



Pantera USB/SD/CF Duplicator User Manual



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The source port of duplicator is write-protected, and the settings and data content of any storage device in the source port will not be changed at all. Do not place the source storage device on the target port to avoid accidentally changing (deleting) of data. It has nothing to do with EZ Dupe if there is any mistake in correcting (deleting) the data by user. In addition, EZ Dupe is not responsible for the risks and data losses incurred as a result of duplication. By purchasing this product, the user accepts this statement and agrees to be bound by it.

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Before Use

1. Please read this manual carefully before operation to avoid any misconduct.
2. Make sure that the storage device you want to use is of good quality and can be used normally.
3. The capacity of target storage device must be greater than or equal to the capacity of source storage device to avoid incomplete data backup.
4. It is recommended to use the Copy + Compare function when backing up, to ensure that the backup data is 100% the same as the source data, because the target storage device may have write errors or damaged sectors.
5. When updating the firmware, please do not turn off the power. If the power is interrupted accidentally, the machine cannot be turned on, and it must be returned to the factory for processing.
6. Keep the duplicator used in a dry environment. Rain, moisture, liquid, etc. may corrode the circuit board and cause the machine to malfunction.
7. Avoid using the duplicator in dusty or dusty environments. Dust may cause bad contact with the port.
8. This product warranty does not apply to accident, man-made destruction, abuse, or improper use (such as using not in accordance with the product description, or intended to exceed the scope of use for which this product was designed, or improper use of fixtures, etc.)
9. If the duplicator performs normally, it is strongly recommended not to update the firmware, unless there is a problem in use or a new function is required.
10. For convenience, the source storage device will be referred to as the source device, and the target storage device will be referred to as the target device in this manual. The storage device used can be USB flash drive, SD or CF memory card based on the model of duplicator.

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I. Introduction

This duplicator system is designed and developed based on the FPGA from the world famous semiconductor company XILINX. Every processing channel is parallel to each other with its own control unit, therefore the duplicator will not sacrifice speed for the increasing number of targets loaded - always remain the same and fast copy speed. The duplicator supports fast copy with multiple file formats created by three major operating systems (Windows/Linux/MAC), and makes mirror copies of data efficiently. Furthermore, this duplicator has been fully tested with quality assurance before leaving our manufacturing facility.

1. Features

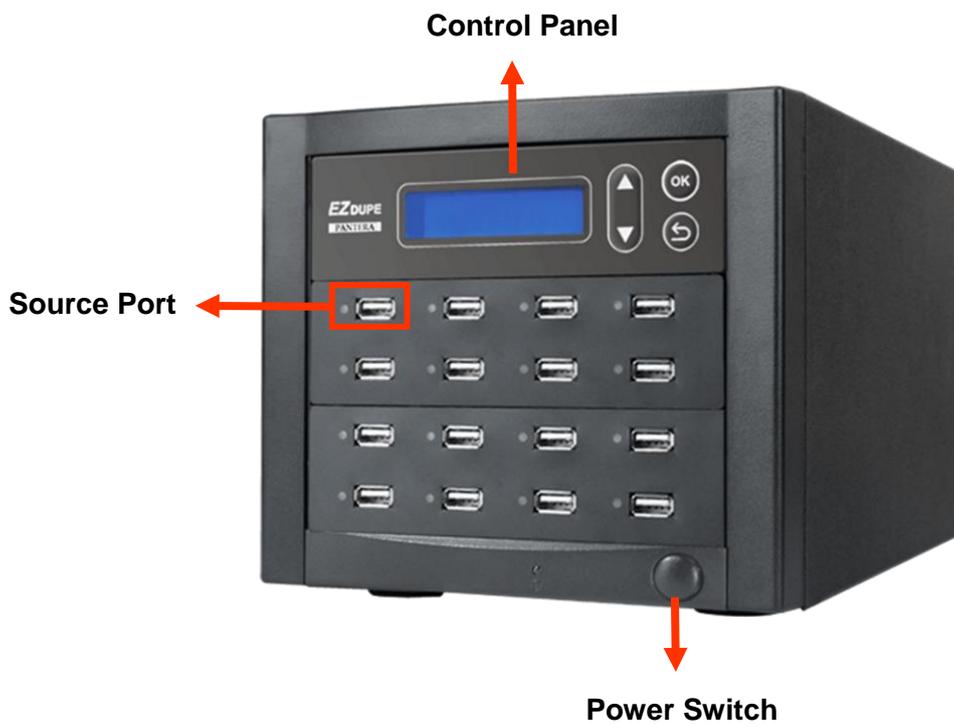
- a. Each processing channel has its own control unit and operates independently with dedicated bandwidth of up to 35MB per second.
- b. Standalone operation. No PC or software is required, minimizing possible computer virus infection.
- c. Instant power on and off, no warm-up or cool-down required.
- d. Easy-to-use One-Touch copy operation.
- e. Compare function available for verification of copy accuracy
- f. Menu options are user-friendly and easily accessed through the 4-button control panel. Use ▲ or ▼ button to scroll through the options and view the operation status of each channel on the 2-line backlit LCD display.
- g. Support Synchronous and Asynchronous copy modes for best operation efficiency.
- h. Powerful 32-bit CRC checksum to assure data integrity.
- i. Heavy-duty hardware construction for commercial production or personal use.
- j. 115V and 230V switching power supply maximizes portability for operation anywhere.
- k. Designed to save users time and effort in creating multiple copies quickly and reliably.
- l. Unique source data analysis to copy data area only to achieve highest efficiency
- m. Supports multiple file formats: Windows: FAT 16/32、exFAT、NTFS, Linux: Ext 2/3/4, Mac: HFS/HFS+

n. Not only to do copy, but also test flash media capacity and reading/writing speed.

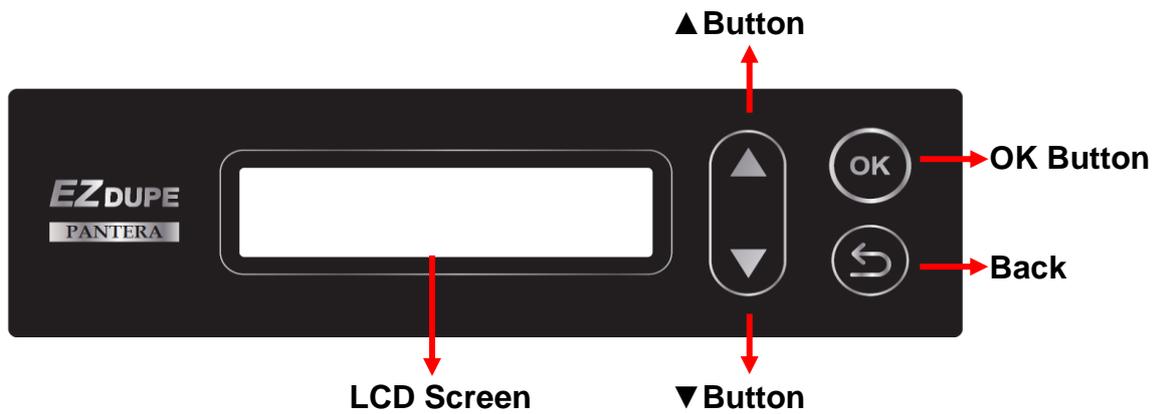
2. Duplicator Introduction

The following picture shows the 1-15 Pantera USB Duplicator as an example, and it can be applied to SD and CF duplicator. The source USB port is at the upper left corner for master disk, and the rest are the ports for target disks. It is the same for all other duplicators with various number of ports. The appearance of the duplicator may be changed without notice.

