

NAS System

User Manual

Revision 2.0

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Preface

About this manual

This manual provides information regarding the quick installation and hardware features of the **NAS System**. This document also describes how to use the storage management software. Information contained in the manual has been reviewed for accuracy, but not for product warranty because of the various environment/OS/settings. Information and specifications will be changed without further notice.

This manual uses section numbering for every topics being discussed for easy and convenient way of finding information in accordance with the user's needs. The following icons are being used for some details and information to be considered in going through with this manual:



NOTES:

These are notes that contain useful information and tips that the user must give attention to in going through with the subsystem operation.



IMPORTANT!

These are the important information that the user must remember.



WARNING!

These are the warnings that the user must follow to avoid unnecessary errors and bodily injury during hardware and software operation of the subsystem.



CAUTION:

These are the cautions that user must be aware of to prevent damage to the equipment and its components.

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Changes

The material in this document is for information only and is subject to change without notice.

NOTE: Some screen shots may differ from actual NAS System model.

Before You Begin

Before going through with this manual, you should read and focus to the following safety guidelines. Notes about the subsystem product packaging and delivery are also included.

Safety Guidelines

To provide reasonable protection against any harm on the part of the user and to obtain maximum performance, user is advised to be aware of the following safety guidelines particularly in handling hardware components:

Upon receiving of the product:

- ❖ Place the product in its proper location.
- ❖ To avoid unnecessary dropping out, make sure that somebody is around for immediate assistance.
- ❖ It should be handled with care to avoid dropping that may cause damage to the product. Always use the correct lifting procedures.

Upon installing of the product:

- ❖ Ambient temperature is very important for the installation site. It must not exceed 30°C. Due to seasonal climate changes; regulate the installation site temperature making it not to exceed the allowed ambient temperature.
- ❖ Before plugging-in any power cords, cables and connectors, make sure that the power switches are turned off. Disconnect first any power connection if the power supply module is being removed from the enclosure.
- ❖ Outlets must be accessible to the equipment.
- ❖ All external connections should be made using shielded cables and as much as possible should not be performed by bare hand. Using anti-static hand gloves is recommended.
- ❖ In installing components, secure all the mounting screws and locks. Make sure that all screws are fully tightened. Follow correctly all the listed procedures in this manual for reliable performance.

Packaging, Shipment and Delivery

- ❖ Before removing the subsystem from the shipping carton, you should visually inspect the physical condition of the shipping carton.
- ❖ Unpack and verify that the contents of the shipping carton are complete and in good condition.
- ❖ Exterior damage to the shipping carton may indicate that the contents of the carton are damaged.
- ❖ If any damage is found, do not remove the components; contact the dealer where you purchased the subsystem for further instructions.

Chapter 1 Introduction



The NAS System

1.1 Key Features

- Supports up to four (4) hot-swappable 6Gb/s SATA3 hard drives
- Supports RAID levels 0, 1, 5, 6, 10
- Support Smart-functional LCD panel
- Support drive hot spare and automatic hot rebuild
- Centralization of Data and Storage Management
- Real-time drive activity and status indicators
- Environmental monitoring unit
- Allow online capacity expansion within the enclosure
- Locally audible event notification alarm

1.2 Technical Specifications

Hardware Platform
Intel Celeron 3.4GHz CPU or above
Cache memory : 8GB DDR4 SDRAM up to 32GB
Four USB3.0 ports
Two Gigabit Ethernet ports
Up to four(4) 2.5"/3.5" hot-swappable 6Gb/s SATA3 hard drives
Real-time drive activity and status indicators
Environmental monitoring unit
250W power supply with PFC
Support drive hot spare and automatic hot rebuild
Allow online capacity expansion within the enclosure
Locally audible event notification alarm
Power requirements
AC 100V ~ 240V Full range
6A~3A, 60~50Hz
Environmental
Relative humidity : 10%~85% Non-condensing
Operating temp : 10°C~40°C(50°F~104°F)
Physical Dimension
44(H) x 446.4(W) x 500(D)mm

Specifications are subject to change without notice.

