

Proven Full Disk Encryption Technology



Enova Technology

<http://www.enovatech.com>

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Protect your data; Safeguard your privacy®

Why the urgent need for real-time Security?

- ◆ Data breaches cost Corporations billions of dollars
 1. Corporations must also absorb costs of consumer legislation, such as California SB1386 (designed to protect the consumer);
 2. Cost to inform and monitor credit report -- \$40 per record
- ◆ Corporations face a host of potential legal liabilities associated with negligent disclosure
- ◆ Vertical markets demand it
- ◆ Consumers appreciate it

Storing secure data is no longer an option....

It's a NECESSITY!

What is *X-Wall Technology*?

X-Wall products ensure:

- 1. Real-time full disk encryption performance***
- 2. OS independency***
- 3. No device drivers***
- 4. Solid security with NIST/CSE certified TDES or AES***
- 5. Significant cost savings for deployment & drive repurposing!***

Enova Corporate Profile

Founded:	April 2000
Offices:	California, Taipei, Hsin-Chu
Employees:	Experienced team of 30+
CEO:	Robert Wann, Founder

- Proven Real-time Full Disk Encryption Technology ensures no performance degradation
- Proven SATA and PATA High Speed Interface Control
- OS Independent
- Real-time hardware TDES & AES cryptographic engines on the market (US NIST & Canada CSE certified: DES #143, TDES #92, AES ECB #60, AES CBC #250)

Recent data breaches

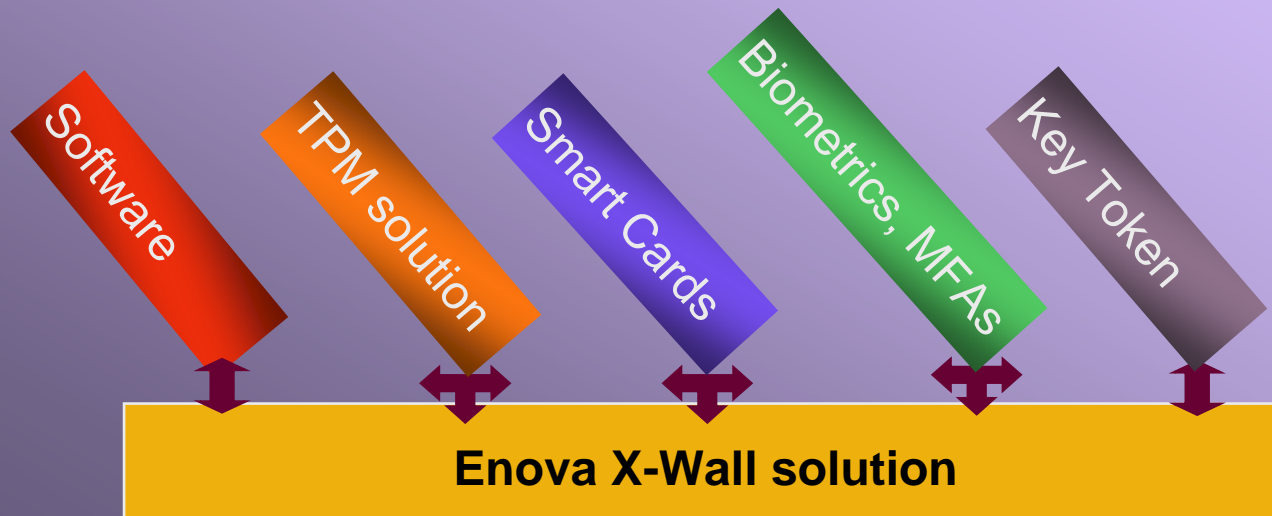
- ◆ TJX is the largest known customer record theft
 - TJX study concluded that software encryption was vulnerable.
(<http://www.eweek.com/article2/0,1895,2109742,00.asp?kc=EWNAVEMNL040207EOAD>)
 - "Despite our masking and encryption practices on our Framingham system in 2006, the technology utilized in the Computer Intrusion during 2006 could have enabled the Intruder to steal payment card data from our Framingham system during the payment card issuer's approval process, in which data (including the track 2 data) is transmitted to payment card issuer's without encryption. Further, we believe that the Intruder had access to the decryption tool for the encryption software utilized by TJX."

