

# Carry<sup>HDD</sup> Mini Duplicator

V 3.3

## PRO118 (1-1) HDD Duplicator User Guide



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## **Product Disclaimer**

U-Reach is not accountable for any incidental or consequential damages, which includes, but is not constrained to property harm, loss of time or data from use of a U-Reach product, or any other damages attributable to product malfunction or failure (including without limitation, those attributable to: (1) reliance of the materials provided, (2) costs of product replacement, (3) loss of use, data or profits, (4) delays or business interruptions, (5) and any principle of legal responsibility, arising out of or in reference to the use or overall performance or from delays in servicing or lack of ability to render service) of any U-Reach product. U-Reach makes every effort to ensure proper operation of all products. However, the customer is responsible to affirm that out of the U-Reach product meets the customer's quality requirement. The customer further acknowledges that fallacious operation of U-Reach product and/or software program, or hardware issues, can cause loss of data, defective formatting, or data loading. U-Reach will make efforts to resolve or repair any issues recognized by customer either within the warranty period or on a time and materials basis.

Specifications and features subject to change without notice or obligation.

## **Warranty**

U-Reach provides a basic one-year parts and labor warranty for all of its products (excluding cables, adapters, and other consumable items). An optional extended warranty is also available for an added cost. Telephone and email support is available for the life of the product as defined by U-Reach.

All warranties will be restricted and defined by the market region from which customers purchased.

## **Piracy Statement**

U-Reach accepts no responsibility for copyright infringement or misuse of any U-Reach equipment. Copying all forms of data: audio, video, or software without the permission of the copyright holder is illegal. It is the sole responsibility of the user to ensure that the legal copyrights of the copyright owners are respected.

# Before You Start

## Important Notice

- Carefully read the entire manual before operating.
- Make sure the source device is correct and functioning.
- Equal capacity of source and target is recommended for guaranteed data consistency.
- Using the Copy+Compare function provides the most flawless duplication.
- Damage incurred due to noncompliance with U-Reach operating instructions will void the warranty.
- Store the equipment safely when not in use and keep out of the reach of children.
- Please turn off duplicator before replacing a socket.
- Never turn off the power while the firmware is updating.
- Use only approved, stable power sources.
- Use product only in a clean, dry, dust-free, and ventilated area. Liquids or foreign debris can severely damage your duplicator.
- It is typical for the machine to heat up during operation.
- While in use, do not move the duplicator or remove HDDs.
- Static electricity may cause duplication error. Please pay attention to the duplicator’s environment and operator’s equipment. Purchasing static electricity elimination equipment to avoid static electricity shock while in high static electricity areas.

## Notice Symbols

Special items, procedures, or notes should be noticed by users before operation.

Note	Refers to related duplicator operations, special details, tips, or suggestions for operational effectiveness.
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Caution	Refers to procedures that need to be adhered to or precautions.
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# Product Features

## Ultra-High Speed

Ultra-high transmission speed for each port operating individually.

## 4 Copy Modes

Four copy modes to meet different requirements: Systems and Files, All Partition, Whole HDD, and Percentage Copy.

## 4 Sanitizing Modes

Quick Erase, Full Erase, DoD Erase and Secure Erase

## Ultra-High Speed Data Compare

The superior hardware bit-by-bit Compare function is the most secure way to guarantee absolutely accurate data duplication.

## Support 3.5", 2.5" and 1.8" HDD

Both SAS and SATA exist without requiring an additional adapter or manual change interface cable.

## Quick Copy Mode

Supports FAT16/32/64, ext2/3/4, NTFS, HFS/HFS+/HFSX, GPT, and Dynamic HDD format. It will only copy the data and system area, which highly enhances copy efficiency.