1.3 RAID Levels

Below is the list of RAID Levels available for configuration in the NAS.

RAID Level	No. of Allowed Failed Drives	Description	Minimum Required Number of Drives
0	None	Block striping is provided and yields higher performance than with individual drives. There is no redundancy.	1
1	1	Drives are mirrored. All data is 100% duplicated on an equivalent drive. Fully redundant.	2
5	1	Data is striped across several physical drives. Parity protection is used for data redundancy.	3
6	2	Data is striped across several physical drives. Parity protection is used for data redundancy. Requires N+2 drives to implement because of two-dimensional parity scheme.	4
10	2	Striping over two RAID1 RAID sets. This level provides mirroring and redundancy through striping.	4

Chapter 2 Installation

2.1 Unpacking the NAS System

The package contains the following items:

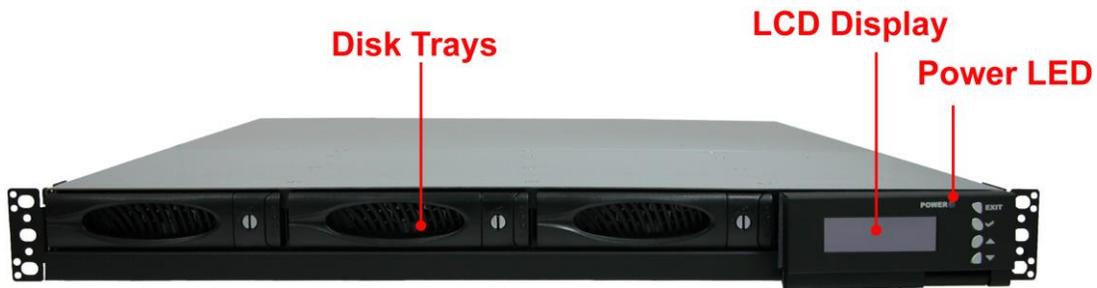
<p>NAS System Unit</p>	
<p>One (1) power cord</p>	
<p>Two (2) Ethernet LAN cables</p>	

NOTE: If any of these items are missing or damaged, please contact your dealer or sales representative for assistance.

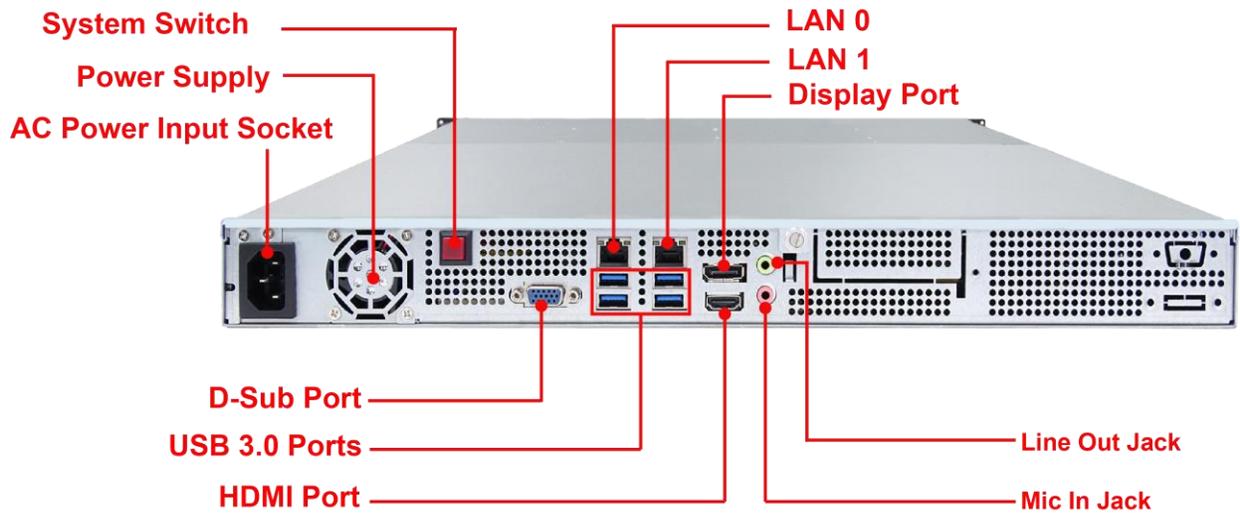
2.2 Identifying Parts of the NAS System

The illustrations below identify the various parts of the NAS System.