Enova offers an agnostic building block solution

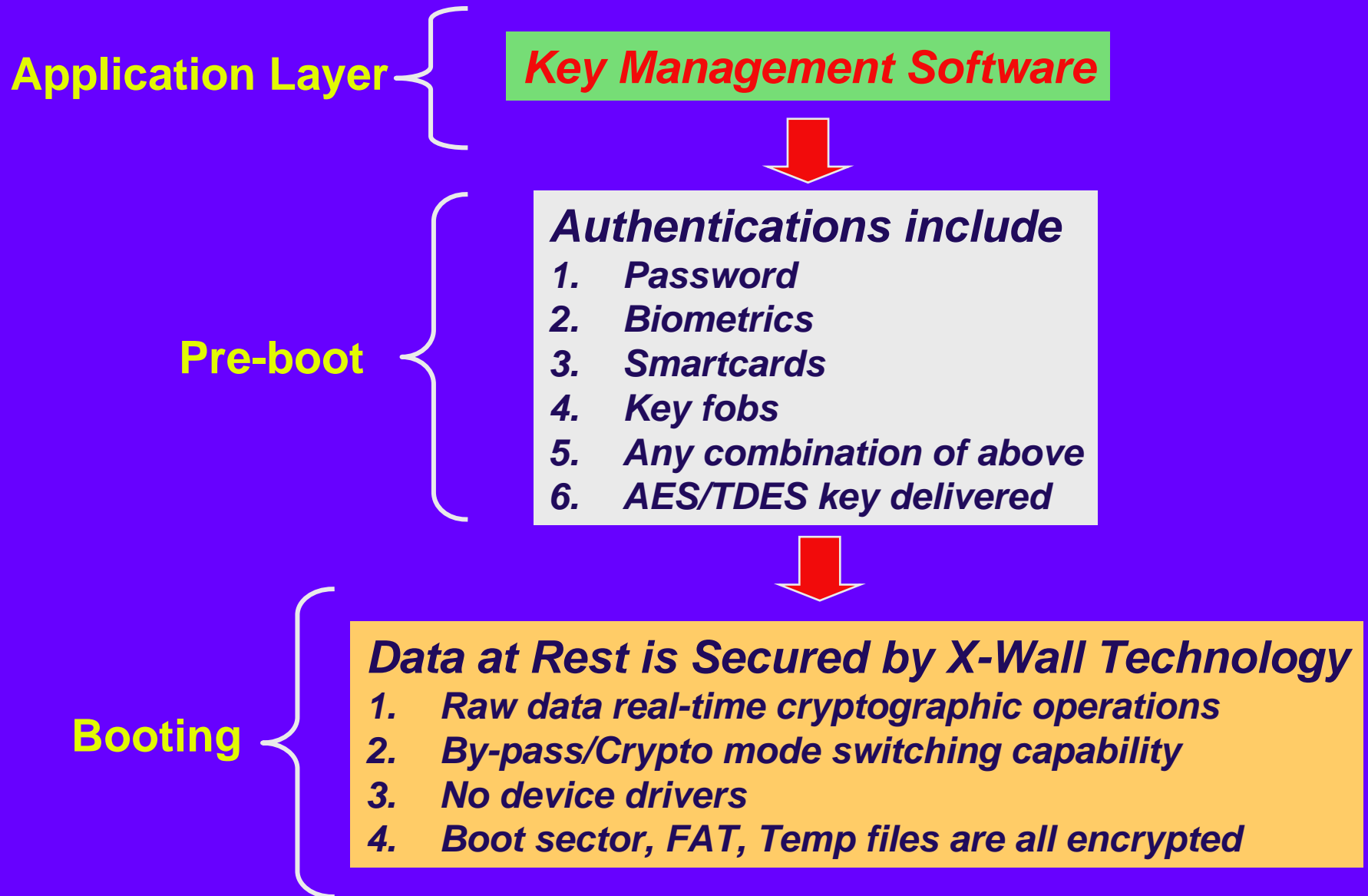
- ◆ **Enova solution becomes a building block for all security**
 - Enterprise Servers
 - PC/NB/CE/HH
 - Future products road map
- ◆ **Enova can provide a ‘unique and total security based solution’**
 - Solution has the option of including one or more aspects of a total security solution