The USB port is numbered as port 0 for the source port, and the remaining USB ports from left to right and from top to bottom are port 1, 2, 3, ..., and so on.



3. Control Panel Overview



▲ Button: Up, Backward: To navigate backward in the menu.

▼ Button: Down, Forward: To navigate forward in the menu.

OK Button: Enter, OK: Execute the function.

Back Button: Escape, Cancel: Go back to the previous level in the menu.

4. Specifications

Operation	Standalone (No PC or Software is required)
Target	15, 31, 47, 95, 199 (other configurations available too)
Copy Speed	35 MB/s
Copy Mode	Synchronous and Asynchronous
Copy Area	File and System, Percentage, All Partition, and Whole Media,
Supported Media	USB : 1.0/2.0/3.0/3.1 SD/Micro SD : SD/SDHC/SDXC CF : Support MMC SPEC v3.x/ v4.0/ v4.1/ v4.2
Supported File System Format (for Intelligent Copy)	Windows : FAT16/32, exFAT, NTFS Linux : Ext2/3/4 MAC : HFS/HFS+/HFSX
Display	2-line Backlit Monochrome LCD
Control Button	4 push-button control panel (OK, Back, UP, DOWN)
Memory	128MB DDR3

II. Warning

1. The duplicator tasks mentioned in this user's manual are as following: Copy, Compare, Copy + Compare, Capacity Check, and the functions under Utility sub menu, such as Format and Erase.
2. All the tasks can be executed in synchronous mode, and asynchronous mode.
3. The Green LED flashes during the execution process of a task. After the task is done, the Green LED will stay solid if the process is successful, otherwise the Red LED will be on if the process is failed.
4. Press and hold **Back** button during the execution process of a task will stop and exit the execution of the task.
5. DO NOT unplug USB drive from the duplicator during the execution process of a task. It may cause damage to the duplicator system and media.

6. It is strongly recommended that the capacities of the source and target device are equal or similar.
7. It is not recommended to use USB card reader to copy different media on the USB duplicator, such as CF/SD/MS cards. It may cause damage to the duplicator system and media.
8. DO NOT plug in USB or flash media until the duplicator boots up. It may cause abnormal results if a USB or flash media with quality issue is plugged in before or during the boot up process.

III. Synchronous /Asynchronous Mode

1. Synchronous Mode

Synchronous Mode (default) means that the duplicator will start to execute a task after the source and target devices have been inserted and the OK button is pressed. The task will begin and end at the same time for all target devices. Any other target device plugged in during the process of a task will not be executed with the task. Go to section **6.2 Asynchronous Mode** to enable or disable this function.

- a. Insert source device into the source channel and blank media into the target channels properly. The LCD display will show no source disk when source device is not plugged in yet, and show the number of target device inserted when source device plugged in.
- b. The green LED will be on if the target device is plugged in properly.
- c. Select the task from menu, and press **OK** button to execute it.
- d. During the execution process, the status of each target device can be checked by using the ▲ and ▼ buttons.
- e. After the task is done, LCD display will show the number of successful and failed target(s), and execution time.

2. Asynchronous Mode

Asynchronous Mode means that the duplicator will read the data from source device into system memory buffer and start to execute a task immediately when target device(s) inserted. Duplicator does not have to wait for all target device(s) inserted in order to start the execution of the task at the same time. No matter the data size of the

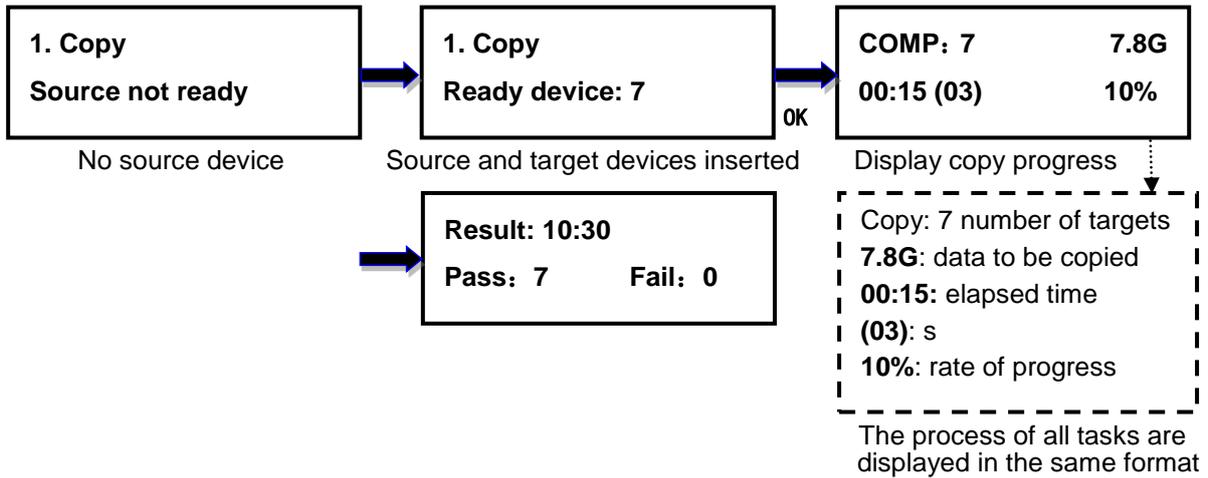
source device, duplicator can asynchronously execute a task if Asynchronous Mode is enabled. Go to **6.2 Asynchronous Mode** to enable or disable this function.

- a. Insert source device into the source channel, select the task to execute from the menu, and press **OK** button. Duplicator will start to execute the task now.
- b. Target devices can be plugged in during the execution process, and will start to execute the task immediately
- c. Target device can be removed when it finishes the execution process and its green LED is solid on. New target device can be plugged into the same channel for execution of the task again.
- d. LCD display will show the percentage of execution process, the number of successful and failed target(s). Here the percentage of execution process displayed is only for the least processed target device.
- e. During the execution process, the status of each target device can be checked by using the ▲ and ▼ buttons.
- f. After the task is done for all target devices, press Back button to exit from the task. LCD display will show the total number of successful and failed target(s), and total execution time.
- g. Don't need to wait for all target devices to be done. Each channel executes the task asynchronously.