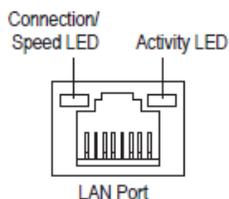
2.2.1 Front View



2.2.2 Rear View



- 1. System Switch** – Use this switch to power on the NAS System.
- 2. Power Supply** – The NAS System has one power supply.
- 3. AC Power Input Socket** - Use this to connect the power cords connected from power source.
- 4. D-Sub Port** - The D-Sub port supports a 15-pin D-Sub connector and supports a maximum resolution of 1920x1200@60 Hz(the actual resolutions supported depend on the monitor being used). Connect a monitor that supports D-Sub connection to this port.
- 5. USB 3.0 Port** - The USB 3.0 port supports the USB 3.0 specification and is compatible to the USB 2.0/1.1 specification.
- 6. HDMI Port** - The HDMI port is located at the rear of the system. HDMI (High-Definition Multimedia Interface) is an all-digital audio/video interface capable of transmitting uncompressed audio/video signals.
- 7. LAN0 and LAN1 Gigabit ports** – The NAS System has two Gigabit data ports. The Gigabit Ethernet LAN port provides Internet connection at up to 1 Gbps data rate. The following describes the states of the LAN port LEDs.



Connection/Speed LED:

State	Description
Orange	1 Gbps data rate
Green	100 Mbps data rate
Off	10 Mbps data rate

Activity LED:

State	Description
Blinking	Data transmission or receiving is occurring
On	No data transmission or receiving is occurring

- 8. DisplayPort** - DisplayPort delivers high quality digital imaging and audio, supporting bi-directional audio transmission. DisplayPort can support both DPCP and HDCP 2.3 content protection mechanisms. It provides improved visuals supporting Rec. 2020 (Wide Color Gamut) and High Dynamic Range (HDR) for Blu-ray UHD playback. You can use this port to connect your DisplayPort-supported monitor. Note: The DisplayPort Technology can support a maximum resolution of 4096x2304@60 Hz but the actual resolutions supported depend on the monitor being used.

2.2.3 Disk Tray

The NAS System houses a 2.5/3.5 inch hard disk drive. It is designed for maximum airflow and incorporates a carrier locking mechanism to prevent unauthorized access to the HDD.

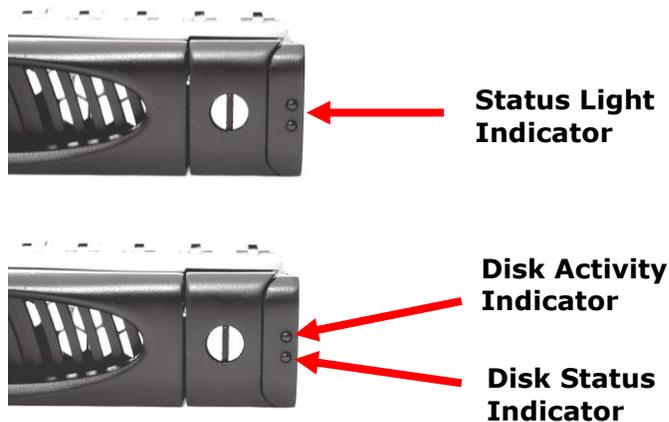


2.2.3.1 Disk Drive Status Indicator

Every Disk Tray has 2 status indicator lights. The Disk Status Indicator light is for Power On/Error status. When this light is **GREEN** the disk drive's power is on and everything is functioning normally. When the light is **RED**, a disk error or failure has happened that requires the user's attention. When disk is in rebuilding status, the LED is blinking RED.