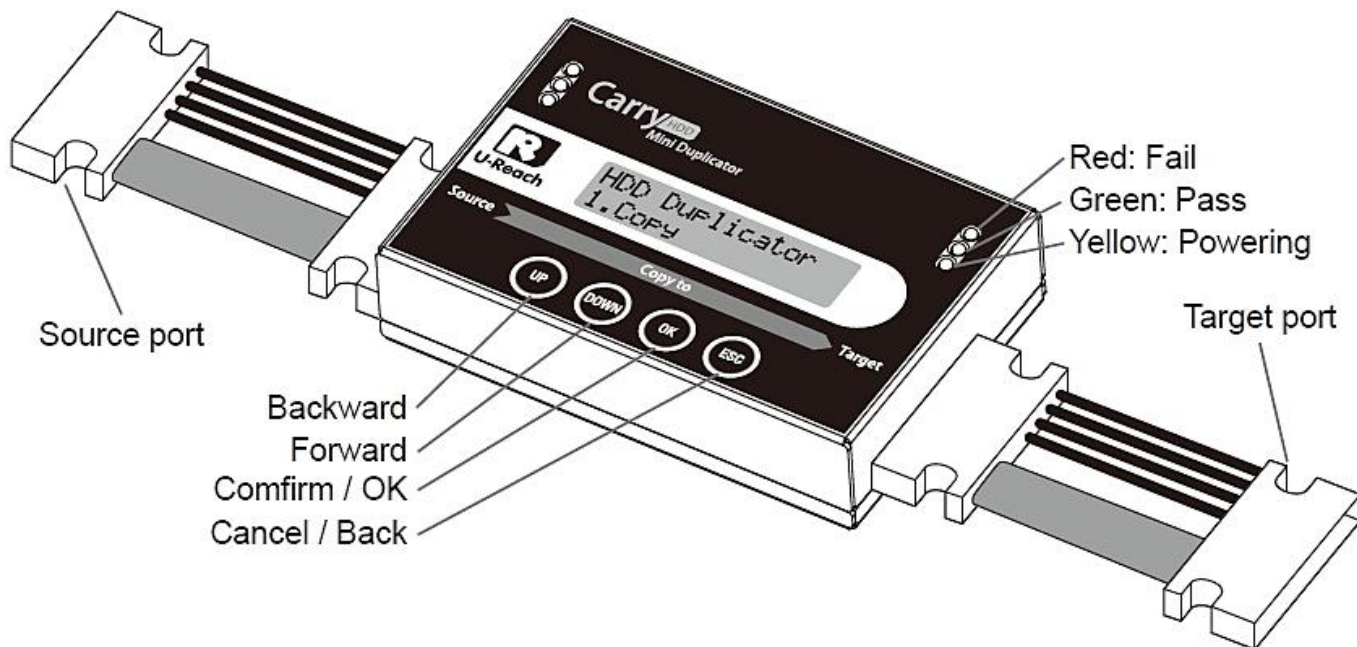
## Auto Power-Down System

Protects the HDD from damage during hot removal from the duplicator.

