, **X-Wall® MX** will work in the system. Once authenticated, its operation is completely transparent to all users. There is no complex GUI involved therefore your regular computing behavior is unchanged.

**Enova Technology
Protect Your Data;
Safeguard Your Privacy™**

Key Management

Key Management with **X-Wall** [R]**MX** can be versatile, which includes PIN/Password through Pre-boot authentication, TPM 1.2, Smartcard, Fingerprint, Single Sign On, or USB type external key token. One or more factor authentications are applicable through either two-wire serial interface or a built-in API (Application Programming Interface) through SATA interface.

As the entire SATA hard drive is encrypted, there is no possibility of any secret being left unprotected on the drive, including password and "Secret Key." In an **X-Wall**[R] **MX** protected system (drive), there is no simple way to read the data without the right "Secret Key." Only YOU have the right Key to unlock your data.

Key Benefits

✓ Offers wire speed performance at 150MB/sec on all encryption strengths

✓ Operating System independent

✓ Provides iron-clad security through hardware-based NIST & CSE certified cryptographic AES engine

✓ Simplify engineering design for security targets

✓ Configurable host and device SATA ports

✓ Multiple key load allows key swapping for drive deployment & repurposing

✓ Crypto/By-pass mode toggling

Features

✓ Power-On-Self-Test (POST) ability to ensure product reliability

✓ Versatile Key Management through either serial interface or built-in API (Application Programming Interface)

✓ 100% hardware AES (ECB mode) cryptographic engine producing 150MB/sec wire speed performance

✓ AES CBC mode is available

✓ 80-pin TQFP small form factor

✓ RoHS & Lead-free compliant

Ordering Codes

✓ SKU (Stock Keeping Unit) : **X-Wall**[R] **MX**-128

✓ SKU (Stock Keeping Unit) : **X-Wall**[R] **MX**-192

✓ SKU (Stock Keeping Unit) : **X-Wall**[R] **MX**-256

System Requirement

✓ All Microsoft[R] Windows[R] Operating Systems

✓ Linux OS with SATA support

✓ All embedded OS with SATA support

✓ SATA1.0a & SATA2.0 compliant disk drive

Available X-Wall[R] MX parts

X-Wall[R]	Encryption Strength	NIST & CSE Certified 100% hardware Cipher Engine	Maximum Throughput	SATA hard disk support	RoHS & Lead-free Compliant	Package
MX-128	128-bit	AES, ECB or CBC mode	150 MB/sec	1.0a / 2.0	Yes	80-pin TQFP
MX-192	192-bit	AES ECB or CBC mode	150 MB/sec	1.0a / 2.0	Yes	80-pin TQFP
MX-256	256-bit	AES ECB or CBC mode	150 MB/sec	1.0a / 2.0	Yes	80-pin TQFP
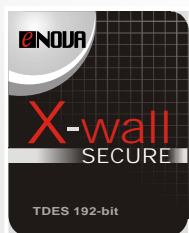
Enova Technology, a privately held company with its HQ in Hsin-Chu Science-based Industrial Park, Hsin-Chu City, Taiwan, specializes in the design of advanced real-time cryptographic storage solutions. Enova's innovative encryption technology satisfies the needs of Corporations, Government Agencies, Consumers and security-conscious users worldwide who demand absolute privacy and confidentiality of stored data and network credentials.

Authorized Distributor :