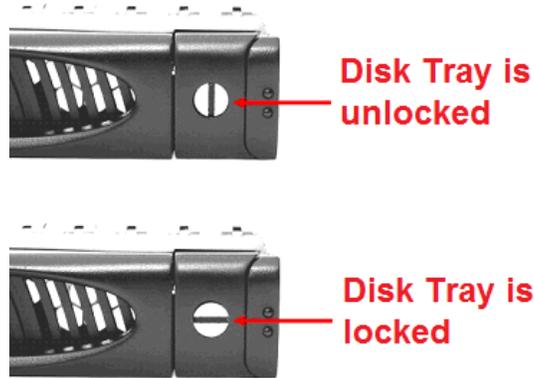
The other status indicator light is the hard disk drive access light. Access LED will light up blue if the SAS HD is installed. Access LED will not light up if the SATA HD is installed. When the hard disk drive is being accessed, this light will **flash BLUE**.

In addition, both indicator lights are viewable within a 170° arc.



2.2.3.2 Lock Indicator

Every Disk Tray is lockable and is fitted with a lock indicator to indicate whether or not the disk tray is locked into the chassis. Each tray is also fitted with an ergonomic handle for easy carrier removal.

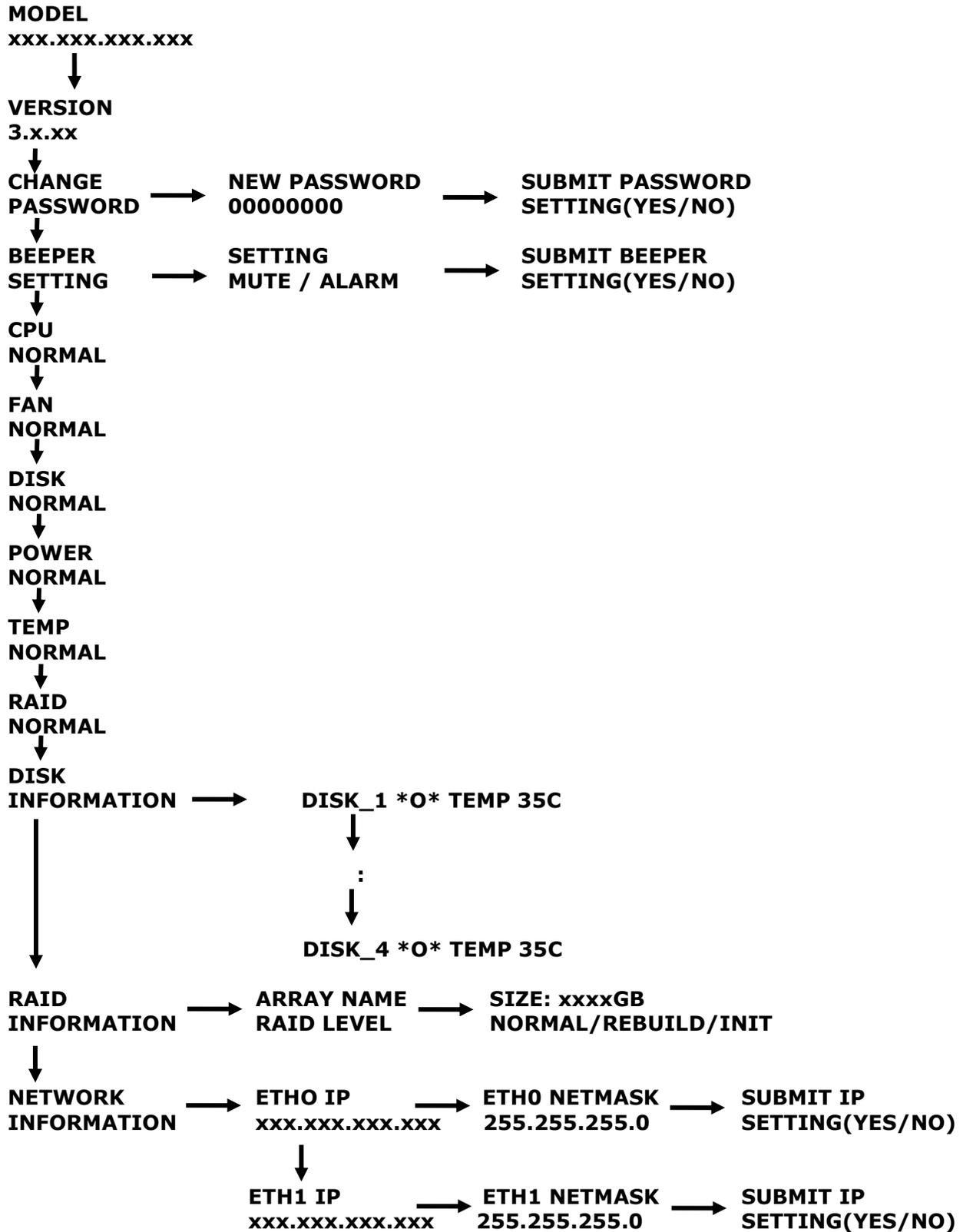


2.2.4 LCD Panel



Parts	Function
Power LED	Green LED indicates power is on.
Up and Down Arrow buttons 	Use the Up or Down arrow keys to go through the information on the LCD screen. This is also used to move between each menu.
Select button 	This is used to enter the option you have selected.
Exit button EXIT	Press this button to return to the previous menu.

Menu Diagram



Chapter 3 Getting Started with the NAS System

3.1 Preparing the Subsystem and Powering On

Here are the basic steps to prepare the NAS System for use.

1. Attach network cable to LAN0 Ethernet port. Connect the other end of network cable to your network hub or switch. You may also connect the other Ethernet ports if needed.
2. Plug in the power cord into the AC Power Input Socket located at the rear of the subsystem.