Enova adds great value to security solutions

Enova's X-Wall MX series chips allow extremely flexible security solutions



Enova System Implementation



Enova ensures trusted real-time data-at-rest encryption

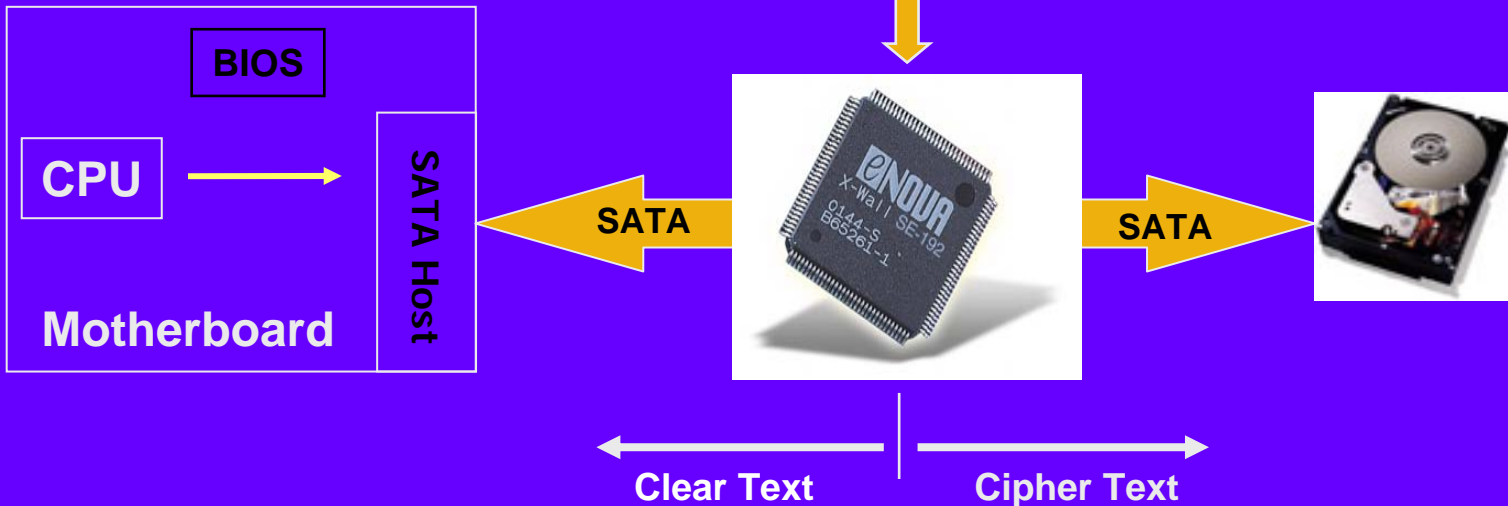
Authentication Begins Here:

- A built-in TPM generates and hides the Secret Key;
- Simple authentication such as Password;
- Fingerprint & Password produce two factors authentication;
- Smartcard & Password product two factors authentication;
- A simple key token can authenticate *X-Wall MX*.

The AES/TDES Key may be delivered via built-in API or 2-wire SEEPROM interfaces at power on reset or after to authenticate and activate the crypto engine of *X-Wall*. Incorrect Key will render incorrect decryption -- NO access.

