U-Reach

Hard Disk Drive Duplicator

User Guide
V2.0
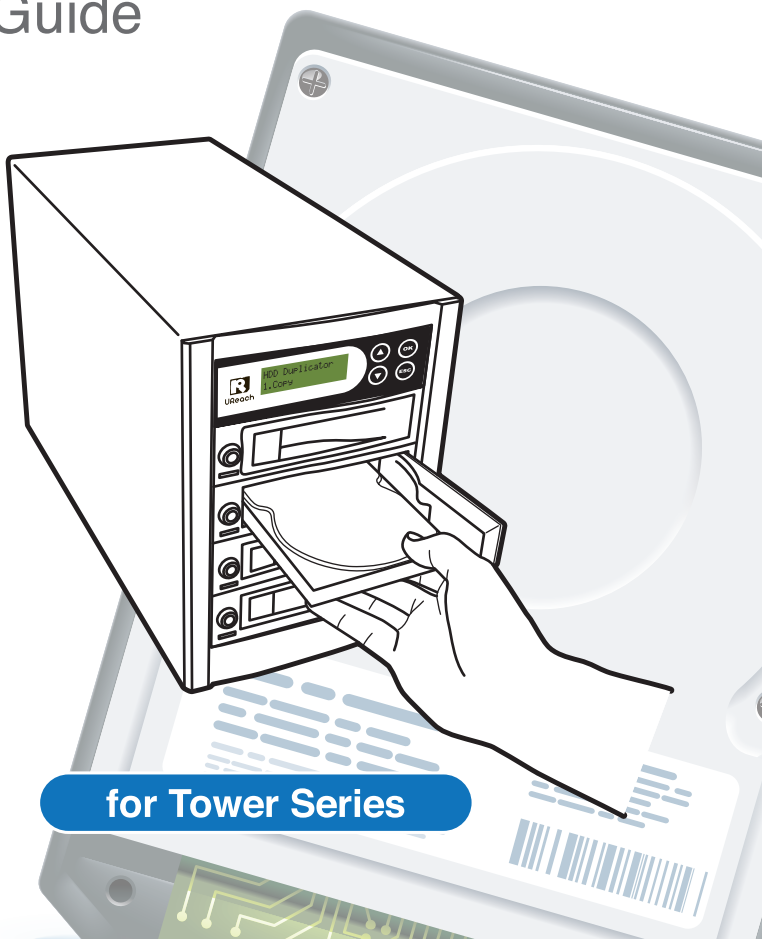
for Tower Series

Content

1. Features

- High copy speed supports up to 90MB/second.
- Supports 2.5" and 3.5" SATA HDD, IDE HDD and SSD.
- Supports 3 different duplicator mode; quick copy (System and files), All
- partitions and Whole HDD.
- Supports Linux(Ext2/Ext3), NTFS, FAT quick copy mode copies only Data and
- System area increases copy speed.
- Supports DoD standard erase function.
- Auto detects and shows the bad sector quantity.