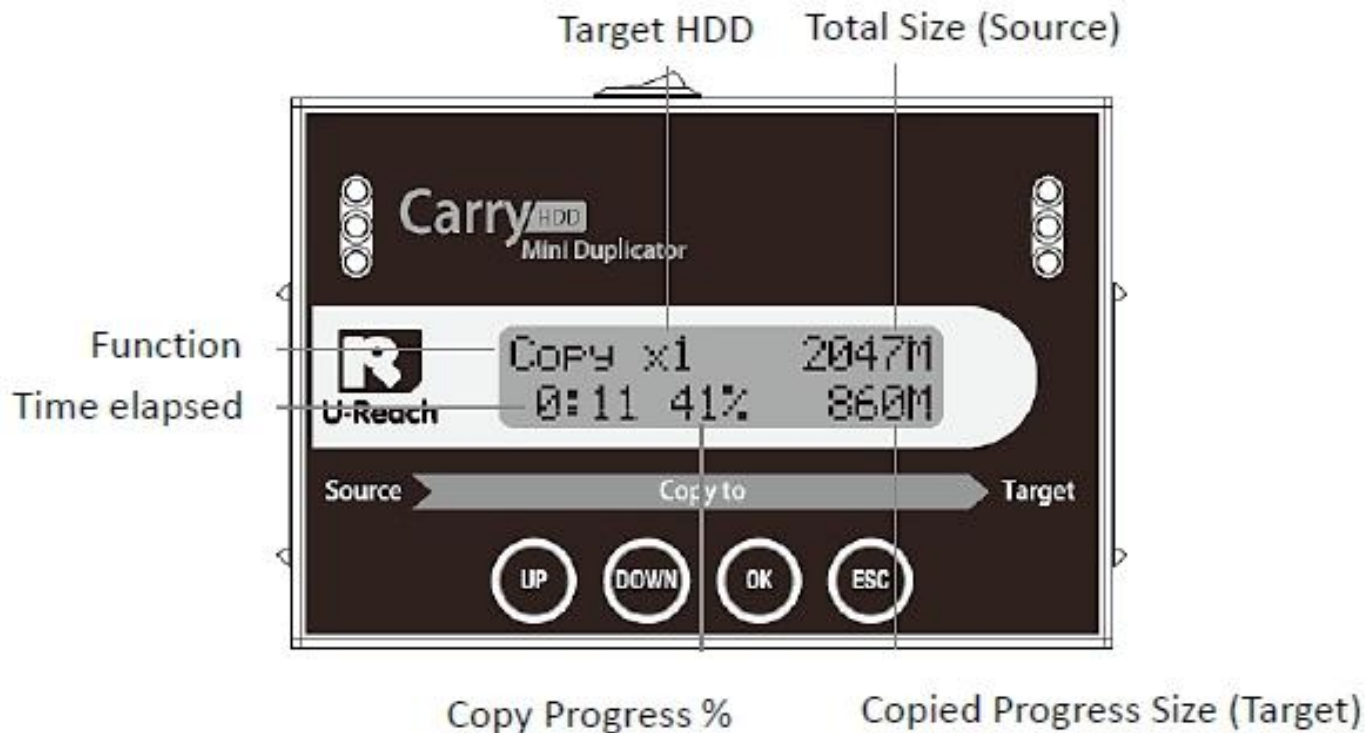
# Product Overview

## A. Hardware

### PRO118 (1-1)



## B. LCD Configuration



# Function Table

Function	Description	
<b>1. Copy</b>	Copies data from source HDD to targets. (There are four copy modes for selection using function 6.1)	
<b>2. Compare</b>	Compares data bit by bit between source and target HDDs.	
<b>3. Copy+Compare</b>	First copies, then compares target HDD with source HDD to ensure data accuracy.	
<b>4. Erase</b>	<b>4.1 Quick Erase</b> Erases HDD's index table only.	
	<b>4.2 Full Erase</b> Erases whole HDD. Complies with NIST800-88 Standards.	
	<b>4.3 DoD Erase</b> 3-Pass erases the entire device capacity. Complies with DoD5220.22-M Standards.	
	<b>4.4 DoD EraseComp</b> 3-Pass erases the entire device capacity and verifies. Conforms to DoD5220.22-M Standards.	
	<b>4.5 Secure Erase</b> Overwrites every single track on the hard drive with "00". Even HPA/DCO or other data area that are not able to load, can be erased all together.	
<b>5. Utility</b>	<b>5.1 Show Disk Info.</b> Shows HDD's basic information such as HDD model name and capacity.	
	<b>5.2 Update System</b>	<b>5.2.1 Update BIOS</b> Updates system firmware via a USB pen drive or a HDD.
		<b>5.2.2 Create Update HDD</b> Formats the HDD with a 2GB FAT partition in order to quickly save firmware in the HDD.
	<b>5.3 System Info.</b> Displays duplicator system information, such as, controller model number and software version.	



<b>6. Setup</b>	<b>6.1 Copy Area</b> Setup copy mode.	<b>System and Files</b> Copies source HDD's data only.		
		<b>ALL Partitions</b> Copies source HDD's all partitions.		
		<b>Whole HDD</b> Copies the whole source HDD.		
		<b>Percentage (%)</b> Sets percentage range of HDD for copy.		
	<b>6.2 Skip Error</b> Sets skip error of source HDD while Copy/Compare/Erase.			
	<b>6.3 Language</b> Sets preferred language.			
	<b>6.4 Advanced Setup</b>	<b>6.4.1 Unknown Format</b>	<b>Copy Unknown</b> Copies unknown format area.	
			<b>Skip Unknown</b> Skips copy of unknown area.	
		<b>6.4.2 Erase Master</b>	<b>Disable</b> Disables erase source HDD.	
			<b>Enable</b> Enables erase source HDD.	
		<b>6.4.3 Erase Pattern</b>	<b>ONE Byte</b> A random character is written into every byte.	
			<b>Big Random Data</b> A set of random characters are written into a set area.	
		<b>6.4.4 Wait HDD Time</b> Auto starts after plugging in HDD and waiting. Set from 0~30 seconds.		
		<b>6.4.5 Transfer Rate</b> Sets the proper transfer rate UDMA2-7.		
		<b>6.4.6 Stop Motor Time</b> Autorun time after motor stops.		
<b>6.5 Restore Default</b> Reverts everything back to original manufacturer setting.				

***\*Above functions and features are subject to change without notice.***

# Function Introduction

## 1. Copy

### Step 1: Prepare source and target devices.

Prepare a source HDD and target HDDs.

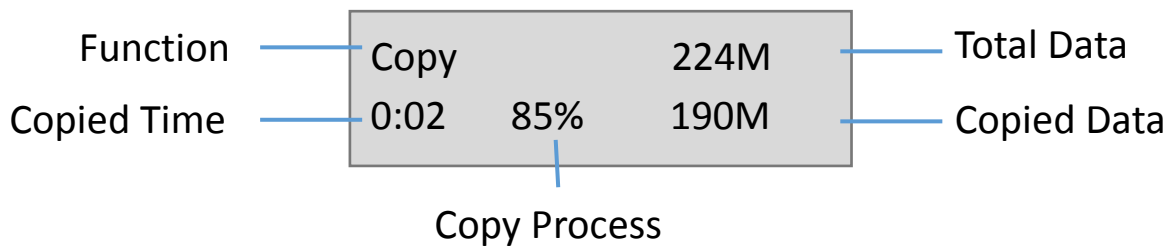
**Note**

Recommendation: Target device(s)' capacity must be equal to or larger than the source device capacity.