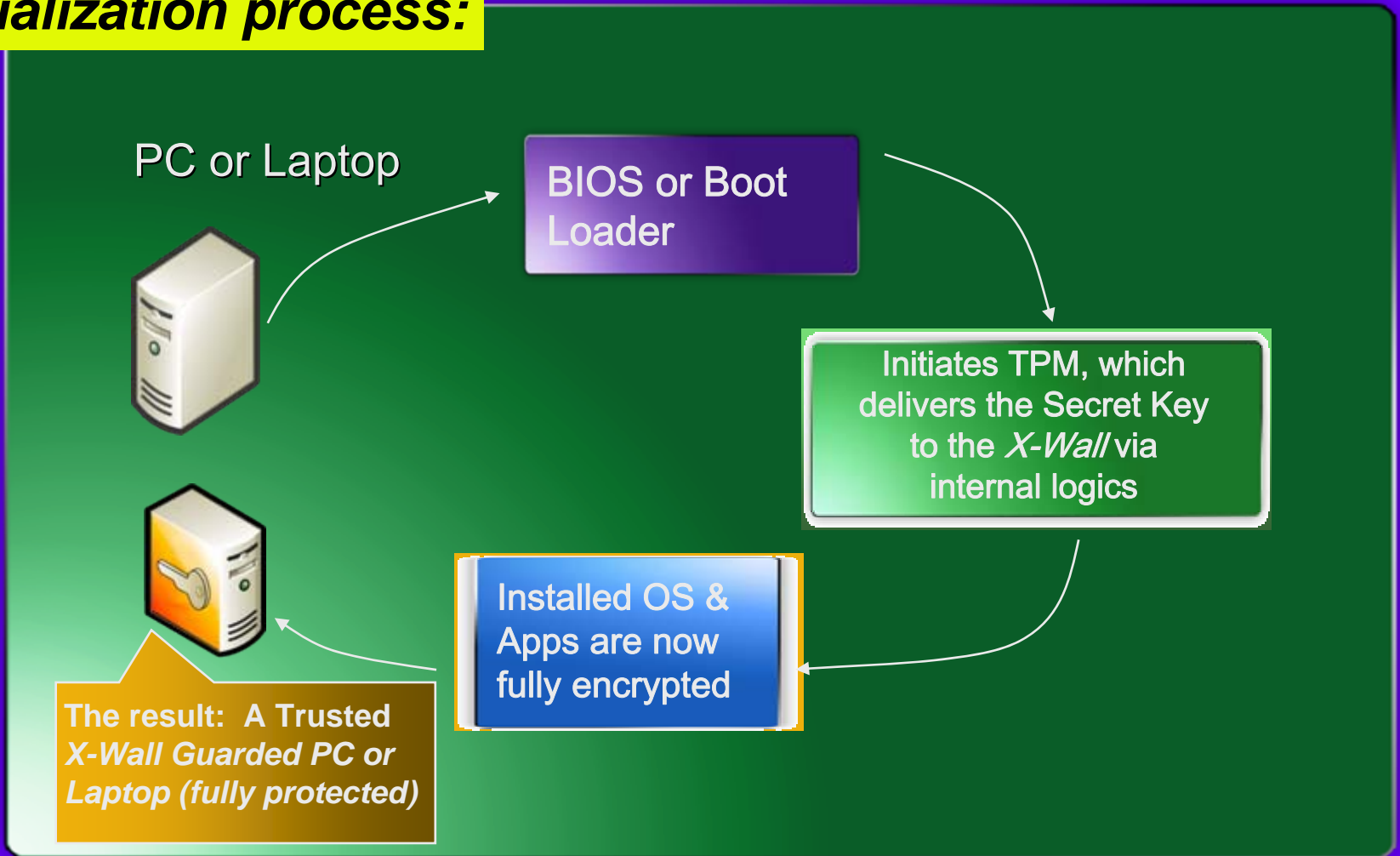
Key will only be delivered via hardware Interface if authentication is successful