2. Product Overview

A. System Overview

LCD Panel

Locker

Backward
Confirm / OK
Cancel / Back
Forward

HDD mobile rack

HDD

Power Botton

B. LCD Configuration

Number of target HDD

Function →

Time (mm:SS) →

```
Copy x2     150GB
1:00 10% 3000MB
```

← Total size
← Copied processed size

Copy progress %
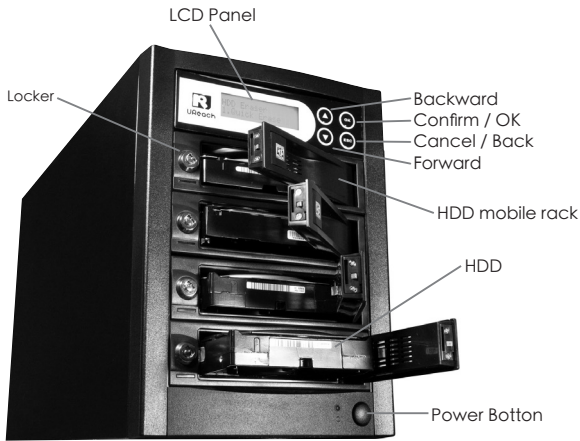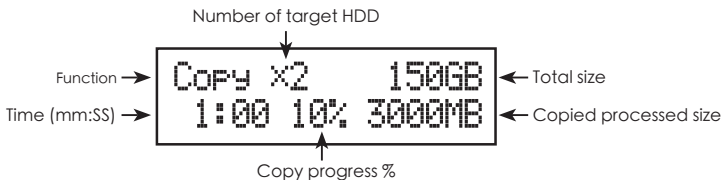
3. Function Table

Function	Description		
1. Copy	Copies scource HDD to multiple HDD.See function 6 in set up for copy options.		
2. Compare	Compares source and target data bit by bit.		
3. Copy+Compare	Performs both copy then compare when this function is selected.		
4. Erase Note: Function 6.3 can select to erase source HDD or not	4.1 Quick Erase Erases HDD's index table only.		
	4.2 Full Erase Erase the whole HDD content.		
	4.3 DoD erase Erase HDDs three times complying with USA Department of Defense (DoD) standard.		
	4.4 DoD EraseComp Erases HDDs three times complying with USA Department of Defence (DoD) standard and performs a bit by bit check to see if data is completely erased.		
5. Utility	5.1 Show HDD info Shows HDD's basic information such as HDD model name and capacity		
	5.2 Update System	5.2.1 Update BIOS To update firmware on the system via the HDD.	
		5.2.2 Format HDD To format the HDD with a 2GB FAT partition in order to quickly save firmware in the HDD.	
	5.3 System Info This function will show information of the duplicator system, including controller model number and software version.		
6. Setup	6.1 Copy Area Setup copy mode.	6.1.1 System and files Set to copy source HDD's data area only.	
		6.1.2 A11 partitions Set to copy source HDD's all partitions.	
		6.1.3 Whole HDD Set to copy the whole source HDD.	
	6.2 Skip Error Set to ignore error of source HDD while copying. (0-65535)		
	6.3 Erase Master Setup to erase source HDD or not.	6.3.1 Disable Disable erase source HDD.	
		6.3.2 Enable Enable erase source HDD.	
	6.4 Unknown Format	6.4.1 Copy unknown Copies unknown area which the device cannot identify the format.	
		6.4.2 Skip unknown Skip copy unknown area when the duplicator can not identify the format.	
	6.5 Transfer Rate Select the proper transfer rate UDMA2-7. 7 is the fastest.		
	6.6 Erase Pattern	6.6.1 ONE Byte A random character to be written into every byte.	
		6.6.2 4MB Byte A set of random character to be written into a set of area.	
	6.7 Language English / Japanese		
	6.8 Restore Default Back to original manufacturer setting.		

1. Copy

It copies data from source HDD to target HDD. Please ensure you select the required copy mode you require. Refer to function [6.1 Copy Area] for details.

> (i) The default setting is "System and Files".

2. Compare

It is used to check if the data on source HDD is identical to target HDD after duplication.

3. Copy & Compare

It makes copy first and then compare the source with the target copy to check data is identical.

Please note:

a. Shows the quantity of bad sector in Source and Target HDDs.

Copy Process

```
Copy          7730MB
 1:08 78% 5786MB
```

Copied Time ──→ | ──── Total data capacity
──── Copied data capacity
Copy Process
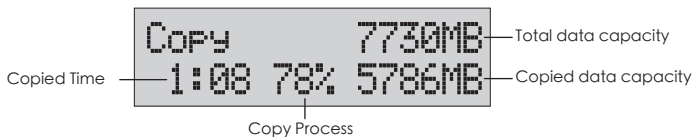
(if there is any bad sector)

```
Bad Sector R:0
 2:22 66%  W:1
```

