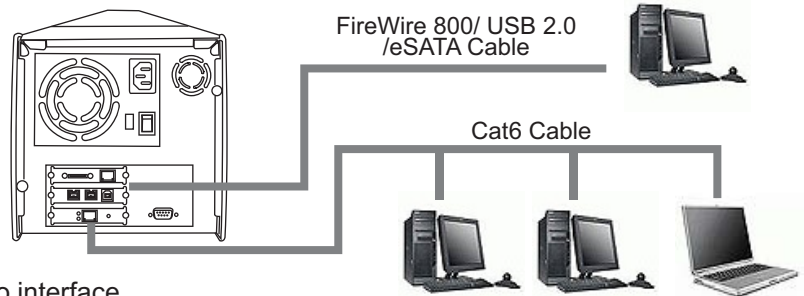


## NUFS5030-1

### NDAS & USB/ FireWire 800 (1394b)/ eSATA Dual Host RAID Subsystem

#### Cost-effective and High performance

NUFS5030-1 is most cost-effective SATA II disk drive RAID subsystem with completely integrated high performance and data protection capabilities. NUF5030-1 delivers the performance required for I/O demanding applications such as Video-On-Demand, database servers, and image systems.



#### Dual Host (DAS & NDAS)

- **DAS**
  - USB 2.0, FireWire 800 (1394b) and SATA ComBo interface.
  - It takes full advantage of high-speed 1394/USB serial bus and Serial ATA Bus allowing for multitasking performance.
- **Gigabit NDAS**
  - NUF5030-1 uses NDAS network directly attached storage technology to support data to/from the SATA devices through 1Gbps Ethernet links. It takes full advantage of high-speed Gigabit Ethernet Bus allowing for multi-user and multitasking performance.
  - The Gigabit NDAS bridge controller can demonstrate a network disk read/write bandwidth close to the local Direct-Attached-Storage access speed.
  - The Gigabit NDAS bridge controller along with the host system driver software provides versatile, scalable, sharable, and expandable network directly attached storage solutions.

#### Unsurpassed Data Availability

As storage capacities continue to rapidly increase, users need greater level of disk drive fault tolerance, which can be implemented without doubling the investment in disk drives. The RAID 6 can offer fault tolerance greater than RAID 1 or RAID 5 but only consumes the capacity of 2 disk drives for distributed parity data. The SATA RAID controllers with extreme performance RAID 6 engine supported provide the highest RAID 6 feature to meet this requirement. The controller can concurrently compute two parity blocks and get comparable with RAID 5 performance.

NUFS5030-1 allows two HDD failure without impact on the existing data and failed drive rebuild is transparent to the host. Environmental information is accessible either via the control panel/serial port or Ethernet port.

#### Highlight

- Support up to 5 SATA or SATA II drives.
- Support RAID level 0, 1, (0+1), 3, 5, 6 and JBOD.
- The new polynomial RAID 6 Engine to support highest speed RAID 6.
- Online RAID level/stripe size migration
- Online Capacity Expansion.
- Online Dynamic Volume Set Capacity expansion.
- Dual Host (DAS & NDAS) Connectivity and Support up to three Volume Set
  - USB 2.0/ FireWire 800 (1394b)/ eSATA host supports one Volume set
  - Gigabit Ethernet host supports up to two Volume set
- Volume Set:
  - DAS (USB 2.0, FireWire 800 (1394b) and SATA ComBo interface)
    - Support 2TB (Max) volume set
  - Gigabit NDAS
    - Support greater than 2TB volume set
- NDAS Drivers
  - Driver V3.30.1602 (NTFS) for Microsoft Windows 2000, XP, 2003 Server and Vista
  - Driver V1.01.0033 (FAT32) for Microsoft Windows 98SE and Me
  - Panther Driver V1.8.0 for Mac OS X 10.3 (Panther)
  - Tiger Driver V1.8.0 for Mac OS X 10.4 (Tiger)
  - Tiger Driver V1.8.1 for Mac OS X 10.4.x

