cenmate 704RU

cenmate 704RU 4-Bay RAID External Hard Drive Enclosure User Manual

Model: 704RU

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your cenmate 704RU 4-Bay RAID External Hard Drive Enclosure. Please read this manual thoroughly before using the product to ensure proper functionality and data safety. This enclosure supports up to four 2.5-inch or 3.5-inch SATA HDDs/SSDs.

2. PACKAGE CONTENTS

- cenmate 4-Bay RAID Enclosure (Model 704RU)
- Power Adapter (DC 12V)
- USB-A to USB-C Cable
- eSATA Cable
- Screws for 2.5-inch drive installation
- User Manual

3. PRODUCT FEATURES

- Supports four 2.5-inch or 3.5-inch SATA I/II/III HDDs/SSDs.
- Multiple RAID modes: Normal, RAID 0, RAID 1, RAID 3, RAID 5, RAID 10, Clone, Large, JBOD.
- High-speed data transfer via USB 3.0 (up to 5Gbps) and eSATA.
- Equipped with a cooling fan for optimal heat dissipation.
- Automatic sleep function after 30 minutes of inactivity to reduce power consumption and drive wear.
- Built-in multi-protection features: short-circuit, over-heating, over-current, and over-voltage protection.
- Compatible with Windows, macOS, and Linux operating systems.

4. SAFETY INFORMATION

- Ensure the power adapter is correctly connected to a suitable power source.

- Do not expose the device to water or excessive humidity.
- Avoid dropping or subjecting the enclosure to strong impacts.
- Do not open the enclosure or attempt repairs yourself. Contact support if service is required.
- Always back up important data before performing any RAID configuration changes, as data loss may occur.

5. HARDWARE INSTALLATION

5.1 Installing Hard Drives

1. Gently pull out the drive trays from the enclosure.
2. For 3.5-inch HDDs, align the drive with the tray and secure it using the provided screws (if necessary, some trays are screwless).
3. For 2.5-inch HDDs/SSDs, place the drive into the tray and secure it with the smaller screws provided.
4. Slide the loaded drive trays back into the enclosure until they click into place.

Support 2.5"/3.5" HDD and SSD
Comes with the screws for the 2.5" hard disk installation

3.5" SATA HDD   **2.5" SATA SSD**

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Figure 1: Installation of 2.5-inch and 3.5-inch SATA HDDs and SSDs into the cenmate 4-bay enclosure.

5.2 Connecting to Your Computer

1. Connect the power adapter to the enclosure's DC 12V input port and then to a power outlet.
2. Connect the enclosure to your computer using either the USB-A to USB-C cable or the eSATA cable. Ensure the connection is secure.
3. Power on the enclosure using the power switch.

Figure 2: DC 12V power connection for the enclosure.

6. RAID CONFIGURATION

The cenmate 704RU enclosure supports various RAID modes.**Changing RAID modes will erase all data on the drives. Always back up your data before making any changes.**