Copied Time ──→ | ──── Source bad sector
──── Target bad sector
Copy Process
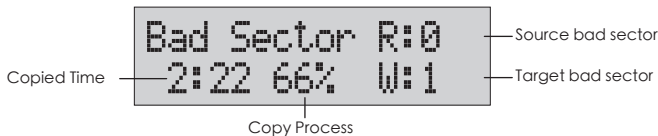
Copy result:

(Pass)

```
Pass  2:18
 No Bad Sector !
```

(Fail)

Total copy Time

```
Fail  2:14
Bad Sector R0 W1
```

Target bad sector

Source bad sector

> (i) The default setting of error counter is 0.You can increase the accepted error sectors of the HDD, by using function 6.2 to setup "skip error".

b. Select the required copy mode in function 6.1 Copy Area, the Default setting is quick copy mode "System and Files".

> (i) The special features of quick copy System and Files:
> • Using this copy mode, the system will analyze the source's copy data area only, and only copy data and system files of the HDD. There is no need to copy the empty space.
> • This function only supports FAT, NTFS and Linux (Ext2and Ext3).
> • We strongly recommend that you use the same capacity HDD for source and target.

4. Erase

Select the required erase mode in function 6.3

> (i) Function 6.3 Erase Master gives the option to erase the source HDD. The default setting is "Disable erase source HDD".
>
> The function can be stopped while processing by pressing [ESC] for about 3~4 seconds.

Chapter 2 - Function Introduction

4.1 Quick Erase

This function only erases the HDD index.. It is the quickest way to erase HDD. It will damage the data in the HDD, please make sure you backup all important data before using this function.

4.2 Full Erase

This function will erase all HDD sectors. It will take longer tthan quick erase. It will damage the data in HDD, please make sure you backup all important data before using this function.

4.3 DoD Erase

This is to comply with the U.S.A. Department of Defence (DoD 5220) standard to fully erase the HDD three times bit by bit to rewrite HDD and guarantee all data is erased. It will damage the data in HDD, please make sure you backup all important data before using this function.

Steps of Erase:

① Showing how many HDD are ready, press ⓞⓚ to start.

```
DoD Erase
        1 ready
```

② Erasing.

```
Erasing 1 HDD
DoD            5:20
```

③ Shows the result when finish.

```
Time: 1:30:09
Pass 1        Fail 0
```

Chapter 2 - Function Introduction

4.4 DoD Erase Comp

As well as DoD erase, this function will also execute compare function to make sure the random bit was correctly written. This function erases each sector of the HDD three times: the first time with zeros (0x00), second time with 0xFF and the third time with random characters. and performs a bit by bit check to see if data is completely erased. It will damage the data in HDD, please make sure you backup all important data before using this function.

DoD EraseComp Method:
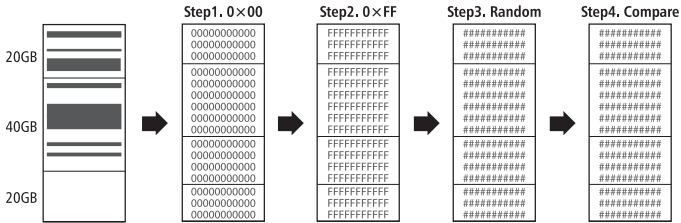
**The erasing time of DoD Erase mode is three times longer than Full Erase mode, and the time of DoD EraseComp is four times longer than Full Erase mode.

5. Utility

5.1 Show HDD Info.

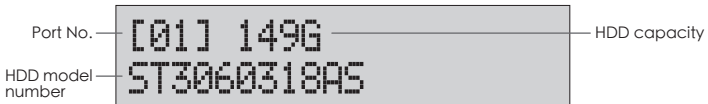This function will show HDD's basic information such as HDD capacity and model number.

Steps of Show HDD Info.:

① Select function.

```
[5.Utility]
1.Show HDD Info.
```

② Shows HDD information.