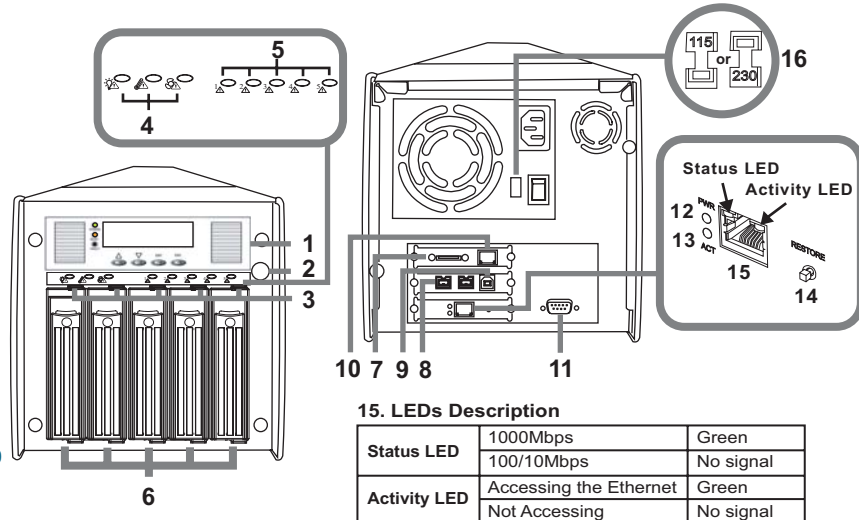


## NUFS5030-1

### NDAS & USB/ FireWire 800 (1394b)/ eSATA Dual Host RAID Subsystem

#### Overview

1. LCD Control Panel
2. Power Button
3. HDD LEDs
4. Voltage Level, Temperature, Fan Indicator LEDs
5. Fault LEDs
6. RAID Subsystem: HDD Tray 1~5
7. eSATA Connector
8. FireWire 800 (IEEE 1394b) Bilingual-9pin Connectors
9. USB 2.0 B-Type Connector
10. RJ45 Connector: RAID Management I/O Port
11. RS232 Connector: RAID Management I/O Port
12. PWR: Power LED (Red color)
13. ACT: IDE Activity LED (Green color)
14. Restore button: Clear all Configuration and Restore to Default Settings
15. RJ45 Connector with LEDs: Gigabit Ethernet Port
16. Power Switch: Switching power supply/ Manual-switch input (Default is 230V )



#### 15. LEDs Description

|              |                        |           |
|--------------|------------------------|-----------|
| Status LED   | 1000Mbps               | Green     |
|              | 100/10Mbps             | No signal |
| Activity LED | Accessing the Ethernet | Green     |
|              | Not Accessing          | No signal |

#### Note:

NUFS5030-1 supports dual host interface so you can connect eSATA (7)/FireWire 800 (8)/USB 2.0 (9) and RJ45 (15) ports simultaneously  
 - Connect to eSATA (7): NDFS5030-1 act as eSATA RAID Storage  
 - Connect to RJ45 (15): NDFS5030-1 act as NDAS RAID Storage  
 eSATA/FireWire 800/USB 2.0 and NDAS can concurrently access different volume sets.

#### RAID Function

##### ● RAID Feature

- RAID level 0, 1, 1E, 3, 5, 6 and JBOD (Spanning)
- Multiple RAID selection
- Online Array roaming
- Online RAID level/stripe size migration
- Online RAID capacity expansion and RAID level migration simultaneously
- Online Dynamic Volume set capacity expansion
- Automatically insertion/removal detection and rebuild
- Instant availability and background initialization
- Support S.M.A.R.T NCQ, and OOB staggered spin-up capable drives