### Step 2: Connect source and target device.

### Step 3: Proceed to copy.

The information below shows on LCD during duplication.



### Step 4: Copy Completed!

The result of pass or fail, copied duration and quantity of bad sector will be displayed on the LCD following duplication.

#### Copy result

Pass

Pass 0:05  
No Bad Sector!

Total copy time

Fail

Fail 0:05  
Bad Sector R0 W1

## 2. Compare

Proceed to verify device(s).

Scroll to select "2. Compare", then press "OK" to start the verification process.

## 3. Copy+Compare

Sequentially automates from Function 1, Copy to Function 2, Compare.

Scroll to select "3. Copy+Compare", then press "OK" to start the automated duplication and verification process.

### Note

It is recommended to execute Compare after Copy to confirm accuracy. Use the function "3. Copy+Compare".

## 4. Erase

There are 4 submenu modes.

### Caution

Please backup all important data before using this function.

### Step 1: Connect device(s) for sanitizing.

### Note

Source Port is disabled for erasing by default. Go to 6.7.2 to enable source port erasing.

### Step 2: Enter function "4. Erase"

Scroll to select "4. Erase", then press "OK" to view the 4 submenus.

### Note

Press "ESC" for 5 seconds to stop all the erase jobs.

### 4.1 Quick Erase

This function will erase the index table from the connected device(s).

Scroll to select "4.1. Quick Erase", then press "OK" to start the erase process.

### 4.2 Full Erase

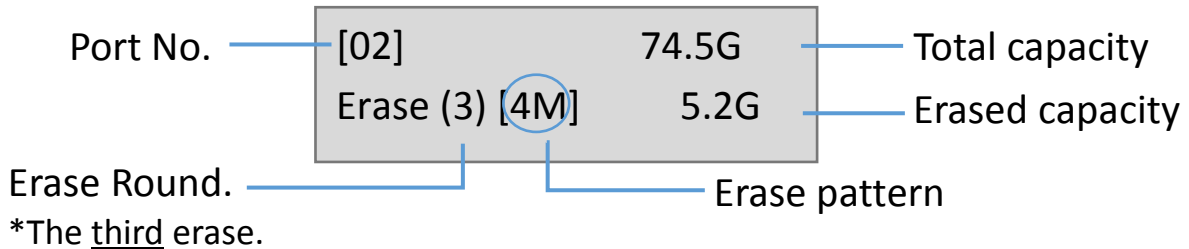
This function will erase all data per NIST 800-88 Standards on the connected device(s).

Scroll to select "4.2 Full Erase", then press "OK" to start the erase process.

### 4.3 DoD Erase

This function will erase all data per DoD 5220.22-M Standards on the connected device(s).

Scroll to select "4.3 DoD Erase", then press "OK" to start the erasing process.



### 4.4 DoD EraseComp

This function will erase all data per DoD 5220.22-M Standards, then verify erasure of the connected device(s).

Scroll to select "4.4 DoD EraseCom", then press "OK" to start the erase and verification process.

### 4.5 Secure Erase

This function erases the unloadable areas complying with NIST 800-88 Standards.

Scroll to select "4.6 Secure Erase ", then press "OK" to start the erasing process.

## 5. Utility

This menu contains submenus related to device information, system information and updates.

Scroll to select "5. Utility", then press "OK" to view the submenus.

### 5.1 Show Disk Info.

This function will display basic information such as device model and capacity. Press "OK" to check Power cycle, Temperature, and Power-on hour.

Scroll to select "5.1 Disk Info", then press "OK" to view the connected device(s). Next, scroll through to view connected device(s) by port number order. Use ▼ to check the other port.

## 5.2 Update System

### Step 1: Prepare a device for update.

Connect a device to the source port. Scroll to select "5.2.2 Create BIOS Format", then press "OK" to start the format process. This will format the device to a 2GB FAT32 Partition.

[Update System]  
2. Create Update HDD

### Step 2: Download Firmware

Connect this device to PC. Download the latest firmware provided by U-Reach technical support, unzip the BIOS firmware, then save it to the root directory in the device.

**Note** Ensure that the device does not have any bad sectors.

### Step 3: Proceed to update firmware.

Connect this device to the source port. Scroll to select "5.2.1 Update BIOS", then press "OK" to start the firmware update process.