Port No. ——— `[01] 149G` ——— HDD capacity

HDD model number ——— `ST3060318AS`

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5.2 Update System

You can follow the steps to update system firmware:

① Select Function 5.2.2

```
[Update System]
2.Format HDD
```

Format HDD

```
Do FORMAT HDD#1
      Confirm ?
```

② Download the BIOS from PC to your HDD.

HDD

HDD Enclosure

USB

PC
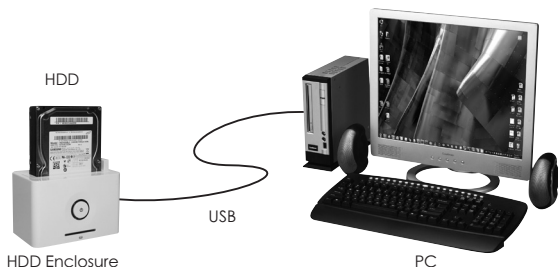
> ⓘ The purpose of this is because 2GB FATHDD Partition can speed up update process.

③ Plug the HDD into duplicator, select function 5.2.1 to update BIOS.

```
[Update System]
1.Update BIOS
```

5.3 System Info.

This function shows the duplicator information such as model name and firmware version.

```
HDD Dupe 1-3
Ver:2.27.1
```

BIOS version

6. Setup

6.1 Copy Area

6.1.1 System and Files

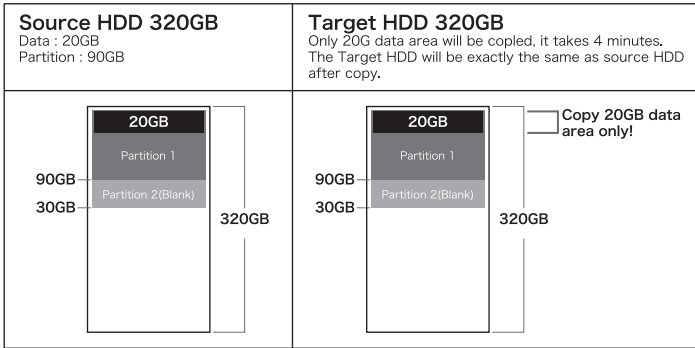It copies the source HDD's System and Files instead of the whole HDD. The system will analyze the source HDD and identify the data area to copy. As long as the source HDD's data is within the target HDD's free space, the copy will be processed.

```
[Copy Area]
   System and Files
```

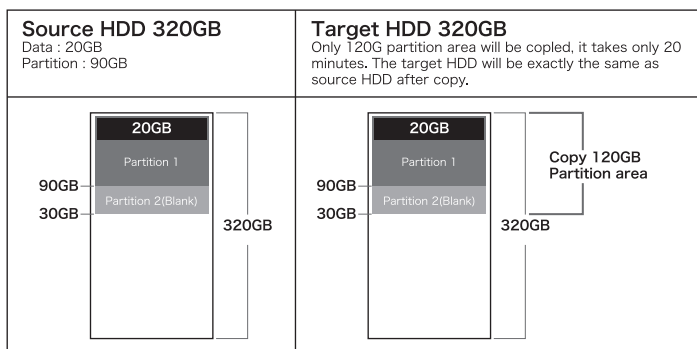| Source HDD 320GB	Target HDD 320GB
Data : 20GB Partition : 90GB	Only 20G data area will be copied, it takes 4 minutes. The Target HDD will be exactly the same as source HDD after copy.

ⓘ System and Files only supports FAT, NTFS and EXT2 / EXT3 for quick copy.