##### ● RAID Management

- Bootable CD VT-100 utility for X86-based system initialization
- Field-upgradeable firmware in flash ROM via RS-232 port
- Web browser-based RAID management via ArchHttp Proxy through RS-232 port for Windows, Linux and FreeBSD environment
- Firmware-embedded manager via RS-232 port (platform independent)
- Firmware-embedded Browser-based RAID manager, SMTP manager, SNMP agent, and Telnet function via Ethernet port
- Support controller's API library for customer to write its own AP

##### ● Monitors/ Notification

- Push Buttons and LCD Display Panel for setup and configuration (option)
- 5 drive LED indicators and 3 environment LED indicators
- System Status indication through LCD, LED and alarm buzzer

##### ● Operating System Requirements

- OS Independent

#### What is NDAS?

NDAS(Network Direct Attached Storage) is a technology which enables all digital storage devices(HDD, ODD, Memory, Tape Drives) connect into standard Ethernet network and all the users or systems in the network directly control, use and share those devices.

##### ● Network

Storage plugs into Ethernet(LAN) ports (wire or wireless) and share with multiple users

##### ● Direct

Each users(or host systems) directly control and use just same as local disk drive (C:)

##### ● Attached

External attachment. Simply plug in to Ethernet, and share it from PC, Laptop, PDA, TV, Audio and many more

##### ● Storage

HDD, DVD, MO, Flash memory, Tape drive, all standard storage

#### Easiest use

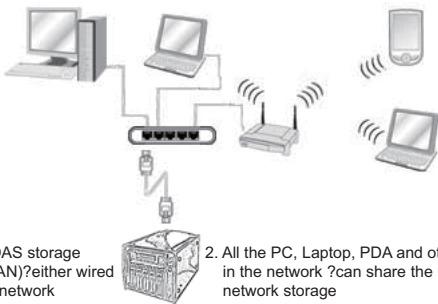
NDAS technology is so simple and easy to use. Anyone who can use a PC can use highest performance without a knowledge of network, folder sharing, TCP/IP configuration, DHCP settings.

## NUFS5030-1

### NDAS & USB/ FireWire 800 (1394b)/ eSATA Dual Host RAID Subsystem

#### ● Plug and play

1. Just plug NDAS storage into network switch (LAN ports) and turn on the switch.
2. Install driver software – just put in driver s/w CD into computer, it is all automatic
3. Add ID and Key for your privacy and security of data enjoy all the performance and feature of NDAS technology



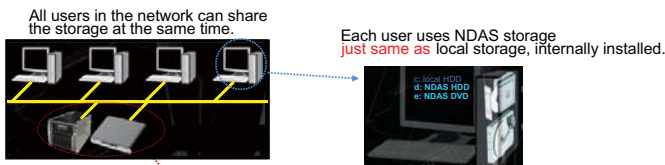
1. Just plug in your NDAS storage into local network(LAN)?either wired network or wireless network
2. All the PC, Laptop, PDA and other system in the network ?can share the high performance network storage

#### ● No setting or configuration required

- No need to setup IP address, or DHCP setting

#### ● Just use

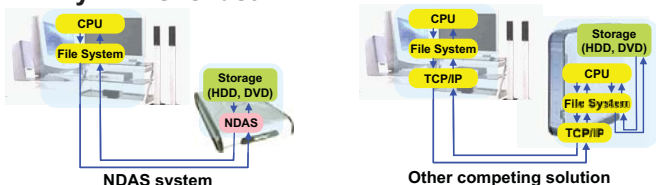
- From your computer it is just same as the storage inside your computer
- Use just as you used PC before. NO NEED FURTHER EXPLANATION!



#### Highest performance

NDAS technology is Network Direct Attached Storage. It is directly attached and controlled. Therefore it is same speed as your storage installed inside your computer. It is the fastest network storage in the world.

#### ● Why NDAS is fast?



- NDAS storage is connected in the network but the structure and data path is same as computer's internal storage.
- Other network storage is complex and has long and many different data process path
- Therefore it is the fastest network storage in the world.

