

Longsys

Micro UFD & UFD Datasheet

512MB~128GB

Version: 1.4

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Revision History

Rev.	Date	Changes	Editor
1.0	2018/03/15	Basic spec and architecture	Frank.lv
1.1	2018/05/17	Performance	Frank.lv
1.2	2019/07/16	Change test condition of CDM	Derry.hu
1.3	2019/10/15	adding Applicable Objects	Derry.hu
1.4	2020/05/22	Add instruction of used space	Derry.hu

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1. Introduction

1.1 General Description

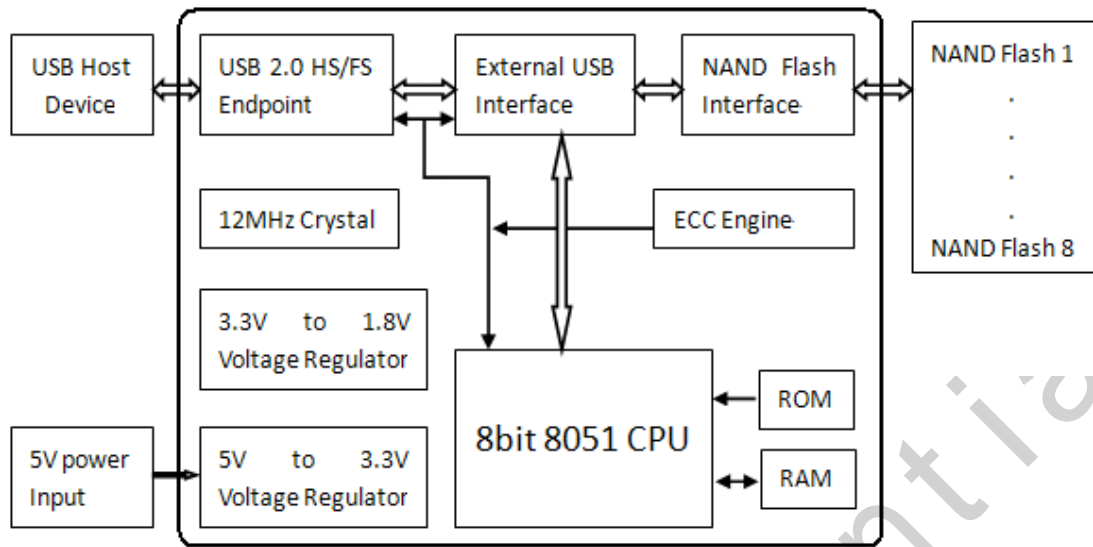
Longsys Micro UFD (USB Flash Disk) and UFD which are both COB USB Drive packaged in small dimension protected by Longsys patent.

Longsys Micro UFD and UFD products are water resistant and have greater shock resistance than PCBA USB Drive. With a convenient low-profile design, Longsys Micro UFD and UFD are ideal choice for situations where a full-size USB drive is just too big to access the USB port, such as connect it to set top boxes or car audio device. Moreover, with different adapter and housing, Longsys Micro UFD and UFD are suitable for flexible and quick USB Flash Drive assembly and production. They are ideal solution for low-cost and high-reliability USB Flash Disk.

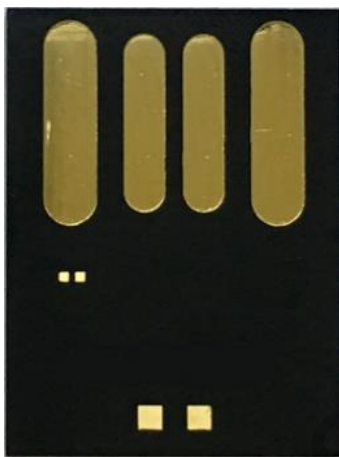
1.2 Features

- RoHS compliant products
- Complete compatibility with USB 2.0 and USB 1.1 specifications
- Support the operating systems: Windows 10, Windows 8.1, Windows 8, Windows 7, Vista, Windows XP, MAC OS 10.x or later
- Supports "Write Protect" function, password protection, and secured partitioning functions
- Data protection during data transfer if unplugged or power off
- True Plug and Play functionality
- Supports suspend and wake-up resume, Lower Power Consumption
- Supports VID, PID, serial number and vender information update
- Provides an LED indicator to indicate when the USB Flash Disk is in the Ready or Working mode
- Water resistant

1.3 Function Block Diagram



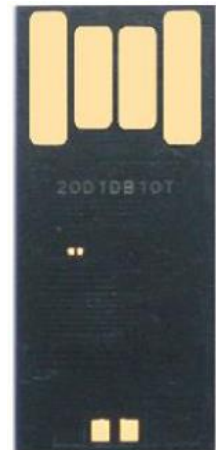
1.4 Sample Picture



Micro UFD I



Micro UFD II



UFD

Note:

Pictures for reference only.