MULTIPLE SATA DEVICES



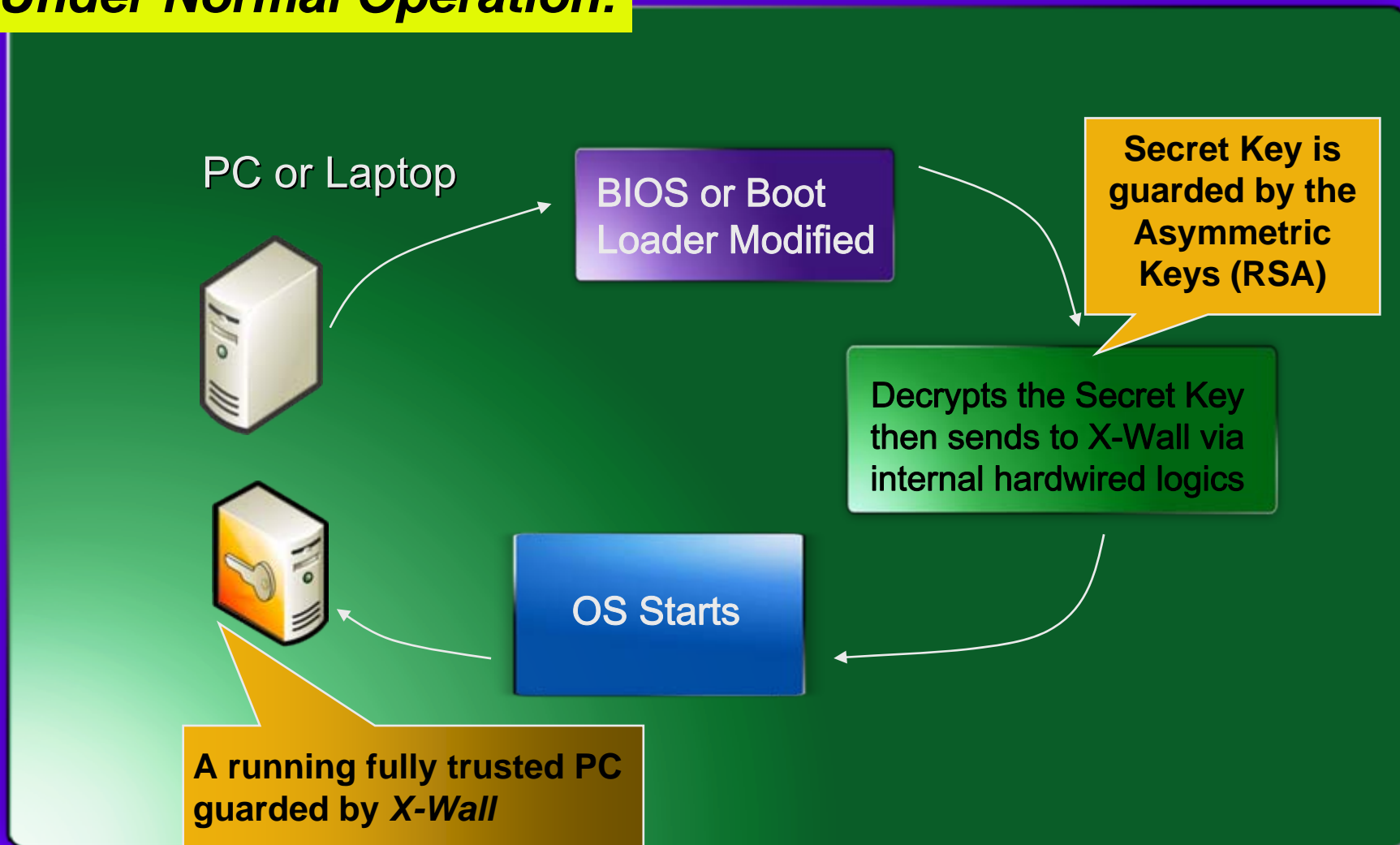
Works with TPM: How to initiate

• Initialization process:



Works with TPM: How to Operate

• Under Normal Operation:



X-Wall Pros & Cons

PROs:

- ◆ Works with Port Multiplier and RAID controller for storage server markets
- ◆ Wire speed performance 1.5Gbit/sec to MULTIPLE connected SATA drives
- ◆ Compliments TPM 1.2 features & functionalities
 - TPM, if applicable, guards Secret Key to operate *X-Wall*
- ◆ Hardware based security solutions for uncompromised security
- ◆ OS independent

CONs:

- ◆ There are no cons!
- ◆ Implementation of various authentication factors is at your discretion, making your applications unique

Enova's Value Proposition

- ◆ **Addresses the paradigm shift: Hot Emerging Security Market with a proven comprehensive solution**
 - Attract Press/Media attention with a united marketing presence
 - Security solutions are gaining greater acceptance
- ◆ **Enterprise Customers Demand Strong Hardware Security**
 - Offers uncompromised AES 128/192/256-bit strong security
 - Enova's product roadmap includes continuing product enhancements
- ◆ **Brand Name Recognition**
 - 1st influential brand name provider to promote strong security becomes market leader

Competitive Analysis

Software

- TCO is high (>US\$200)
- Performance Degradation
 - ⇒ 50% slower in Writing
 - ⇒ 28% slower in Reading
- Compatibility Concerns
- OS Dependencies

Other Hardware

- OS Dependencies
- Performance Degradation
- Design Complexity
- Power & heat concerns

Enova Solutions

- Silicon Proven -- Cost Saving 50%
- No Performance Degradation