IV. Menu Overview

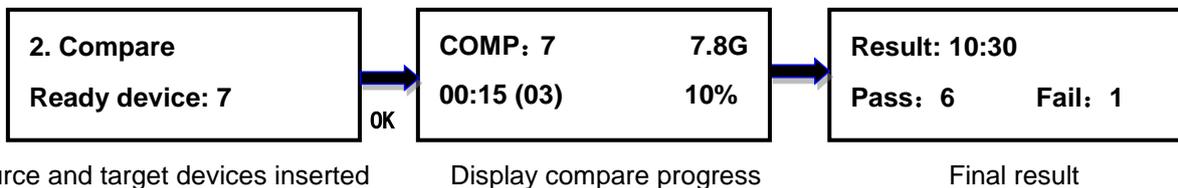
1. Copy

To copy from source device to target device(s), please go to **6.1 Copy Area** to select the setting first before this step.



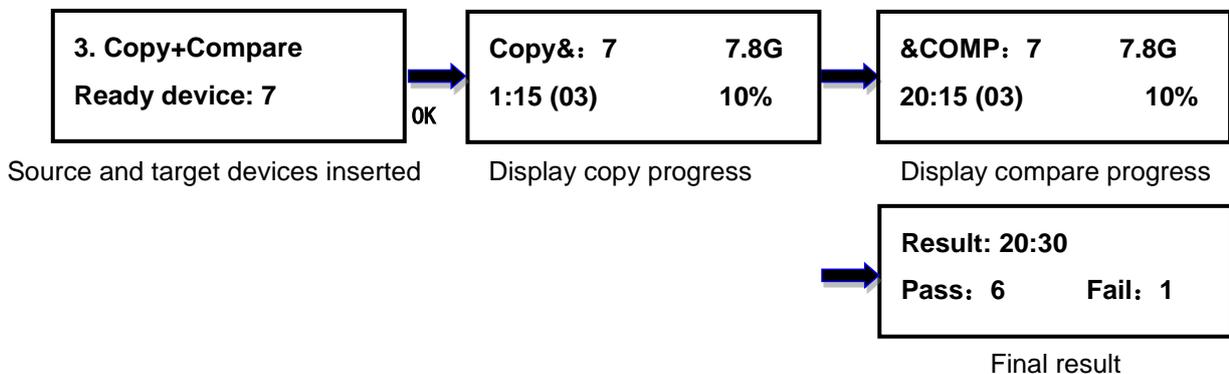
2. Compare

This command allows to compare the copied target devices against the source for accuracy.



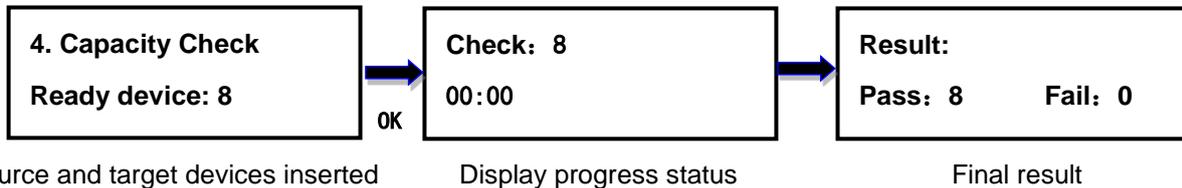
3. Copy + Compare

This command allows duplicator to start Copy process first, then follow with Compare process immediately.



4. Capacity Check

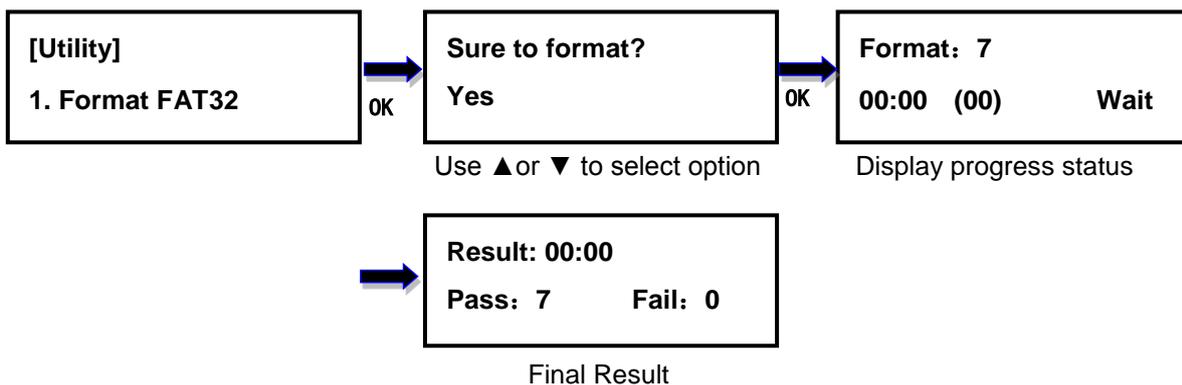
This command allows to verify the device capacity. It can detect the actual capacity of devices within 3 seconds.



5. Utility

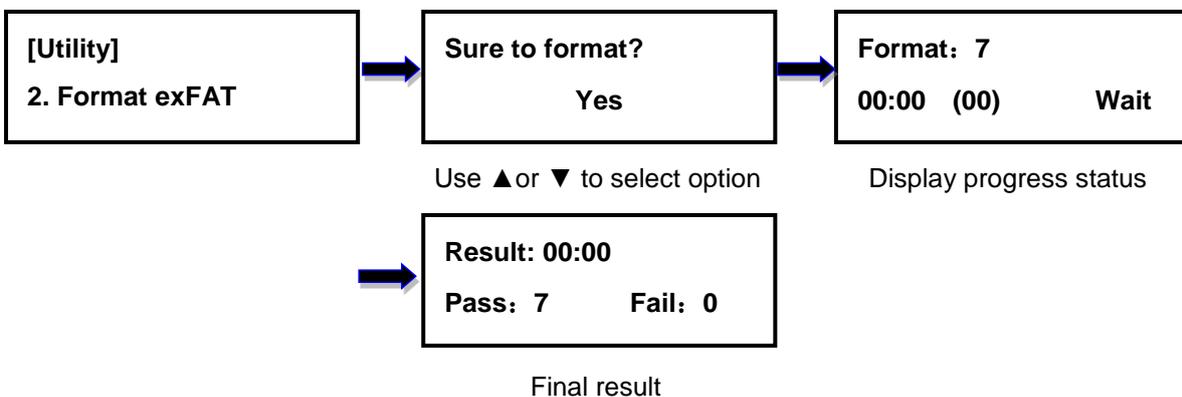
5.1. Format FAT32

This option allows to format the target device to FAT32 file format. It will not format the source device, avoiding accidentally erasing the original data content. User will be asked if it is sure to format the target devices before the Format process starts.



