MF DIGITAL

USB DUPLICATION SYSTEMS

Version: SD/USB 6-11-08

Content Index

1. Introduction
    - 1.1 Features……p. 2
    - 1.2 Specification……..…p. 4

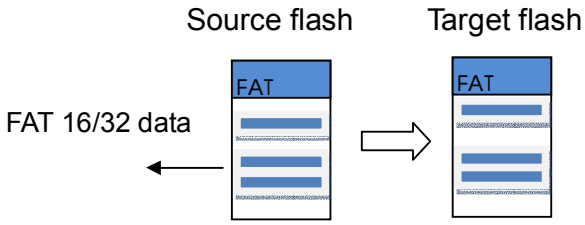
2. Function Overview
    - 2.1 Synchronous & Asynchronous of Copy/Compare/Copy+Compare..……p. 5
    - 2.2 Set Up Function
        - 2.2.1 Analyze Source—Quick Copy Mode (setup 6.2) …..……p.8
        - 2.2.2 Asynchronous Hold time(setup 6.4) ……..……...p. 8
        - 2.2.3 Ignore Size (setup 6.5)……...…… p. 9
    - 2.3 Utility Function……..…….. p. 11
    - 2.4 Function List…….……..……..p. 12

I. Introduction

1.1 Features

- No risk of virus infection. Instant power on and off.
- Simple one touch copy, real time information shown on LCD screen
- Support Synchronous and Asynchronous copy/compare/erase
- High speed copy up to 720MB per minutes
- Real time copy and compare technology to guarantee data copy success and completion
- Superior embedded technology
- No limitation of card capacity or format.
  - . If the source card format's file system is FAT16 or FAT32, the system will automatically detect its content and directly copy the content data to the target flash cards. This will help the copy process very efficient and fast.

For example:



For FAT16/32 file system, the SD/USB dupe will copy content only, no need to copy the whole device

Important Notes:

The source flash drive must be inserted at all times if it is greater than 256mb.

If the capacity is less than 256mb, the source can be removed and the slot can be used to copy an additional flash drive.

□. If there is any non FAT16/32 file system such as NTFS, then you can copy such source by turning off the “source analyzing function” (See Setup 6.2).

If “Analyze Source” function was not turned OFF and you are copying non FAT16/32 file format data, the error (Red) LED will turn on as soon as you press COPY. You can press ▲ ▼ keys to check each Flash Card’s status. In this example you will notice an error message of “Not FAT format”.

1.2 Model & Specification

Model	5007	5011
	UB707	UB711
Target	1:7	1:11
Buffer Memory	256MB	256MB

Operation	Stand Alone			
Support Media	SD Duplicator	SD/Micro SD/MMC/RS-MMC/MMC Mobile/SDHC		
	USB Duplicator	USB1.1, UBS2.0		
Features	1. Independent and simultaneous operation at each slot channel. 2. Asynchronous copy technology. Automatic load data to buffer memory, each slot copy independently and continuously. No limit of copy q'ty. 3. Up to 720MB/per minute bandwidth at each slot channel 4. Compatible with most of common format such as FAT16, FAT32. Single partition only. 5. Copy, Compare, Copy+Compare function for selection 6. Compare technology guaranteed data copy integrity 7. Auto FAT source analysis to enhance copy speed 8. Flash Firmware update			
Display	2X16 Monochrome LCD display			
Power Supply	Maximum below 50W			
Control Button	4 push buttons (Up, Down, OK, Esc)			
LED	2 LED(Green/Red) on each slot			
Humidity	Working	20%~80%		
	Storage	5%~95%		
Temperature	Working	0^0C~75^oC		
	Storage	-20^0C~85^0C		
Safety	CE, UL, ROHS			
System Dimension	32*20*11.3 cm		29*19.2*17.2 cm	43.7*19.2*27.1 cm
Weight	2.5 kg		4.5 kg	7.5 kg

* The above information is for market information only. The actual spec is subject to customer's evaluation.

2. Function Overview

2.1 About Synchronous & Asynchronous Copy/Compare/Copy+Compare

- This duplicator can auto detect and support two copy modes:
  - Synchronous
  - Asynchronous

When you insert source flash card and press the OK key for the Copy or Compare function, the system will start to scan the source for content size. If the source content size is less than system's buffer memory, then it will automatically start asynchronous copying. If the source content size is larger than the system's buffer memory, it will detect and show total how many target flash cards are ready, if all slots are loaded it will auto start synchronous copying..