6.1.2 All Partitions

This mode will copy all of the partitions bit by bit including the free space. The capacity of target HDD has to be larger than all the partitions.
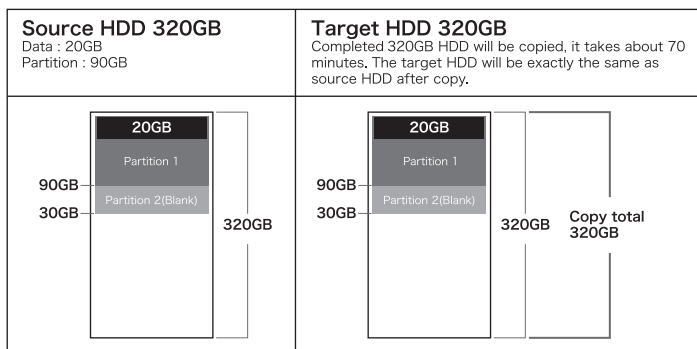
```
[Copy Area]
   ALL Partitions
```

Source HDD 320GB
Data : 20GB
Partition : 90GB

Target HDD 320GB
Only 120G partition area will be copied, it takes only 20 minutes. The target HDD will be exactly the same as source HDD after copy.

20GB

Partition 1

Partition 2(Blank)

90GB
30GB

320GB

20GB

Partition 1

Partition 2(Blank)

90GB
30GB

320GB

Copy 120GB
Partition area

6.1.3 Whole HDD

Copies the entire HDD, regardless of content, format, partition or free space.

This mode will take much more time to duplicate the source HDD completely.

```
[Copy Area]
    Whole HDD
```

Source HDD 320GB
Data : 20GB
Partition : 90GB

Target HDD 320GB
Completed 320GB HDD will be copied, it takes about 70 minutes. The target HDD will be exactly the same as source HDD after copy.

20GB

Partition 1

Partition 2(Blank)

90GB
30GB

320GB

20GB

Partition 1

Partition 2(Blank)

90GB
30GB

320GB

Copy total
320GB

ⓘ After copy, the remaining space in the copied HDD can be used by PC for further partitioning.

6.2 Skip Error

This function sets the number of errors you are prepared to accept during the copy process.

```
[Skip Error]
      0
```

ⓘ If it's critical that there are no errors on the HDD then the error counter should be set to 0.

6.3 Erase Master

This function allows you the disable or enable the source from the erase functions.

```
[Erase Master]
     Disable
```

```
[Erase Master]
     Enable
```

6.4 Unknown Format

This function allows you to copy or skip any areas with unknown format.

6.4.1 Copy unknown

Copies all the unknown area even if the format is not identified.

```
[Unknown Format]
    Copy Unknown
```

6.4.2 Skip unknown

Skips the unknown format area during copy process.

```
[Unknown Format]
    Skip Unknown
```

Chapter 2 - Function Introduction

6.5 Transfer Rate

You can select the best transfer rate from UDMA 2 to UDMA7 for your HDD duplication progress. If you are not confident on the HDD quality or you find a high failure rate on copy or compare. It is recommended to slow down the UDMA mode.

```
[Transfer Rate]
        UDMA 5
```

6.6 Erase Pattern

Select different erase method.

6.6.1 ONE Byte
A random character to be written into every byte.

```
[Erase Pattern]
       ONE Byte
```

6.6.2 4MB Byte
A set of random character to be written into a set of area.

```
[Erase Pattern]
       4MB Byte
```

6.7 Language

English and Japanese are available for selection.

6.8 Restore Default

Select and go back to the manufacturer's default setting.

Chapter 3. Specification

Model		HD-S01	HD-S03	HD-S05	HD-S07
Target		1:1	1:3	1:5	1:7
Interface		SATA			
Drive Capability		3.5" / 2.5" (adapter optional)			
Transfer Rate		90 MB/Sec.			
Display		2x16 Backlight Monochrome LCD			
Input		4 push buttons (Forward/ Backward/ OK/ Cancel)			
Language Support		English, Japanese			
Copy Mode		Only Data, All Partition, Whole HDD			
Erase Mode		Quick Erase, Full Erase, DoD Erase, DoD EraseComp			
Power	System require (max)	80W	180W	250W	300W
	Voltage	5, 12V			
Weight (kg)		6.0	6.5	8.2	10.0
Dimension (L*W*H cm)		28*19*16	41*17*28	41*19*35	40*22*45
Safety		FCC, CE, RoHS			

* The above information is for marketing reference only. The actual specification may subject to change without notice.