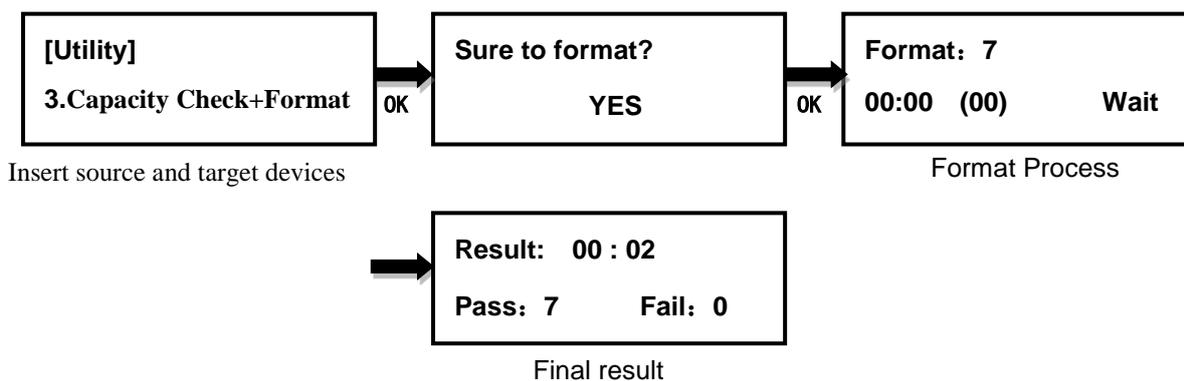
5.2. Format exFAT

This option allows to format the target device to exFAT file format. It will not format the source device, avoiding accidentally erasing the original data content. User will be asked if it is sure to format the target devices before the Format process starts.



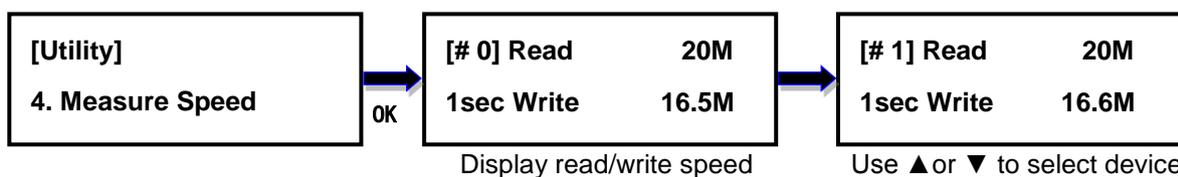
5.3. Capacity Check+Format

It will format the target devices to the file format according to the system Setup (please refer to 6.7 Set Format Type), then sort out target devices based on the capacity threshold (please refer to 6.8 Set Capacity Threshold). Duplicator will display the target device which is not in the capacity range and its red LED will flash. Press ▲ ▼ button to switch between the target devices with smaller capacity to check the data status. The ones without capacity issue will not be displayed to expedite the capacity check process. If Format and or Capacity Check is failed, the red LED will stay solid on.



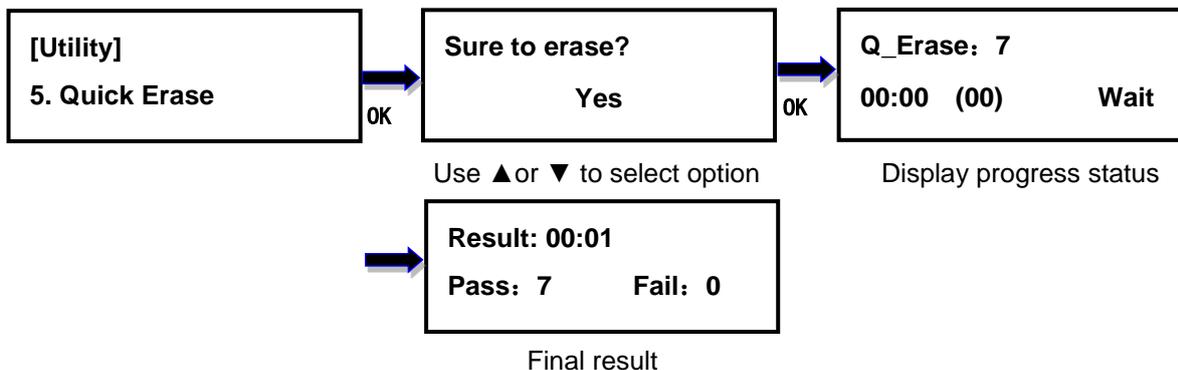
5.4. Measure Speed

This option allows to measure the actual Read and Write speed of the target device. This option will NOT alter or erase existing data on the target device.



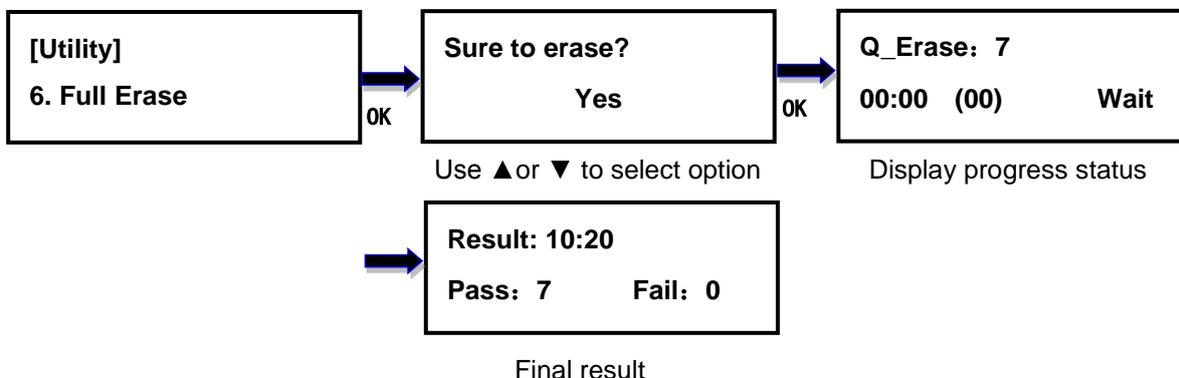
5.5. Quick Erase

This option erases the table of content of file system of the target device, so it is fast to do Quick Erase. There is chance that some files can be retrieved by software.