- OS Independent
- Design complexity has been removed!
- Secure with NIST certified hardware AES engine

Quality & Reliability

To ensure our product quality and reliability, Enova contracts with world-class semiconductor manufacturers, packaging, and quality assurance final testing manufacturers

◆ Enova's Sub-Contractors

- Wafer/Semiconductor: TSMC (World's #1 Foundry)
- Packaging & Final Testing: SPIL (World's #2)

◆ Enova exceeds Reliability Requirements

- ✓ High Temperature Operating Life @125C for 1,000 hours: *passed*
- ✓ ESD HBM, CDM, & MM: *passed*
- ✓ Latch-up @250mA @70C^o: *passed*

X-Wall[®] Chip Product Lines

X-Wall[®]	Crypto Strength	NIST& CSE Certified 100% hardware Crypto Engine	Interface Protocol & Control	Maximum Throughput	Ultra ATA hard disk support	Protocol & Transfer mode support up to	RoHS & Lead-free Chip Package
SE 128/192A	128/192-bit	TDES	PATA	1.1 Gbit/sec	Less than 137GB	ATA 5, Mode 4 transfer	128-pin LQFP
LX 64/128/192	64/128/192-bit	DES/TDES	PATA	1.6 Gbit/sec	More than 137GB	ATA 6, Mode 6 transfer	128-pin LQFP
XO 64/128/192	64/128/192-bit	DES/TDES	PATA	1.2Gbit/sec	More than 137GB	ATA6, Mode 6 transfer	128-pin TQFP
CO 128/192	128-bit	TDES	PATA	1.2Gbit/sec	More than 137GB	ATA6, Mode 6 transfer	128-pin TQFP
DX 128/192	128/192-bit	TDES	SATA	1.5Gbit/sec	SATA Unlimited	All Serial ATA Protocols	80-pin TQFP
MX 128/192/256	128/192/256-bit	AES	SATA	1.5Gbit/sec	SATA Unlimited	All Serial ATA Protocols	80-pin TQFP

Some Customers

Seagate



TOSHIBA TEC CORPORATION

Multi Function Peripherals

We provide document solutions in offices through Net-Ready MFP.