6.1 Understanding RAID Modes

| RAID Mode	Minimum Drives	Description
Normal	1	Each drive operates independently.
RAID 0	2	Striping. Data is split across multiple drives for increased performance. No redundancy.
RAID 1	2	Mirroring. Data is duplicated across two drives for redundancy. Capacity is limited to the smallest drive.
RAID 3	3	Striping with dedicated parity. Similar to RAID 0 but with one drive reserved for parity data.
RAID 5	3	Striping with distributed parity. Data and parity information are distributed across all drives. Offers good performance and redundancy.
RAID 10	4	Nested RAID (RAID 1+0). Combines mirroring and striping for high performance and redundancy. Requires four drives.
Clone	2	Creates an exact copy of one drive onto another.
Large	2	Concatenation (JBOD-like). Drives are combined sequentially to form one large volume. No redundancy.
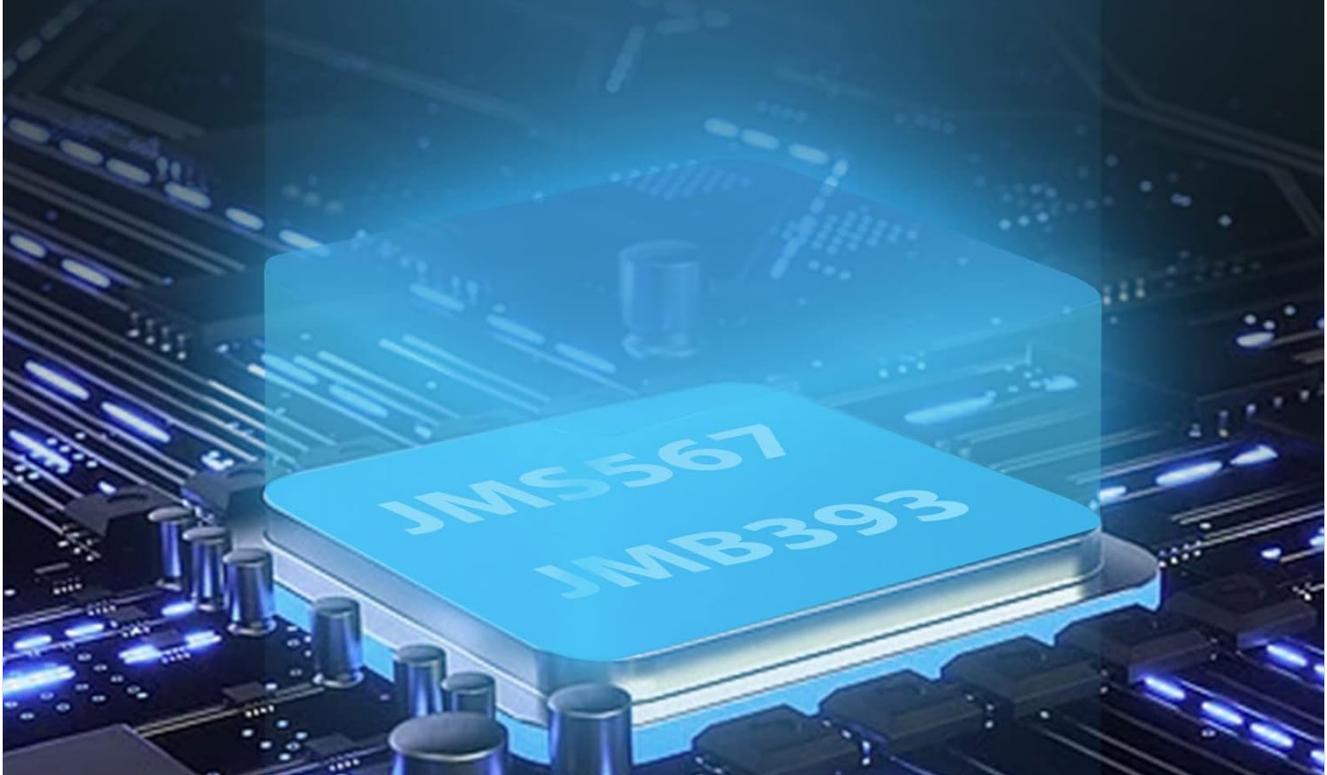
Figure 3: Overview of RAID storage modes.

6.2 Setting RAID Levels

The RAID mode is set using DIP switches located on the back of the enclosure. Refer to the diagram below for specific switch configurations.

1. **Power off** the enclosure and disconnect it from the computer.
2. Set the DIP switches to the desired RAID configuration according to the diagram.
3. Press and hold the **Reset** button for 5 seconds.
4. Reconnect the power and turn on the enclosure. The new RAID mode will be applied.

Figure 4: DIP switch configurations for RAID levels.

7. INITIALIZING AND FORMATTING DRIVES

After installing new drives and configuring RAID, the drives must be initialized and formatted before use. This process is typically done through your operating system's Disk Management utility.

1. Connect the enclosure to your computer and power it on.
2. Open Disk Management: Right-click 'This PC' (or 'My Computer'), select 'Manage', then 'Disk Management'.
3. Locate the new disk(s) (they may appear as 'Unknown' or 'Not Initialized').
4. Right-click the disk and select 'Initialize Disk'. Choose MBR for disks 2TB or less, or GPT for disks larger than 2TB.
5. After initialization, right-click the unallocated space and select 'New Simple Volume' to create and format a partition. Follow the wizard to assign a drive letter and format with your preferred file system (e.g., NTFS for Windows).

8. OPERATION

8.1 Data Transfer

The enclosure supports USB 3.0 (5Gbps) and eSATA for high-speed data transfer. Connect the appropriate cable to your computer for optimal performance.

Figure 5: High-speed data transfer via USB 3.0/USB-C or eSATA.

8.2 Auto Sleep Function

The enclosure features an automatic sleep mode. If there is no data activity for 30 minutes, the drives will enter sleep mode to conserve power and extend drive lifespan. Activity will automatically wake the drives.