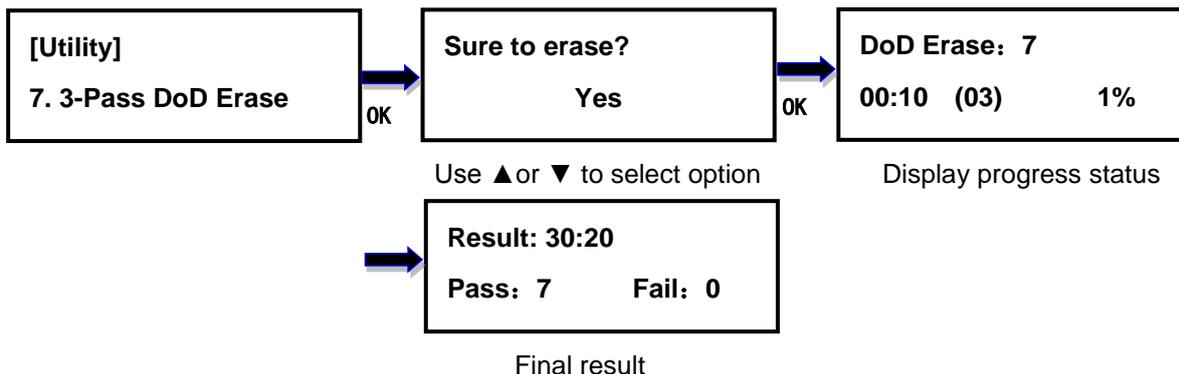
5.6. Full Erase

This option completely erases the content of target device. It takes longer time to erase and the content will not be retrieved by software.



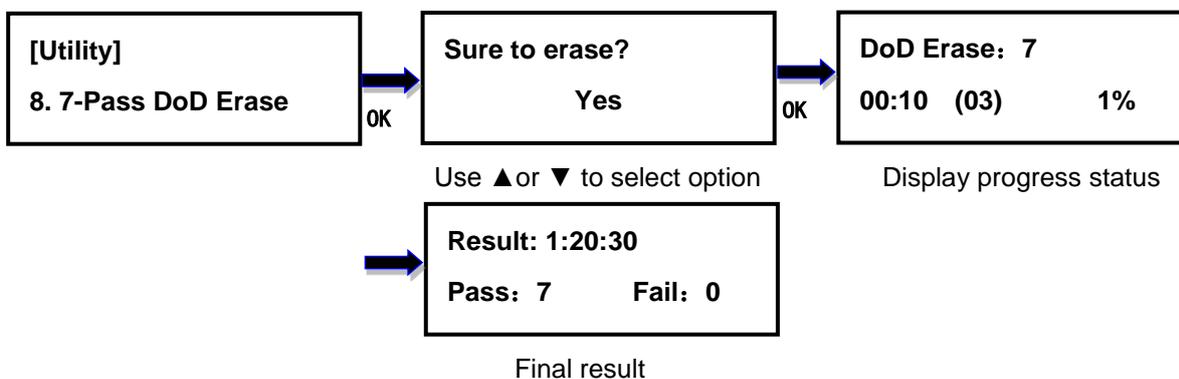
5.7. 3-Pass DoD Erase

This is to comply with the U.S.A. Department of Defense (DoD 5220) standard to fully erase the media by rewriting bit by bit three times to guarantee the data to be permanently deleted. It takes long time to erase, and the content will not be retrieved by software.



5.8. 7-Pass DoD Erase

This is to comply with the U.S.A. Department of Defense (DoD 5220) standard to fully erase the media by rewriting bit by bit seven times to guarantee the data to be permanently deleted. It takes long time to erase, and the content will not be retrieved by software.



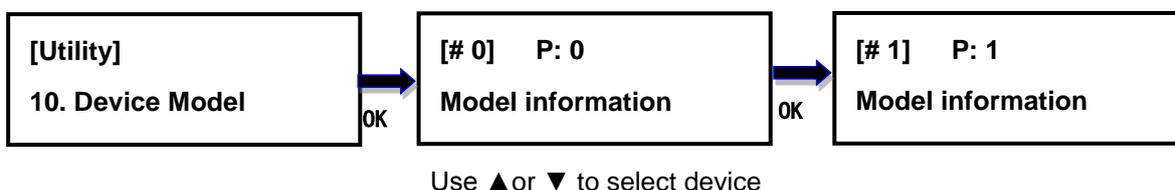
5.9. Media Information

This option displays the information of selected device media, such as total capacity, file format and the size of data content.



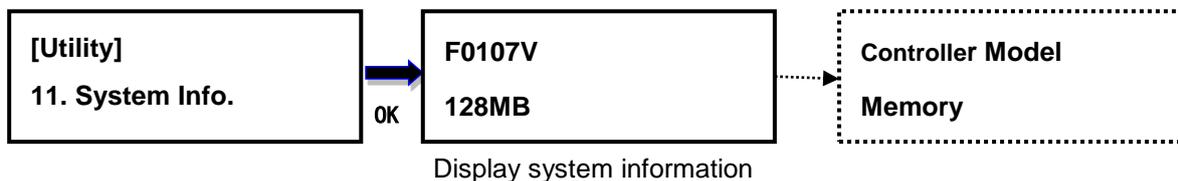
5.10. Device Model

This option displays the model information of selected device, such as device model, serial information and firmware version



5.11. System Information

This option displays general information of the duplicator, including controller model, system memory size, firmware version, number of targets and ID Number.



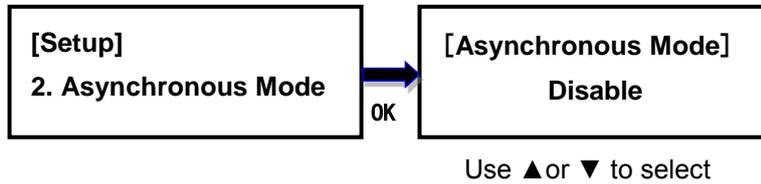
5.12. System Update

This option allows user to update the firmware of duplicator when necessary. Please obtain the proper firmware file from manufacturer, and save the unzipped file under home folder on the flash device ([The file system of should be FAT32](#)). Insert the flash device containing the firmware into the source port of duplicator and press OK. It will update the system, reboot the duplicator automatically after update, active and operate under the new firmware. **Please do not reboot the duplicator manually.**



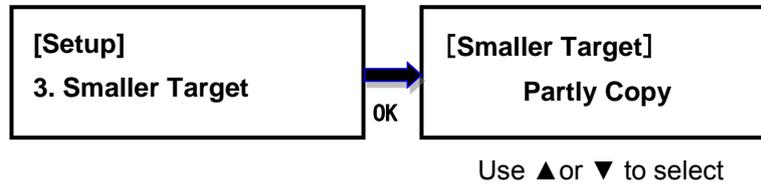
6.2. Asynchronous Mode

This option allows to enable or disable Asynchronous Mode. By default the Asynchronous Mode is **Disabled**. Please refer to Chapter III for the detail of operation on Synchronous and Asynchronous Mode.