3. To turn on the NAS System, press the System Switch.
4. The Power LED on the front panel will turn green.

3.2 Installing Hard Drives

This section describes the location of the hard drives in the NAS System and gives instructions on installing a hard drive. The system supports hot-swapping allowing you to install or replace a hard drive while the system is running.

3.2.1 Installing 3.5" Disk in a Disk Tray

- a. Make sure the lock indicator is in unlocked position. To pull out a disk tray, press the tray open button.



- b. Pull out an empty disk tray. Pull the lever handle outwards to remove the carrier from the enclosure.

- c. Place the hard drive in the disk tray.



- d. Install the mounting screws on the bottom part to secure the drive in the disk tray.

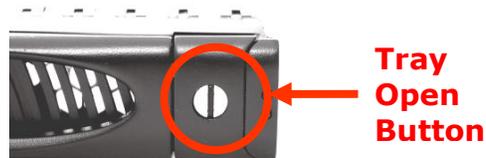


Tray Hole A

- e. Slide the tray into a slot.
- f. Close the lever handle until you hear the latch click into place.

3.2.2 Installing 2.5" Disk in a Disk Tray

- a. Make sure the lock indicator is in unlocked position. To pull out a disk tray, press the tray open button.

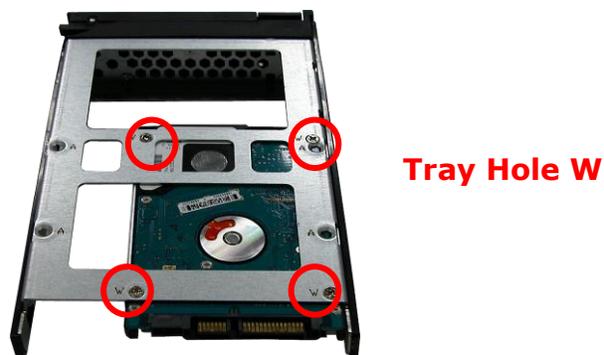


- b. Pull out an empty disk tray. Pull the lever handle outwards to remove the carrier from the enclosure.

- c. Place the 2.5" hard drive in the disk tray.



- d. Install the mounting screws on the bottom part to secure the drive in the disk tray.



- e. Slide the tray into a slot.
- f. Close the lever handle until you hear the latch click into place.