**Caution**

The firmware update process may take longer than 5 minutes. Please do not disrupt power or process during BIOS update. If interrupted, the system will become useless. U-Reach will not be held responsible for any damages.

## 5.3 System Info.

This function will display basic information such as device model, name, capacity, etc...

Scroll to select "5.3 Disk Info", then press "OK" to view the connected device(s). Then scroll through to view all information.

HDD Dupe 1-1  
Ver: 2.35.9

## 6. Setup

This menu contains submenus related to device information, system information and updates.

Scroll to select "6. Utility", then press "OK" to view the submenus.

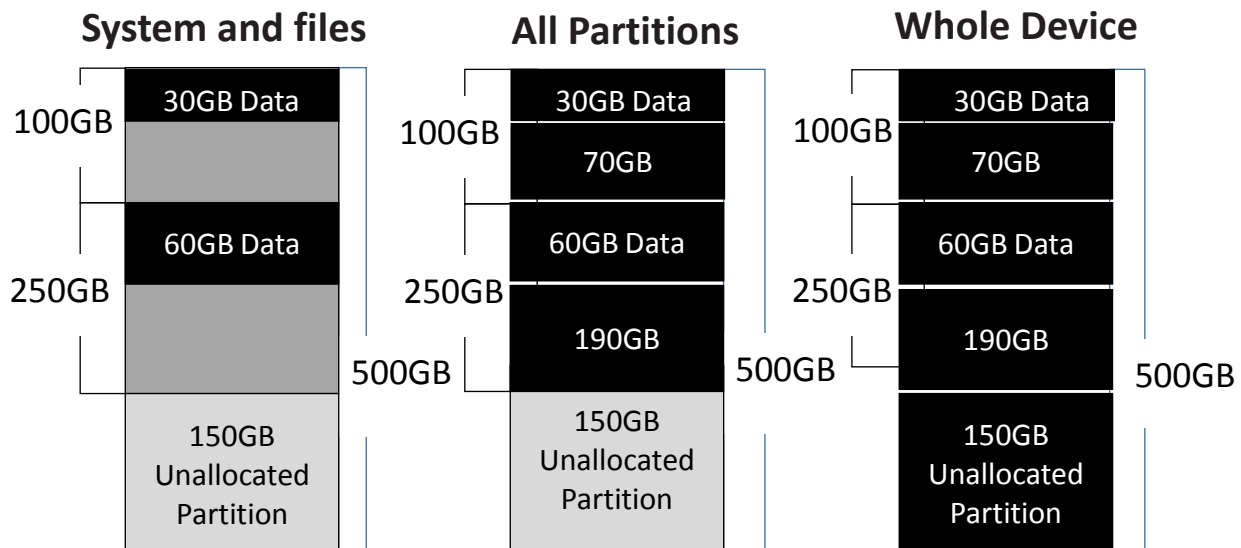
### 6.1 Copy Area

There are 4 submenu modes.

Scroll to select "6.2 Copy Area", then press "OK." Then scroll through to select one of the four copy methods.

- **Selecting the Proper Copy Modes**

Example: there are two defined partitions in a 500GB device. The charts below illustrate what portion would be duplicated.



This function will analyze and copy data only and skip empty spaces.

This function will copy all data within the defined partitions.

This function will copy the entire device.

- **Copy and Compare Preparations**

Please consider the following settings before proceeding with copy or compare:

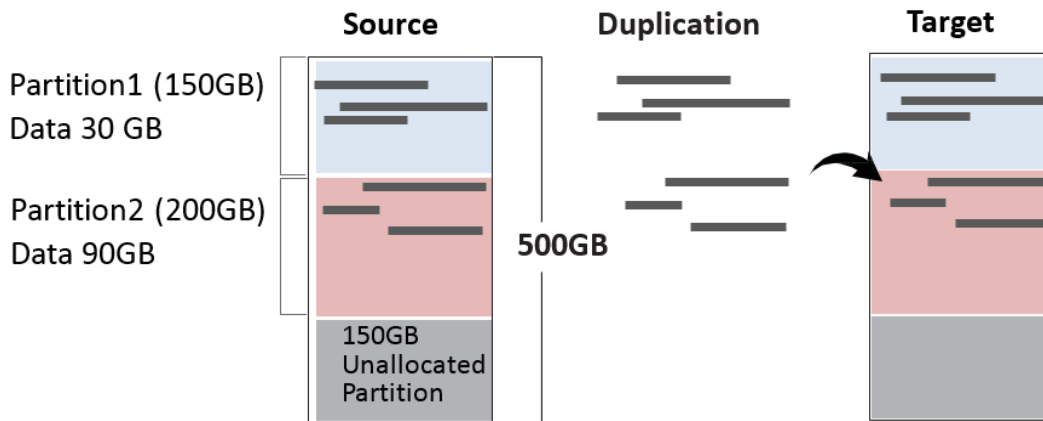
- 6.1 Copy Area
- 6.2 Skip Error

Using appropriate copy modes can greatly reduce operation time and increase efficiency. There are four copy modes with different copy methods.