Figure 6: Automatic sleep function after 30 minutes of inactivity.

8.3 LED Indicators

The front panel features LED indicators for each drive bay, providing status information:

- **Blue:** Always on, indicates standby mode or power on.
- **Red:** Flashing, indicates data reading or writing activity.
- **Purple:** Indicates a hard drive problem or error.

Figure 7: LED indicator status meanings.

9. MAINTENANCE

9.1 Cooling System

The enclosure includes an integrated cooling fan to maintain optimal operating temperatures for your hard drives, preventing overheating and ensuring stable performance.

Figure 8: Internal cooling fan for heat dissipation.

9.2 Anti-skid Pads

The enclosure is equipped with silicone anti-skid pads on the bottom to provide stability and protect surfaces from scratches.

Figure 9: Silicone anti-skid pads for stability.

10. Troubleshooting

This section addresses common issues you might encounter with your cenmate 4-Bay RAID Enclosure.

Q1: After connecting a new hard drive, why can't I find it or see a disc letter?

A1: New hard drives must be initialized and formatted before the system can recognize and use them. Refer to Section 7 for detailed steps on initializing and formatting drives in Disk Management.

Q1

After connecting new hard drive to the computer, why can't I find the hard drive and display the disc letter?

After the new hard drive is connected to the computer, it must be formatted before the system can be recognised and used. Method of operation: First, right-click 'Computer', then click 'Management', open into the 'Disk Management', find the new hard drive, right-click 'Initialisation 'Select 'MBR (hard drive capacity less than or equal to 2TB)' or 'GPT (greater than 2TB)', then 'New Simple Volume', the default next step to format the partition. Formatting is completed after the hard drive can be used normally, showing the new disc symbols.

Q2

The hard drive appears in RAW format in Disk Management due to improper extraction or power failure. What should I do?

Recovery through the chkdsk command; operation method: administrator identity run cmd input CHKDSKi:/f enter (here the i is the disc letter of the disk), scanning and repair is complete reboot can be displayed.

Figure 10: Troubleshooting steps for drive recognition and RAW format.

Q2: The hard drive appears in RAW format in Disk Management due to improper extraction or power failure. What should I do?

A2: You can attempt recovery using thechkdsk command. Open Command Prompt as an administrator and input chkdsk I: /f (replace 'I' with the actual disc letter of the RAW drive). After scanning and repair, reboot your computer.

Q3: The hard drive is dynamically invalid in Disk Management because it was previously removed from an old computer.

A3: This is a system-related issue. Reinstall the hard drive into its original computer motherboard, back up the data, and then convert it to a basic disk. If the old computer is unavailable, you may need dynamic disk conversion software.

Figure 11: Troubleshooting steps for dynamic invalid drives, missing disc letters, and disconnections.

Q4: Hard drive shows up but has no disc letter?

A4: In Disk Management, right-click on the Disk Partition section and select 'Change Drive Letter and Paths...' to add a drive letter for use.

Q5: The enclosure automatically disconnects during transmission and then reconnects itself after a while?

A5: This could indicate issues with the USB interface on your computer, the USB cable, computer USB drivers, the hard drive itself, or the hard drive enclosure. Systematically check each component. If the problem persists, contact technical support.

11. SPECIFICATIONS

Feature	Specification
Model Number	704RU
Brand	cenmate
Supported Drives	2.5-inch / 3.5-inch SATA I/II/III HDD/SSD
Number of Bays	4
Max Capacity per Drive	Up to 20TB (Total 80TB)
RAID Modes	Normal, RAID 0, RAID 1, RAID 3, RAID 5, RAID 10, Clone, Large, JBOD
Hardware Interface	USB Type-C (USB 3.0), eSATA
Data Transfer Rate	Up to 5 Gigabits Per Second (USB 3.0)
Compatible Devices	Desktop, Personal Computer
Compatible OS	Windows, macOS, Linux
Material	Aluminum
Product Dimensions	7 x 5 x 7 inches
Item Weight	7.37 pounds

Feature	Specification
Power Supply	DC 12V

Figure 12: Wide compatibility with various drive types and operating systems.

12. WARRANTY AND SUPPORT

cenmate products typically come with a one-year warranty. For technical assistance, troubleshooting beyond this manual, or warranty claims, please contact cenmate customer support. The manufacturer aims to provide 24/7 quick reply and lifetime product quality support.

For support, please refer to the contact information provided with your product packaging or visit the official cenmate website.