Products

- Full Color MFP
- B&W MFP
- Analog Copier
- Facsimile

TOSHIBA



OKI

RICOH

ASUS

MiTAC 神通電腦

Some End Users

KRONOS



Canada Revenue Agency / Agence du revenu du Canada



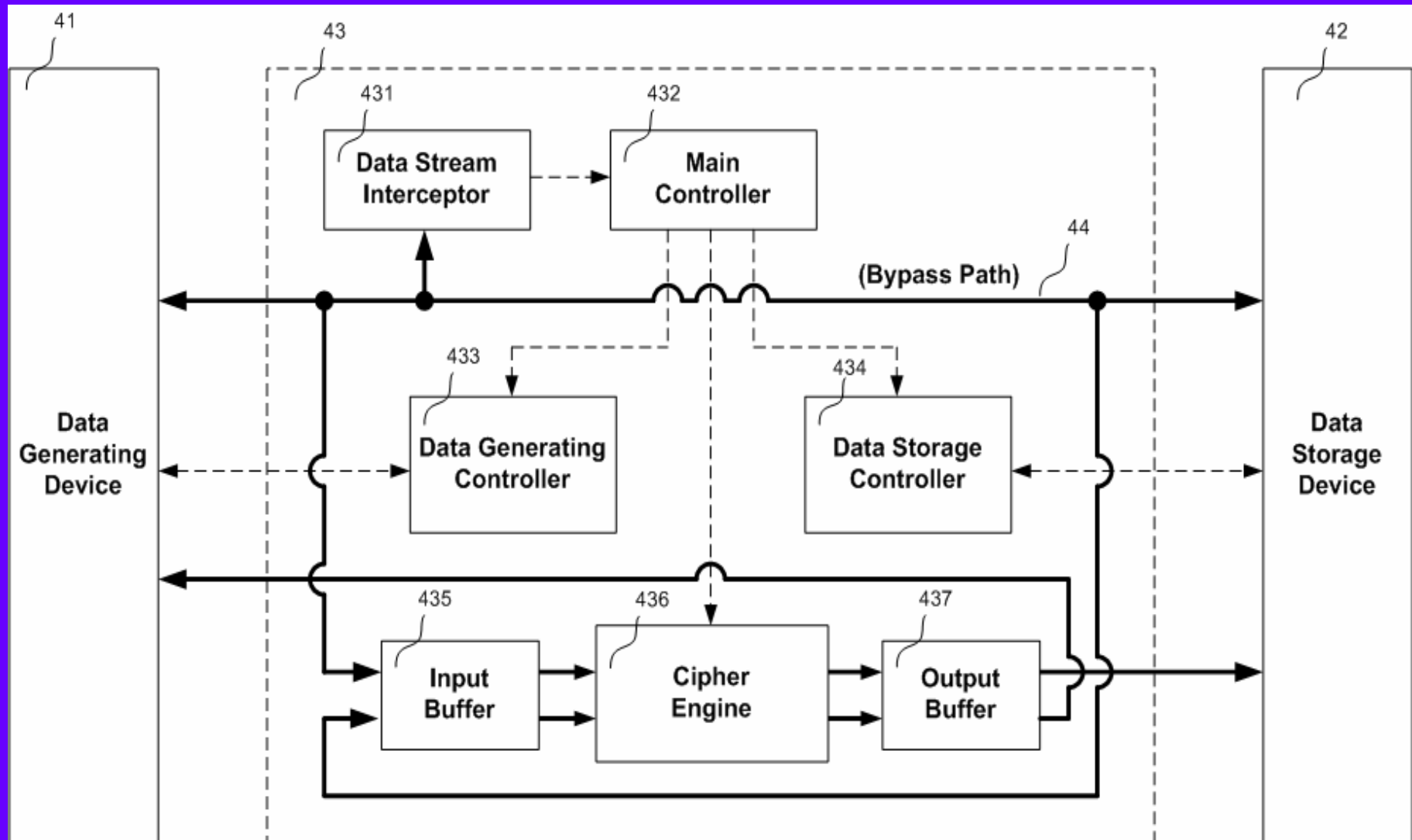
Mercedes-Benz



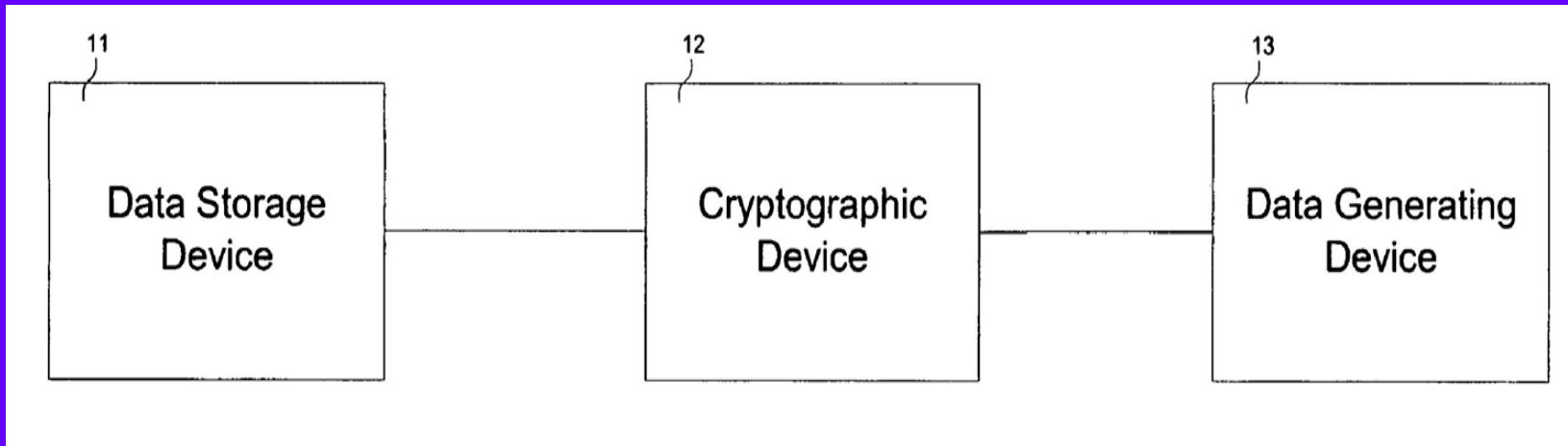
National Aeronautics and Space Administration

United States Department of Health & Human Services

Patented X-Wall Architecture #1 (US Patent 7,136,995)