## ■ System and Files (Quick Copy data area only)

Copies data and skips empty space. Supports only standard formats. Scroll to select "System and Files", then press "OK" to save the copy method.

Allows user to copy source device's System and Files, instead of the entire device. The system will analyze the source device and identify the data area to copy. If the source device's data is within the target device's capacity, the copy will be processed. FAT16/32/64, NTFS, EXT2/EXT3/EXT4, and HFS/HFS+/HFSX are supported in this copy mode.



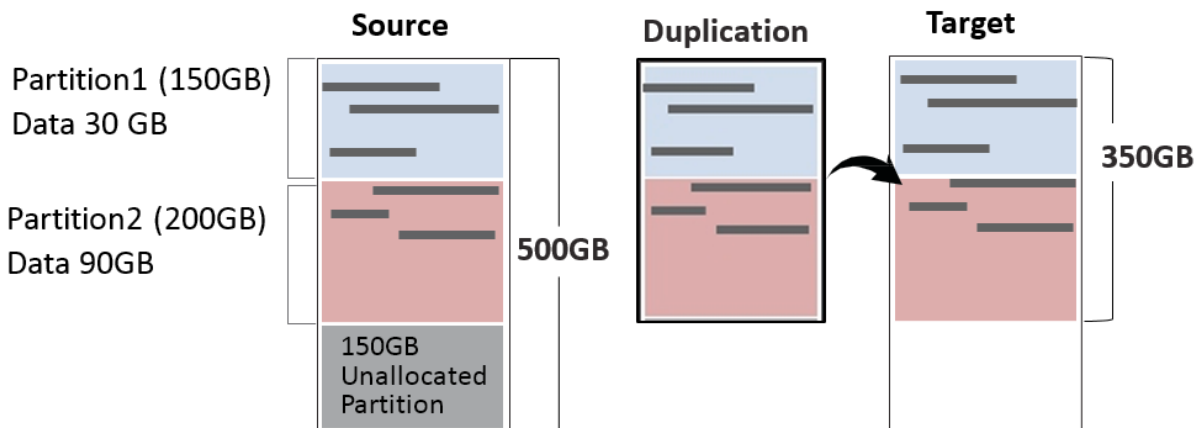
**Only 120G data area will be copied.**

## ■ ALL Partitions

Copy or skip HPA, DCO, unknown partitions, modified formats, etc. defined by settings.

Scroll to select "All Partitions", then press "OK" to save the copy method.

The target device's capacity must be equal to or larger than the source device's capacity.



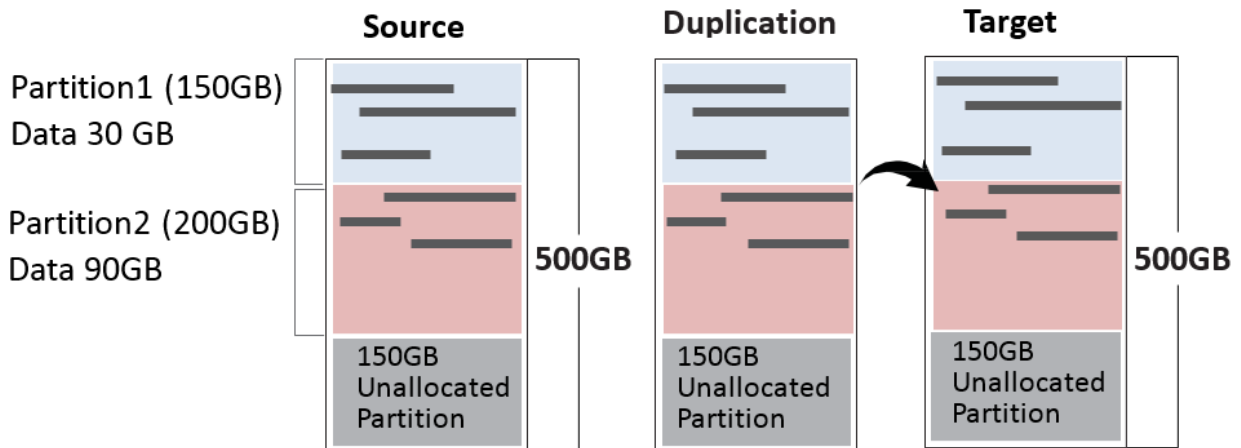
**350GB of all Partitions along with its contents will be copied.**

## ■ Whole HDD

Copies all source data bit by bit.

