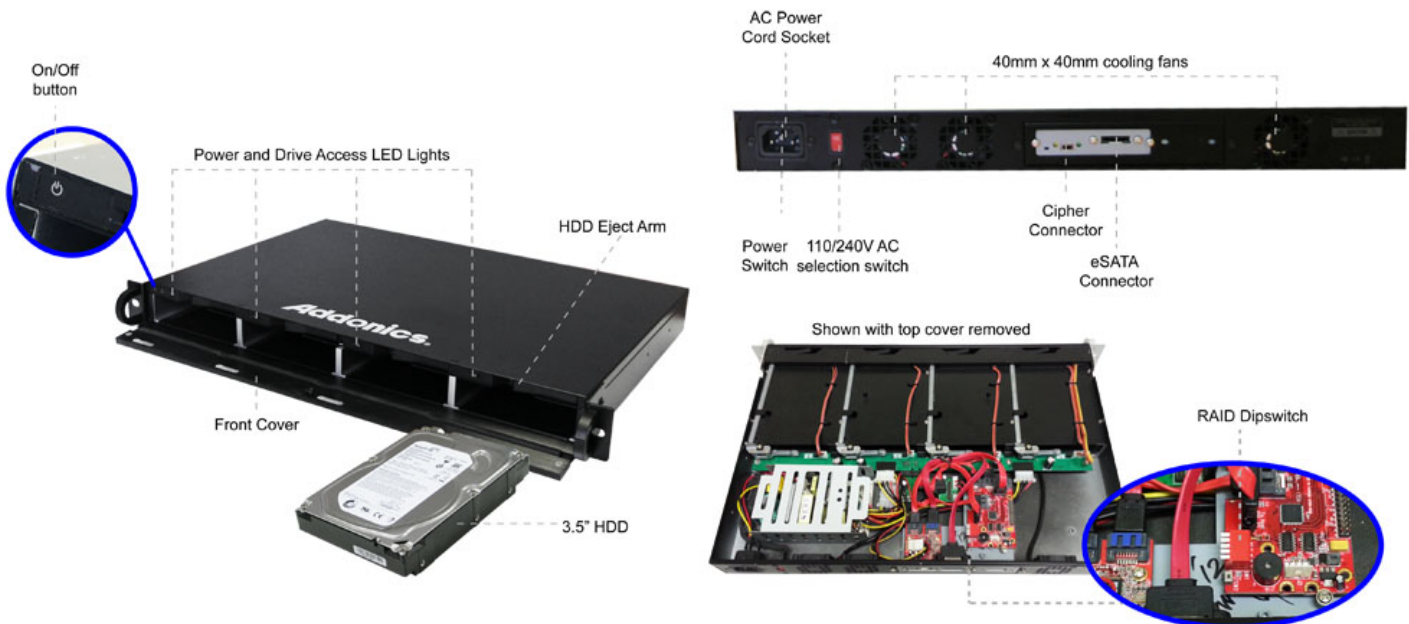


INTRODUCTION

This Cipher 1U Rack is a great solution for application that requires attaching multiple drives or a large RAID volume to any system with reliable full disk encryption. Up to as many as four 3.5" hard drive can be connected to a system via a single cable to a PM compatible eSATA or USB 3.0/2.0 port. This Cipher 1U Racks is designed with bullet proof AES 256-bit full disk hardware encryption at less than half of the price of similar products in the market. Not only the data is highly secured by the strong AES 256-bit encryption, the Cipher 1U Rack is simple to use and easy to deploy. There is no software to install or special training required. Individual drive or RAID setting for the four drives are done through a group of dip switches. The FIPS certified hardware crypto engine integrated inside the Cipher 1U Rack ensures the maximum performance of the hard drive. Other than the insertion of a cipher key during the initial power up, the Cipher 1U Rack operates and performs just the same as an ordinary RAID system.

**1U RAID Rack
with AES 256-bit
hardware encryption**

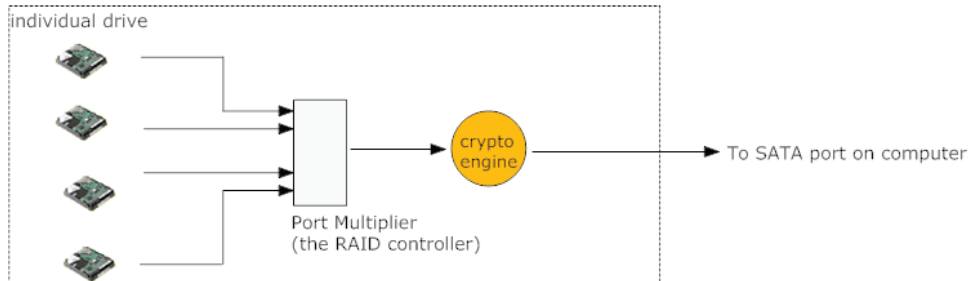


The Cipher 1U Rack comes with everything you need other than adding your choice of hard drive in any capacity. Drives are added and removed from the Cipher 1U Rack like tape cassette without the need of special drive tray or tool. By attaching to the Addonics NAS 4.0 adapter, this cipher 1U Rack can be instantly turned into a secured NAS on any local area network.