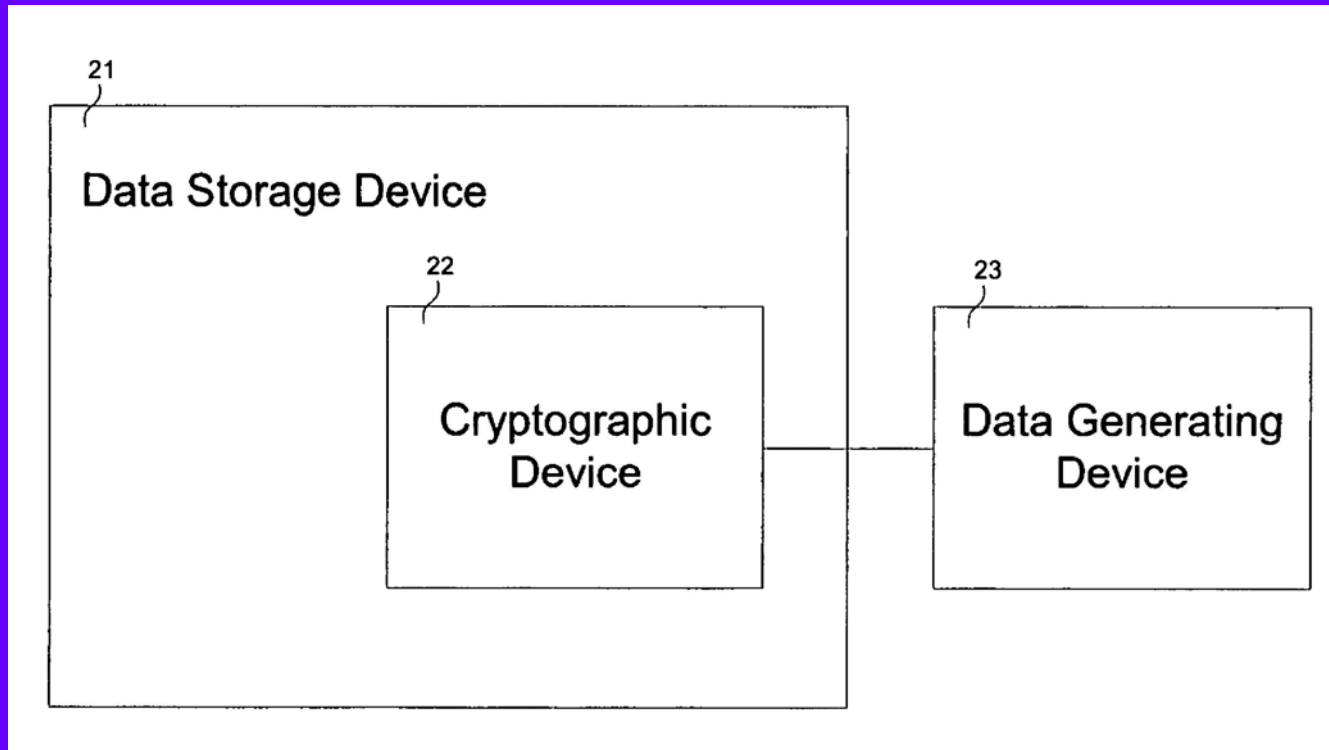


Patented *X-Wall* Architecture #2 (US Patent 7,136,995)



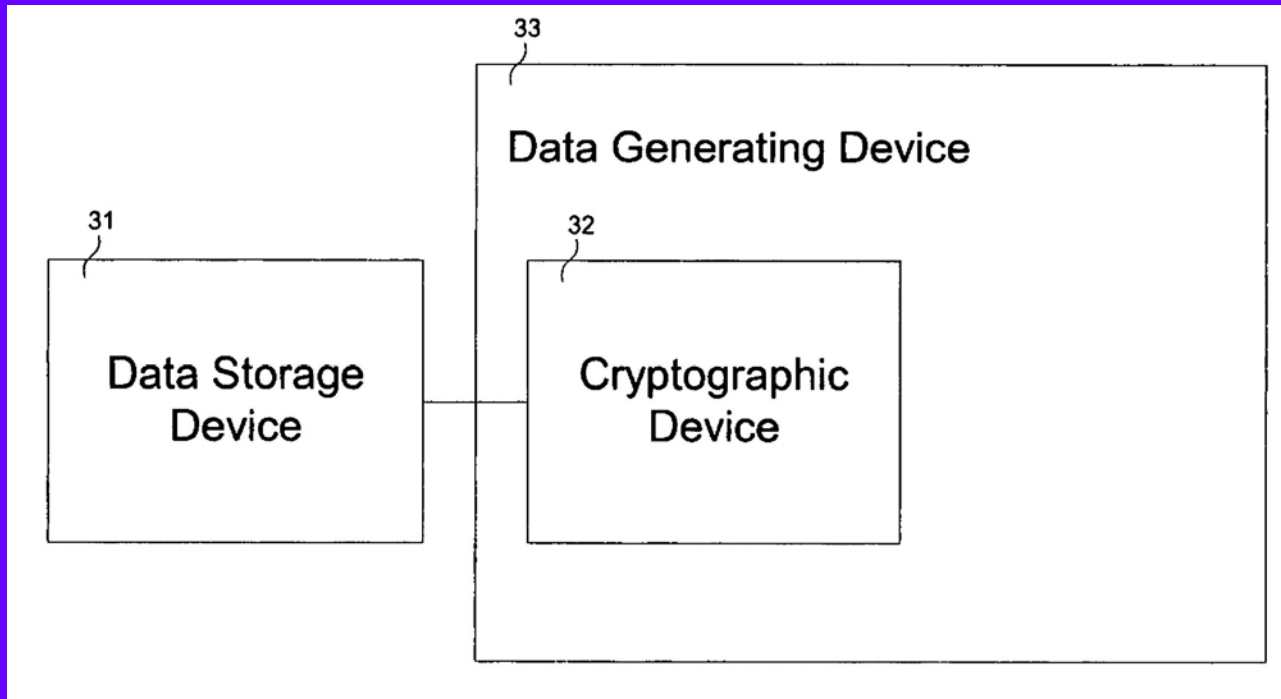
A cryptographic device operatively coupled between a data generating device and a data storage device for use during data transfer

Patented *X-Wall* Architecture #3 (US Patent 7,136,995)



A cryptographic device integrated within a data storage device for use during data transfer with a data generating device.

Patented *X-Wall* Architecture #4 (US Patent 7,136,995)



A cryptographic device integrated within a data generating device for use during data transfer with a data storage device

Thank you!

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