Scroll to select "Whole Device", then press "OK" to save the copy method.

Copies the whole source device, irrespective of content, format, partition or empty space. This mode does not analyze the data.



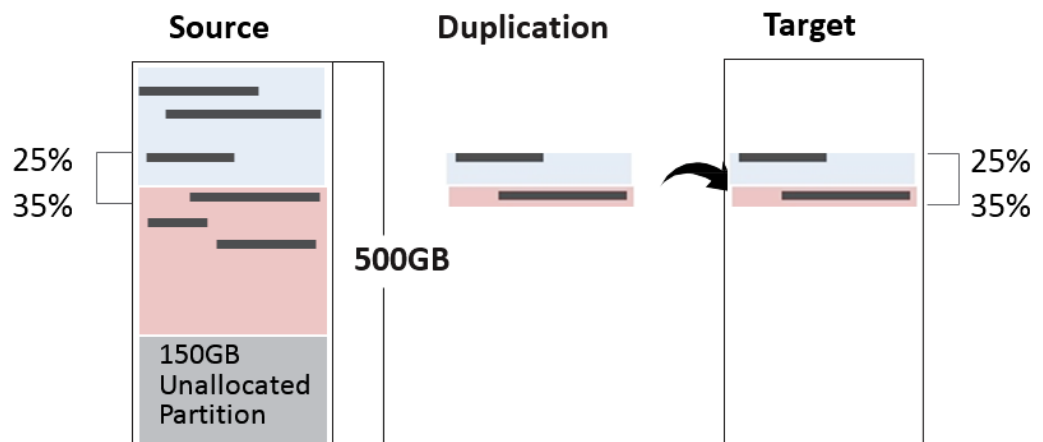
All 500GB of data will be copied.

## ■ Percentage (%)

Select percentage of source capacity to copy.

Scroll to select "6.2.4 Percentage", then press "OK" to save the copy method.

Copies the selected percentage range of the source's total capacity, starting from the initial sector.



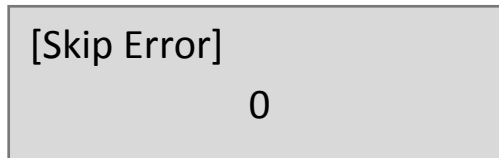
Only copies the selected area.



## 6.2 Skip Error

Skip source bad sectors.

Scroll to select "6.3 Skip Bad Sectors", then press "OK" to scroll through the available values for skipping bad sectors. If the device data is critical and needs to be a full clone, it is recommended to set "Skip Bad Sectors" at "0." Bad sectors can be set as unlimited or at a value from 0 to 65,535.



### Caution

The "Copy+Compare" function is advised for enhanced copy accuracy.

## 6.3 Language

Scroll to select "6.6 Language", then press "OK." Next, scroll through and select the desired language.

## 6.4 Advanced Setup

This function contains menus to fine-tune copy and erase functions.

Scroll to select "6.7 Advanced Setup", then press "OK" to view the submenus.

### 6.4.1 Unknown Format

This function only works with "6.2.1 Copy Area >> System and Files."

Scroll to select "6.7.1 Unknown", then press "OK". Then scroll through to select one of two settings.

Unknown format includes all forms of modified and proprietary data and partitions.

#### ■ Copy Unknown

Copy unknown format(s).

Scroll to select "6.7.1 Unknown Format >> Copy Unknown", then press "OK" to save this setting.

## ■ Skip Unknown

Skip unknown format(s).

Scroll to select "6.7.1 Unknown Format >> Skip Unknown", then press "OK" to save this setting.

## 6.4.2 Erase Master

This function allows user to enable or disable the source port for sanitization.

Scroll to select "6.7.2 Erase Master", then press "OK." Then scroll through to select one of two settings.

### ■ Disabled

Source port will be unable to erase.

Scroll to select "6.7.2 Erase Master >> Disabled", then press "OK" to save this setting.

### ■ Enabled

Source port will be able to erase.

Scroll to select "6.7.2 Erase Master >> Enabled", then press "OK" to save this setting.

## 6.4.3 Erase Pattern

Scroll to select "6.7.3 Erase Pattern", then press "OK". Then scroll through to select one of two settings.

### ■ ONE Byte

Random character will be written per byte.

Scroll to select "6.7.3 Erase Pattern >> One Byte", then press "OK" to save this setting.

### ■ Big Random Data

Random characters are written to a set of area.

Scroll to select "6.7.3 Erase Pattern >> Big Random Data", then press "OK" to save this setting.