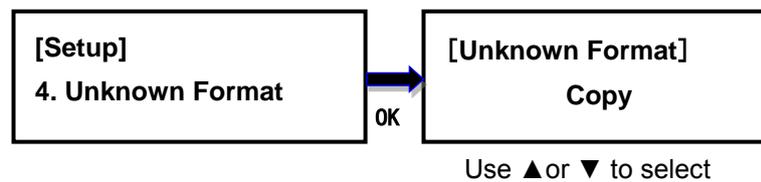
6.3. Smaller Target

If the capacity of the target device is smaller than the source device, the duplicator will partly copy or cannot copy. **Partly Copy** is the default setting.



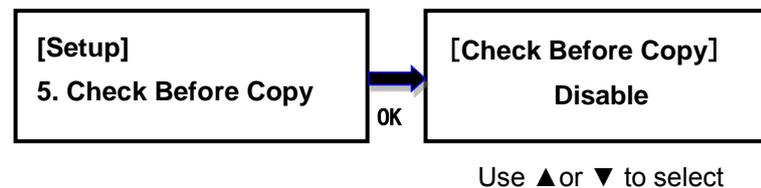
6.4. Unknown Format

This option allows you to Copy or Skip unknown format. If option Skip is selected here, the unknown format from source will not be copied during copy process. **Copy** unknown format is the default setting.



6.5. Check Before Copy

This option allows to check device real capacity before copying. By default this option is **disabled**.



6.6. Set Slow Out Threshold

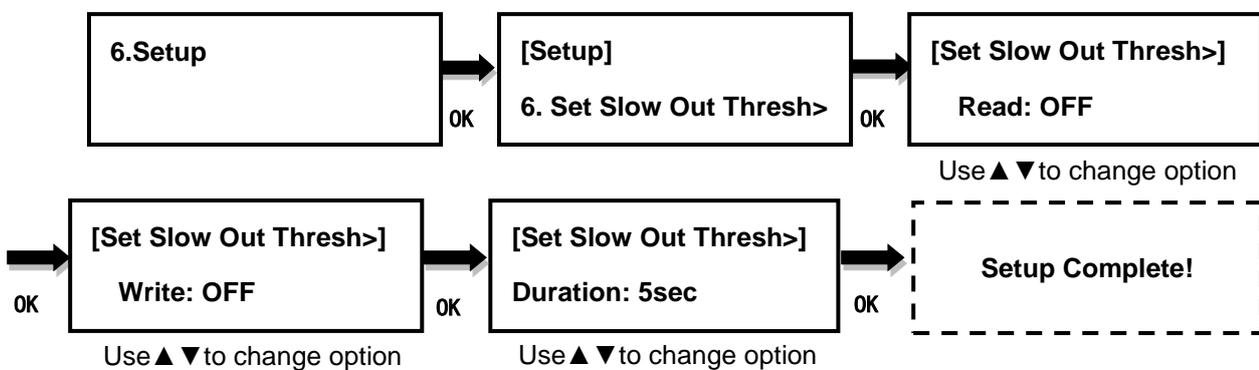
This function allows to set up read/write speed threshold for target devices. When the target device is causing the copy or compare process delay due to its lower read/write speed and the rest of the devices in the same batch have to wait for it, the Slow Out Threshold strategy

will be applied as the following: the system will stop the copy or compare process for that particular target device when its read/write speed is below the threshold for continuing number of seconds based on the setting, and its red LED will flash to give warning. There are 3 settings to set up.

Read: set up the lowest read speed, and options are OFF, 1MB/s~25MB/s. The default setting is **OFF**.

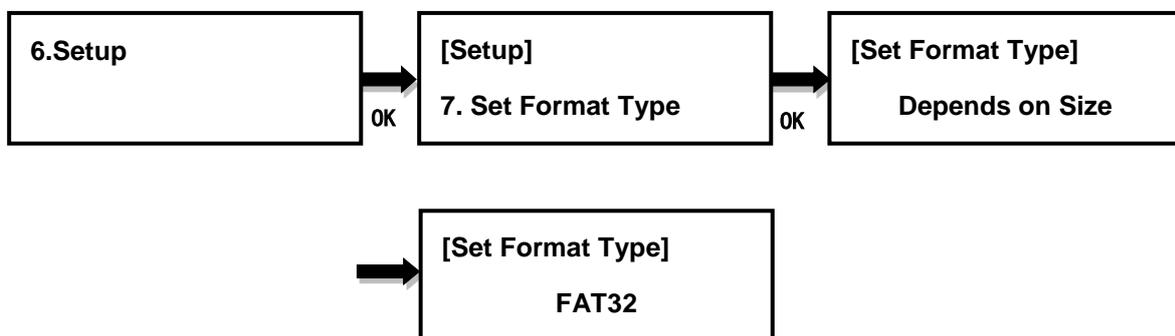
Write: set up the lowest write speed, and options are OFF, 1MB/s~25MB/s. The default setting is **OFF**.

Duration: set up the period when read or write speed is lower than the threshold for continuing number of time, and options are 1~20second. The default is **5second**.



6.7. Set Format Type

This function allows to set up the target device format, and the setting will be applied by Command **5.8 Capacity Check + Format** under the main menu. The options are FAT32, exFAT, and Depends on Size. The default setting is **Depends on Size**.



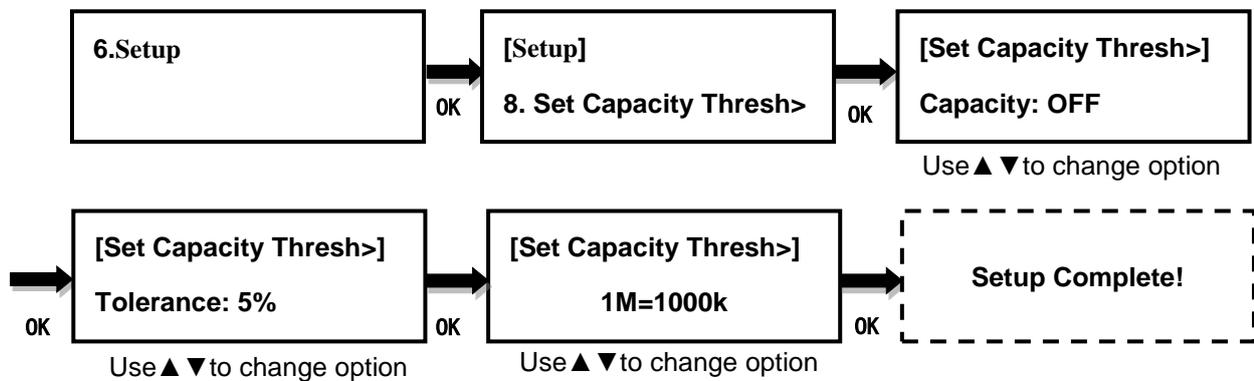
6.8. Set Capacity Threshold

This function allows to set up the capacity threshold for Command **5.8 Format + Capacity Check** under main menu. It will be failed when the target device capacity is below the threshold range, and the red LED will flash to give warning. There are 3 settings.