**NDAS Gigabit**

|                |                 |
|----------------|-----------------|
| Read 50.8 MB/s | Write 34.8 MB/s |
|----------------|-----------------|

NDAS made 50MByte/s Possible

**NDAS Giga data process Performance**

#### Security

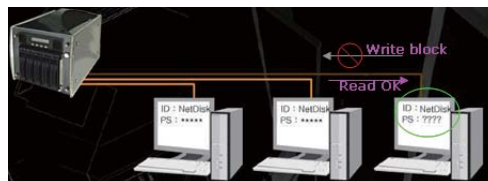
##### ● Access blocking

NDAS has its ID and KEY implanted into its hardware. Secure your ID of NDAS, then no one can even see or access to the NDAS storage even though they are connected in the same network.



##### ● Write blocking

Some times it is required to open read-only to other users in the network, while you are securing the row data in the storage. Secure the KEY and release ID to other users. All other users can read the data but can not write, change, alter, or damage the row data.



##### ● Hacking blocking

NDAS storage is safe from hacking from Internet. Even if your network is also connected to Internet by DSL it is impossible a hacker get into the NDAS storage and steal or damage your data.



## NUFS5030-1

### NDAS & USB/ FireWire 800 (1394b)/ eSATA Dual Host RAID Subsystem

#### Applications

##### ● Save and Share

- Connect NUF5030-1 to your local network (LAN ports)
- Wired or wireless
- up to gigabit speed
- Save all your data into centralized NUF5030-1 and share it from any PC, Laptop, PDA or other NDAS compatible multimedia system



##### ● Secured data sharing

- With NDAS's ID/KEY security, and with its unique network protocol, various structure of secured data sharing is possible
- Even though the network is connected with outside Internet connection, the data in NUF5030-1 is safe from hackers from stealing, damaging or destroying data in
- You can select users and allow to write, change or alter the raw data while allowing other users only to view or read the data and prohibits write, change, alter or damage the original data.



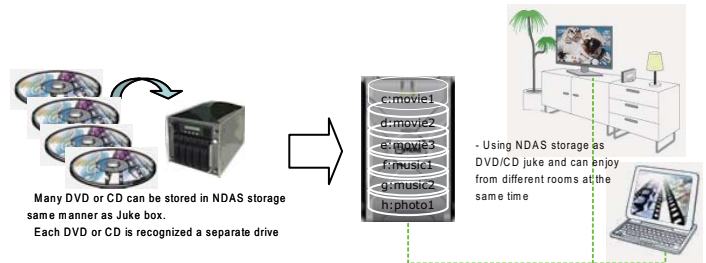
- Key : controls write authority into the NDAS storage
- Without knowing Key, the user can not change, alter, erase, or damage the original data



- ID : controls access to the NDAS storage
- Without knowing ID, the PC can not access nor recognize the existence of the NDAS storage in the network

##### ● DVD/CD Juke

NUFS5030-1 can be used as CD/DVD Juke box. You don't need to spend thousands of \$\$ to get CD/DVD juke system. Get NDAS CD/DVD juke feature license and then you can use your NUF5030-1 as CD/DVD juke. Of course it supports all the NDAS features and performance.



##### ● Multi-Media Library

- In this digital life, multimedia data source is everywhere, digital camera, digital camcorder, mp3, Internet download, TV capture, or email attached file from friends.
- Save all the multi-media data once in NUF5030-1 and only in NUF5030-1, and share from your PC, Laptop, TV, or audio.
- You don't need to have same photo, music, and video copied here and there, or send/receive back and forth anywhere.



##### ● DVR, Surveillance system

With NDAS technology, DVR or surveillance camera system can be structured at lower cost, with more flexibility, and enhance the performance or video quality.

By using NDAS technology, a simple camera with NUF5030-1 can replace complex DVR server, and can make higher performance system at the cost of less than 50%