#### **6.4.4 Wait HDD Time**

Sets device power up buffer time prior to copy, erase, etc...

Scroll to select "6.7.4 Wait HDD Time", then press "OK" to set buffer time from 3 to 30 seconds. The default is 15 seconds.

#### **6.4.5 Transfer Rate**

Allows user to select the transfer rate.

Scroll to select "6.7.8 Transfer Rate", then press "OK". Select the desired transfer mode from UDMA2 to 7.

The default is UDMA5.

#### **6.4.6 Stop Motor Time**

Sets device power down buffer time prior to device disconnection.

Scroll to select "6.7.9 Stop Motor Time", then press "OK" to set buffer time from 1 to 20 seconds. The default is 5 seconds.

### **6.5 Restore Default**

Restores all settings back to manufacturer defaults.

Scroll to select "6.8 Restore Defaults", then press "OK" to restore settings.

# PRO118 Datasheet



## Product Features

Features	Descriptions
<b>Operation Type</b>	Stand-alone, FPGA based operation (Non-PC based system design).
<b>Controller Design</b>	<ul style="list-style-type: none"> <li>• Embedded controller is designed to support capacities over 18TB+.</li> <li>• Constant improvement supports latest market available devices.</li> </ul>
<b>Transfer Speed</b>	PRO118 speed transfers of up to 7.2 GB/min.
<b>Read-Only Source Port</b>	There is no option to disable this built-in feature and it is integrated with all U-Reach duplicators.

## Product Functions

Functions	Descriptions
<b>4 Copy Modes</b>	<ul style="list-style-type: none"> <li>• <u>Quick Copy (Data &amp; System)</u>: Supports Windows, Mac, and Linux.</li> <li>• <u>All Partitions</u>: Users can skip HPA or unknown partitions.</li> <li>• <u>Whole Device</u>: Copies bit by bit from the master device.</li> <li>• <u>Percentage Copy</u>: Users can set percentages of capacity to be copied.</li> </ul>
<b>Compare (Verification)</b>	Bit by bit data comparison from the source device to target device(s).
<b>4 Sanitization Modes</b>	<ul style="list-style-type: none"> <li>• <u>Quick Erase</u></li> <li>• <u>Full Erase (NIST 800-88)</u></li> <li>• <u>DoD Erase (DoD 5220.22-M)</u></li> <li>• <u>Secure Erase (NIST 800-88)</u></li> </ul>

<b>Skip Bad Sectors</b>	Sets the number of bad sectors to skip.
<b>Unknown Format</b>	Sets whether to copy or skip unknown formats.
<b>Erase Source Port</b>	Enables or disables source port from being erased.
<b>Transfer Modes</b>	Sets the transfer rate.

## Product Compatibilities

Compatibilities	Descriptions
<b>Compatible Devices</b>	1.8"/2.5"/3.5" eSATA/SATA HDDs and SSDs.
<b>Compatible Devices (Requires Optional Adapters)</b>	2.5"/3.5" IDE, iVDR, mSATA SSD, MicroSATA, M.2 (NGFF), CFast and Panasonic CF-29 through CF-74.
<b>Supported Formats</b>	<ul style="list-style-type: none"> <li>Quick Copy Function: FAT16/32/64, Windows (NTFS), Linux (Ext2/Ext3/Ext4) and Mac (HFS, HFS+, HFSX).</li> <li>Whole Device Copy Function: All Formats, including proprietary formats.</li> <li>GPT, MBR and Advanced Formats.</li> </ul>
Compatibilities	Descriptions
<b>Supported O/S</b>	All (Windows, Mac, Linux and other proprietary systems).

## Product Specifications

Specifications	Descriptions
<b>LCD Display</b>	Backlit Monochrome LCD Display
<b>LEDs</b>	3 LED Indicators per Port: Yellow (Power), Green (Pass) and Red (Fail)
<b>Control Panel</b>	4 Push Buttons (▲, ▼, OK, ESC)
<b>Power Requirements</b>	100V-240V ~ 50-60Hz 12V5A
<b>Temperature</b>	<u>Operating</u> : 5°C ~ 45°C ( <b>41°F ~ 113°F</b> ) <u>Non-operating</u> : -20°C ~ 85°C ( <b>-4°F ~ 185°F</b> )
<b>Humidity</b>	<u>Operating</u> : 20% ~ 80%, non-condensing <u>Non-operating</u> : 5% to 95%, non-condensing
<b>Physical Dimensions (L×W×H)</b>	115 x 80 x 30 mm
<b>Product Weight</b>	360g
<b>Certifications</b>	FCC, CE, RoHS

*\*Specifications are subject to change without notice.*