Capacity: the size of device capacity which will be used for sorting, and options are OFF、128M、256M、512M、1G、2G、4G、8G、16G、32G、64G、128G、256G、512G、1T、2T. The default is **OFF**.

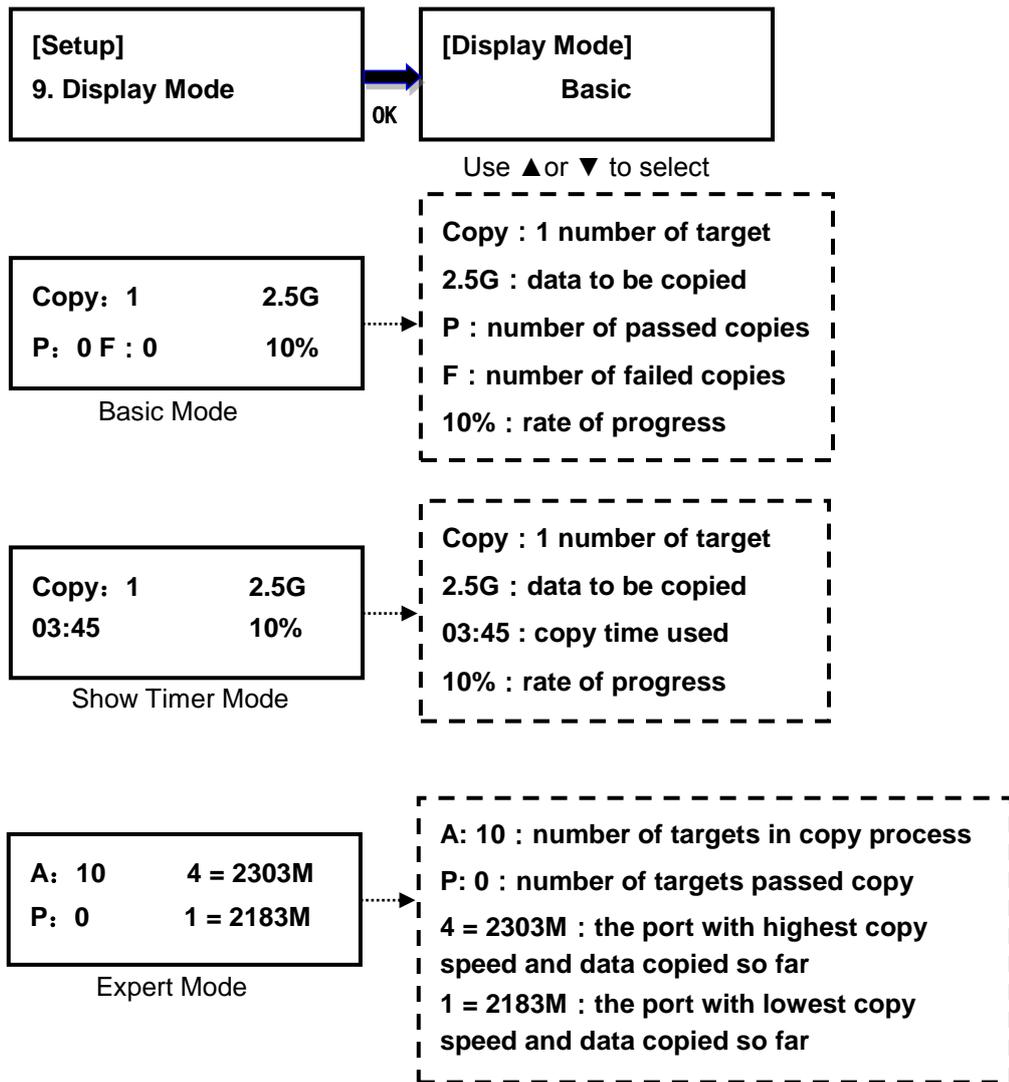
Tolerance: the acceptable range of capacity for sorting, and options are OFF, 0~50%. The default setting is **5%**.

Capacity Definition: define the standard for capacity conversion. Options are 1MB=1000K and 1MB=1024K. The default is **1MB=1000K**.



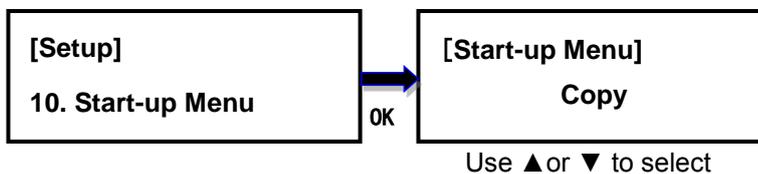
6.9. Display Mode

There are four display modes: **Auto**, **Basic**, **Show Timer**, and **Expert**. **Basic** shows the copy progress in general; **Show Timer** displays the time used for the task; **Expert** shows the devices with highest copy speed and lowest copy speed and their copy progress respectively. **Auto** equal to Show Timer when operation mode is synchronous and **Basic** when asynchronous. By default it is **Auto Mode**.



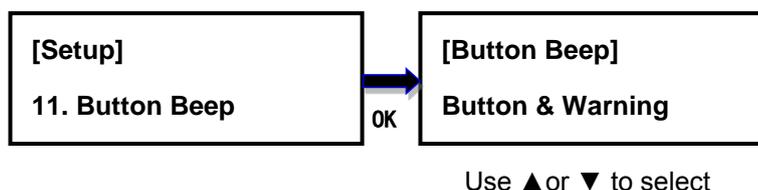
6.10. Start-up Menu

Choose one of the following as the default start-up function: Copy, Compare, Copy+Compare, Capacity Check, Utility and Setup. The default start-up function is [Copy](#).



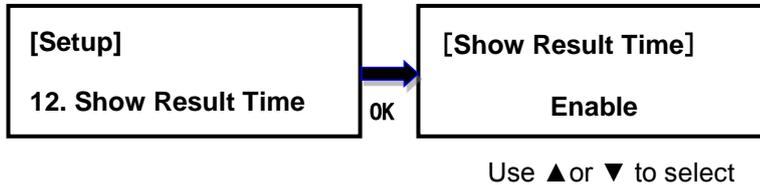
6.11. Button Beep

This option allows to set up button sound from the following options: Button & Warning, OFF, Warning only. The default setting is [Button & Warning](#).