- What is Synchronous and Asynchronous copying?:
  - **Synchronous** means all flash cards are copied simultaneously. Be sure to plug in source and the desired number of targets. Copying will start either when you press the OK key or will auto start copying when all of the card slots are loaded.
  - **Asynchronous:** For use with masters up to 256MB. When is this mode, the copier will read the source data into the system's memory buffer. Copying will start immediately as soon as a flash device is plugged in/. In this way, you can copy continuously simply by plugging in one flash device after another. You can take out a flash card, once copying is completed, and replace with the next target without affecting other targets.. Repeat until you have completed the desired number of copies. You can turn Asynchronous mode on and off. See SETUP function 6.6 on how to do so.

Notes: After SD/USB dupe copy, the target flash cards data and format will be the same as source flash card. Original data in target flash cards will be written over (erased).

Making copies (Synchronous and Asynchronous)

➢ **Synchronous Copying**

–-> Used when source content size is larger than system buffer memory.

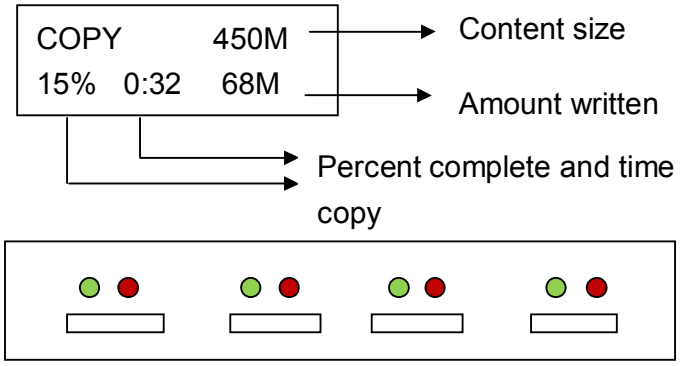
□. Insert source flash card. Select copy/compare/copy+compare function and press OK.

```
USB(963M)    450M
      0 ready
```

□. Insert target flash cards. The LCD will show the number of targets inserted and ready for copying,

```
USB(963M)    450M
      3 ready
```

□. When all flash cards are inserted, press OK to start copying. Or, when all slots have been inserted with a target, the system will automatically start copying.

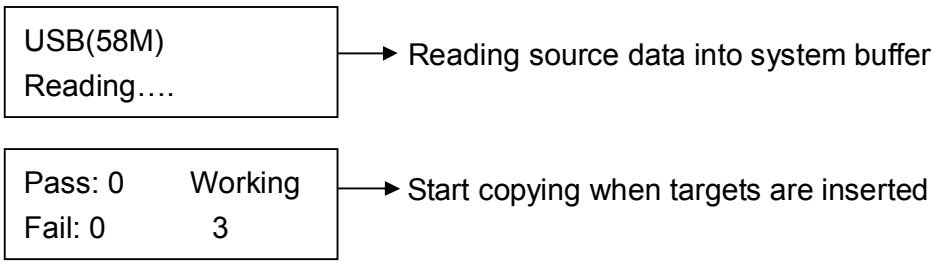


Note: When copying is underway, the Green LED will blink. When copying is completed, the Green LED will remain ON. If an error occurred, the Red LED will be lit.

- **Asynchronous Copying**

  --→ Use only when source content size less than system buffer memory (256MB).

  □. Insert the source flash and press OK key. The system will start to read the source content into system's buffer. Copying will begin as soon as target flash cards are inserted.



  □. During copying, each card slot's Green LED will blink, Do not remove the card while copying. When copying is finished, the Green LED will remain ON (solid, not blinking). Once complete, you can remove the copied device and insert another new flash device. The quantity copied, Pass/Fail, and in # in process will show on the LCD display. A red LED indicates that a copying error occurred.

Note 1:

The buffer memory for each model is:

Model	5007	5011
Buffer	256MB	256MB

Note 2:

During Asynchronous copying, you can press ▲ ▼ key to check each Flash Card's copying status and progress.

When there is an RED error LED on, you can also press ▲ ▼ key to check each Flash Card's status.

2.2 SET UP Functions

2.2.1 Analyze Source—Quick Copy Mode (Setup 6.2)

- **ON-- Quick Copy.** When this function is ON, the system will automatically analyze the source flash card's file format. If the file format is a FAT12/16/32 file system, then the system will only copy the content data instead of copying the whole flash card including the empty space. For example, a 2GB flash card which is FAT32 file format and has only 50 MB data inside, the system will only copy the 50MB of data. This results in much faster copying.