Designed with RAID Volume Encryption (RVE) architecture which costs less than the DLE (Drive Level Encryption) approach. It is simpler to operate with only one encryption key to secure all the drives or the entire RAID volume. This Cipher 1U Rack supports maximum throughput up to 150 MB/sec. with full disk encryption

RVE encryption architecture illustration

Cipher RAID Tower




Below is a summary of the PROs and CONs for DLE and RVE RAID encryption architectures:

| | DLE | RVE |
|---------------------------------|--|--|
| Encryption Architecture | one crypto engine per drive | one crypto engine per RAID set |
| Performance | maximum 300 MB/sec depending on the speed of the SATA port | Maximum 150 MB/sec |
| Cost | higher | lower |
| Operation | requires multiple Cipher keys depending on the # of drives in the RAID set | one Cipher key to activate the Cipher 1U Rack |
| level of security | AES 256-bit full disk encryption, each drive can be encrypted with different cipher key code | AES 256-bit full disk encryption. Each drive uses the same Cipher key code |
| recommended applications | Video editing, high performance computing that require sustained throughput over 150 MB/sec | General office server application, file back up, database, web server, email server, video server and others |

FEATURES

- **Connect to system via an eATA or USB 3.0/2.0 port**
- **RAID Volume Encryption (RVE), one cipher key for all four drives**
- **AES 256-bit encryption - the highest level of encryption standard**
- FIPS 140-2 certified Crypto Module.
- Full disk encryption. No traceable data when the encrypted drive is connected to any system

- No training required. Encryption/decryption via a hardware key , just like using a regular key to open a door
- Drives are encrypted and decrypted on the fly with no noticeable performance degradation
- Install up to four 3.5" SATA hard drives of any capacity (drives not included) or 2.5" SATA hard drives using Addonics Snap-In 25 adapter
- Drives are added or removed directly like tape cartridge from each removable snap-in bay without any special tool
- Drives are connected inside to a Hardware Port Multiplier (AD5HPMSXA)
- The four hard drives can be configured as a RAID group via dip switches accessible inside the chassis
- Drives can be configured as RAID0 (Striping), RAID1 (Mirroring), RAID 5 (Parity), RAID10 (Mirrored Striped), JBOD (Concatenation) or Clone Mode (N-Way Mirror) using built-in hardware RAID
- Connect to USB 3.0 or 2.0 port via the included USB 3.0 - eSATA adapter
- Convert to a secured NAS by attaching to LAN via the Addonics NAS 4.0 adapter
- OS independent, can be used on any system

Components list made up this model:

1U RAID Rack integrated with AES 256-bit encryption and HPM-XA system version (AD5HPMSXA), a pair of Cipher keys (AAENKEY-2), one 3-foot eSATA cable (AAESATA100C), USB 3.0 - eSATA adapter (ADU3ESA), power cord and user guide

SPECIFICATIONS

- **Rackmount chassis**

- 1U height
- Constructed in heavy duty steel
- 180 Watts 110/240 AC power supply
- Integrated triple 40x40mm low noise cooling fans

- **Front Panel**

- LED displays - Power, HDD Activity
- Front accessible switches - Power On / Off
- Four Snap-In drive bay for 3.5" SATA HDD (or 2.5" SATA HDD using optional Snap-In 25, model: AE25SN35SA)

- **Rear panel**

- one eSATA connector
- One Cipher key socket
- LED indicator for drive access and power for the CipherChain module
- AC power socket

- **CipherChain Hardware encryption module (CCAES256M)**

- Onboard AES 256-bit crypto engine
- compatible with SATA I/II/III hard drive
- SATA connectors:
 - Blue - for connecting to host
 - Black - for connecting to device
- LEDs:
 - Green - for power and the presence of key code
 - Yellow - drive access activity
- RESET: To clear key code and reset the CipherChain. This also removes the drive icon when the storage device is removed from the CipherChain and the connected SATA supports hot swap
- Maximum throughput - 150 MB/sec

- OS support depends on the host controller
- Weight: 9.95 lb (4.51 Kg)
- Dimensions (W x L x H): 17.19 x 11.88 x 1.75 in. (436.5 x 301.75 x 44.45 mm)
- Operating temperature and humidity: 0 - 60°C, 5 - 95% % RH non-condensing
- Storage temperature and humidity: -20 - 70°C, 0 - 90% RH

***Note:** For eSATA connection, the RAID RACK must be connected to a SATA controller with hot swap capability in order to add and remove drive without rebooting. Please consult your motherboard or the add-in card manufacturer to determine hot swap support on your SATA controller. All of the Addonics SATA Host Controllers are hot swap capable.