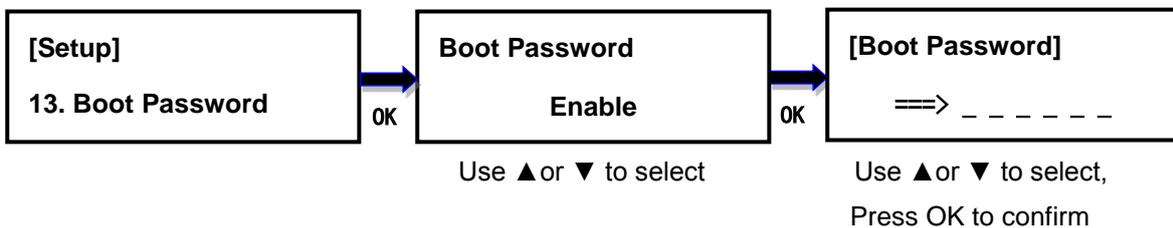
6.12. Show Result Time

This option allows to enable or disable the display of copy time after finishing the copy process. The default setting is [Enable](#).



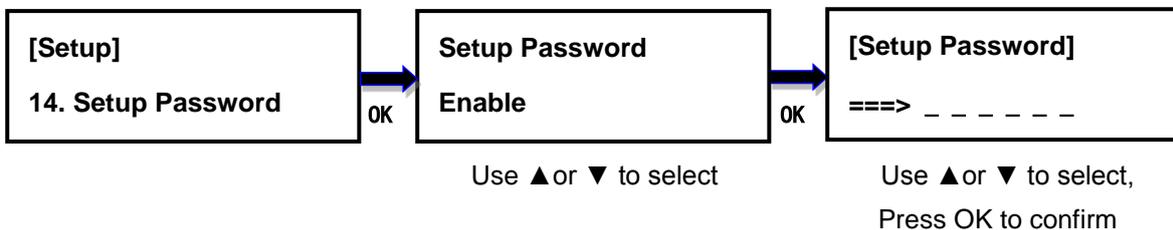
6.13. Boot Password

This option allows to set up password for system boot up to prevent from the unauthorized use of the duplicator. The password must be 6 characters.



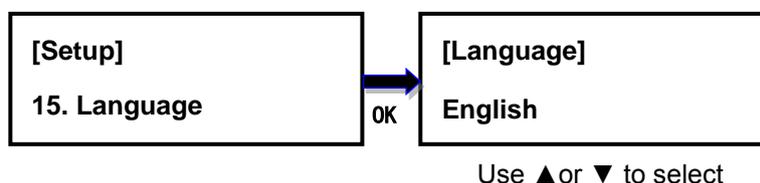
6.14. Setup Password

This option allows to set up password for Setup function to prevent from the change of system settings on the duplicator. The password must be 6 characters.



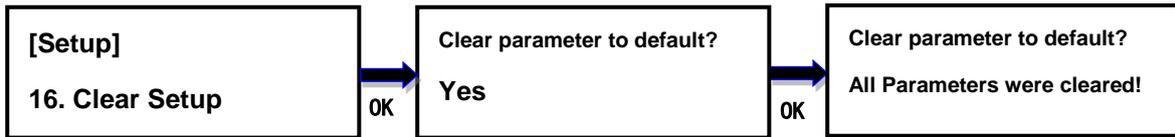
6.15. Language

This option allows to choose the language for display: English, Spanish, Portuguese, and Japanese. English is the default [language](#).



6.16. Clear Setup

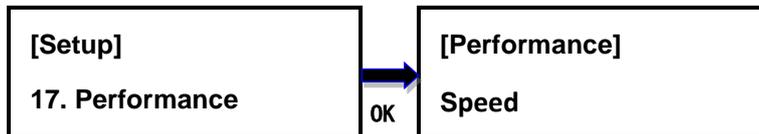
This option resets the duplicator back to factory default settings.



Use ▲ or ▼ to select

6.17. Performance

This option allows to set up the performance for Copy function based on the following modes: Speed, Balance, and Compatibility. Speed mode is to execute the Copy function at the fastest speed, but may have compatibility issue with certain brands flash media. Balance mode is to execute the Copy function at stable speed, and have less compatibility issue with certain brands flash media. Compatibility mode is to execute the Copy function at the most stable speed, and almost have no compatible issue with flash media. The default mode is [Speed](#).



Use ▲ or ▼ to select

v. Troubleshooting

When the duplicator malfunctions or you have questions about using the duplicator, you can first check the following related problems and eliminate them. If you still have problems, you can contact the EZ Dupe technical support department. The contact information is listed at www.ezdupe.com.

Q1 : Why there is no display and nothing happens when the power switch is turned on?

1. Please make sure that the power cord is tightly connected to the duplicator, and the power outlet works normally.
2. Please check whether the duplicator power voltage selection switch is in the correct position 110V or 220V. Please adjust it according to the local voltage.
3. Make sure that the power cord is not damaged.

Q2 : Why can't the duplicator recognize the media device?

1. Please check if the media device can be used normally on a computer.
2. Please insert the media device into different ports for testing. If some ports can recognize the media device and some cannot, it may be that some ports have been used for too long, resulting in poor connection. Please send duplicator in for repair. If all of the ports are unrecognized, it may be the compatibility issue. Please set the Performance mode to Compatibility in 6. Setup -> 17. Performance in the main menu. If it is still unrecognizable, the media device may be of poor quality and not compatible with this duplicator. Please replace the media device with another brand.

Q3 : Why is the copy failure rate high?

1. The media device quality may be poor, please change it to other brands with better quality.
2. The duplicator has been used for a long time, resulting in poor port contact with media device. Please send it to the manufacturer for inspection.

Q4 : Why is the copy speed slow?

1. The copy speed depends on the writing speed of the media device. When the writing speed of the media device is slow, the copy speed becomes slow.
2. There may be a slower media device in the batch of media. Remove it (press the up and down keys at the same time to remove the slowest media device during copy process) to speed up.

Q5 : Why the media device cannot be used normally after copying?

During the copying process, the duplicator reads the data from the source media device and then writes to the target media device. An error may occur during the writing process, or the target media device has bad sectors and cannot be written normally. It is recommended to use the Compare function to ensure that the data copied to the target media device is 100% the same as the source media device.

Q6 : Why is copy failed?

1. Data on the source media device cannot be read normally. The source media device may be of poor quality or has bad sectors. The copying process to all target media devices will stop.
2. Target media device cannot be written normally. The target media device may be of poor quality or has bad sectors. The copying process of this target media device will stop, and others will continue to copy.

Q7 : Why can't I update the firmware?

1. Different duplicators have different update files, please make sure your update files are correct.
2. Please make sure that the media file system is FAT32, the update file is uncompressed (the file extension is .BIN) and saved on the root directory of the media device.