- **OFF-- Non-FAT copy (RAW card copy).** If "Analyze Source" is set OFF, the system will copy the entire flash card, including empty space and format. This is best used when you have a flash source that is of an unknown file format, or a non FAT 12/16/32 file system.

Note:

Only sources with a single partition are supported at this time.

2.2.2 Asynchronous Hold time (Setup 6.4)

This is to set the time to in which to auto exit asynchronous copying when you have finished copying and have removed all devices but have not completed the copying job. This is to prevent mistakenly overwriting a source device when you want to start a new copy job. but forgot to stop the previous asynchronous copying job. The default setting is 30 sec After all flash cards have been removed for 30 seconds, and no new cards inserted, the LCD will show:

Press OK to exit this Asynchronous or press ESC to keep this status.

Wait too long Exit□

2.2.3 Ignore Size (Setup 6.5)

The purpose of this function is to set the flash card capacity tolerance between source and target. The default setting is “Don’t Care” which means, there is no limit of the tolerance between source and target. If you require source and target flash cards to be limited to certain capacity tolerance, you can set the % of the tolerance.

Please Note – The Default Setting “Don’t Care” will resize your target to the capacity of the source. For example, copying a 2GB Source to a 4GB Target, will create a target that is now 2GB.

A. How to keep Source and Target within a certain range of size tolerance.

A setting of 3%, allows a size difference between source and target devices of only 3%. You can increase the tolerance % depending on your requirements.

*For example, if your source device has a capacity 1919MB, the target devices’ capacity must be limited between 1976MB to 1861MB.

If the capacity difference between source and target is larger than the tolerance setting, , the RED error LED will turn on, and you will see the message “not correct size” when you press ▲ ▼ keys to check each flash card status.

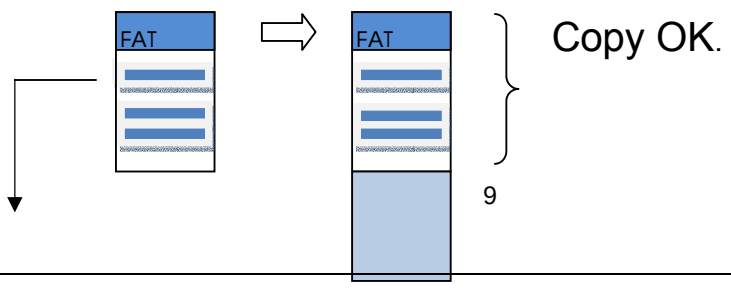
B. What will happen with a larger tolerance %.setting.

Seting a higher % of tolerance will allow the system to copy to targets which have a great capacity difference from the source flash card. For example, a larger tolerance setting will allow you to copy a 1GB source device to 2GB target devices. Or a 4GB device to 1GB target, however, the content size must be less than 1GB.

2.1 If a source device has **smaller capacity** than the target devices, say for example 1GB to 2GB:

- Size tolerance% should be set to “don’t care”.

Example: A.Source 1GB B.Target 2GB-- >1GB

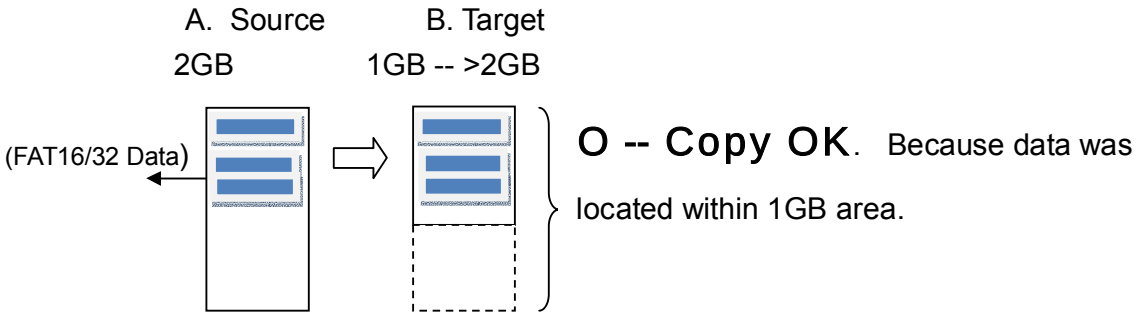


2.2 If the source flash device has a **Larger capacity** than the target

example 2GB copy to 1GB:

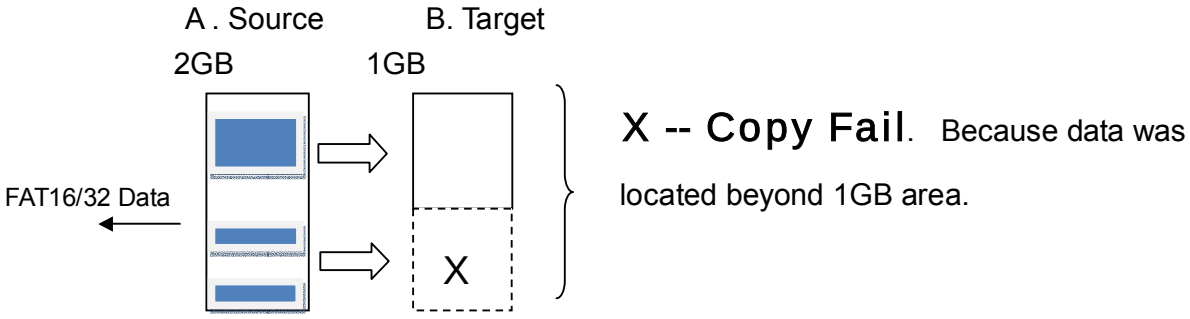
- Set a bigger tolerance % or set to “don’t care” (no limit).
- A copy result of pass or fail will depend on where the content data is physically located within the source device. Even if the content size is smaller than the capacity of the target, it may fail (as shown in illustration 1 and 2)

Illustration 1. When FAT16/32 content is located within in target flash card’s capacity



a. Flash card’s data is located randomly (as illustrated A) not sequentially..

Illustration 2. When content is located beyond the target flash card’s capacity.



** The copy failed because the data was stored scattered beyond the 1GB area. The duplicator will copy whatever of the data is, but it won’t change data’s location.Consider defrgamenting your master first.

Utility Functions

⓵ Erase

- Quick Erase (function 5.1) will only erase the FAT index table of each flash card, and Full Erase (function 5.2) will erase the whole flash card. Therefore, full erase will take a longer time.

⓶ System update

Updates may become available on our web site at http://www.mfdigital.com from time to time for your system. This is to update the system's firmware version. Please save the un-zipped update file to the root, or uppermost, directory of your SD/USB drive (Do not put it in a sub folder). Select function 5.3 system update, and press OK, the system will automatically start system updating. When finished, please turn off the system for 5 sec and turn on again. The new version of firmware has been updated.

Special reminders of operations:

⓵ DO NOT pull out any flash card while copying is in process. When a flash card is copying, its Green LED light will be flashing. Never pull out any card whose LED is blinking. This will very likely not only damage the flash card itself, but may also damage the system.

⓶ Some users may try to use a USB converter to copy other different types of flash cards, such as CF, SD, Memory stick, etc.. Since the quality and stability of each USB converter on the market is very different, a poor quality USB converter may cause damage to the machine and also the copy quality or flash devices.

2.4 Function List :

Function	Description
1. Copy	This option makes USB/SD flash copies.
2. Compare	This option makes a bit-by-bit comparison between master source and all other copied flash cards.
3. Copy+Compare	This option will make a copy first and then compare the copied flashes with to source immediately after copying.
4. Information	
4.1 USB/SD Info	This feature will show USB/SD flash's basic information such as flash type, content size, and available space.
4.2 System Info	This feature displays system information, including controller model number, buffer memory capacity, and software version.
5. Utility	
5.1 Quick Erase USB/SD	This operation can quickly erase the index of inserted USB/SD flash devices.
5.2 Full Erase USB/SD	This operation will completely erase the data of inserted USB/SD flash devices. It takes longer than Quick Erase and is not a secure erase.
5.3 System Update	This operation updates system firmware via a USB device containing firmware update.
6. Setup	
6.1 Start-up Menu	You can select which function is displayed first on system power-up.
6.2 Analyze Source (Quick Copy Mode)	ON to copy FAT16/32 file content. OFF to copy non FAT (RAW card) file systems (ie. NTFS)
6.3 Button Beep	Allows you to turn on or off audible key press beep.
6.4 Asyn Hold Time	To Set how long the system should wait before auto exiting Asynchronous copying mode.
6.5 Ignore Size	To set the tolerance threshold between source and target. The default setting is "don't care",or. No limit to capacity tolerance.
6.6 Asynchronous	To enable Asynchronous copy mode.
6.7 Language	Set system language.