2. Product Specifications

2.1 Pin Assignments and Signal Descriptions



Table1: Signal Description

Pin	Signal Name	Type	Description
1	VCC	Power	Regulator 5V Power Input
2	DM	I/O	USB2.0 Data Negative Signal
3	DP	I/O	USB2.0 Data Positive Signal
4	VSS	GND	Ground

2.2 User Capacity and Performance

Table2: User Capacity and Performance

Parameter	Standard								
	512MB	1GB	2GB	4GB	8GB	16GB	32GB	64GB	128GB
Range	512MB	1GB	2GB	4GB	8GB	16GB	32GB	64GB	128GB
File system	FAT	FAT	FAT	FAT32	FAT32	FAT32	FAT32	FAT32	FAT32
Actual size (Min)	480MB	957MB	1.85GB	3.70GB	7.40GB	14.4GB	28.8GB	57.6GB	116GB
Write speed (up to)	3MB/S	3MB/S	3MB/S	3MB/S	3MB/S	3MB/S	4MB/S	4MB/S	4MB/S
Read speed (up to)	8MB/S	8MB/S	8MB/S	10MB/S	10MB/S	10MB/S	12MB/S	12MB/S	12MB/S

* Clusters of files (Clusters of files need to meet one of the sizes, Such 4KB 8KB 16KB 32KB 64KB...

*Test condition, OS: Windows10, 64bit OS, USB Type: USB2.0 host, Model: AMD B450, CPU: AMD Ryzen 5 1400, Main board Chipset: ASRock B450 Gaming-ITX/ac,

*Test tool of speed: CrystalDiskMark5.2.1 software, Total length=100MiB cycle=5

*1 gigabyte (GB) = 1024MB=1 billion bytes. Actual user storage is less

*Above test standards are for reference only! product performance might be varied by NAND Flash, controller, test conditions and etc.

2.3 Current Consumption

Table3: Current Consumption

Mode	Operation	Maximum Value
Range	512MB~128GB	
Operation Current	Write	200mA
	Read	200mA
Standby Current	Standby	80mA
Suspend Current	Suspend	2.5mA

*Test condition, OS: Windows10, 64bit OS, USB Type: USB2.0 host, Model: AMD B450, CPU: AMD Ryzen 5 1400, Main board Chipset: ASRock B450 Gaming-ITX/ac,
 *Test device: Fluke187
 *Test tool: H2test (H2test could run a certain capacity, example: USB2.0=3GB)
 *Above test standards are for reference only! product current consumption might be varied by NAND Flash, controller, test conditions and etc.

3. DC Characteristics

Table4: Absolute Maximum Rating

Parameter	Min	Max	Unit
Operating Temperature	0	60	°C
Storage Temperature	-25	85	°C

Table5: General DC Characteristics

Parameter	Min	Typ	Max	Unit
5V Regulator Power Supply	4.75	5.0	5.25	V

4. Humidity and Durability

4.1 Humidity

Table6: Humidity

Parameter	Min	Max
Humidity	20%	90%

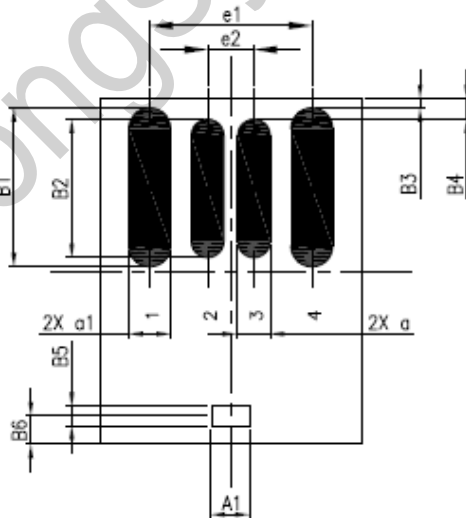
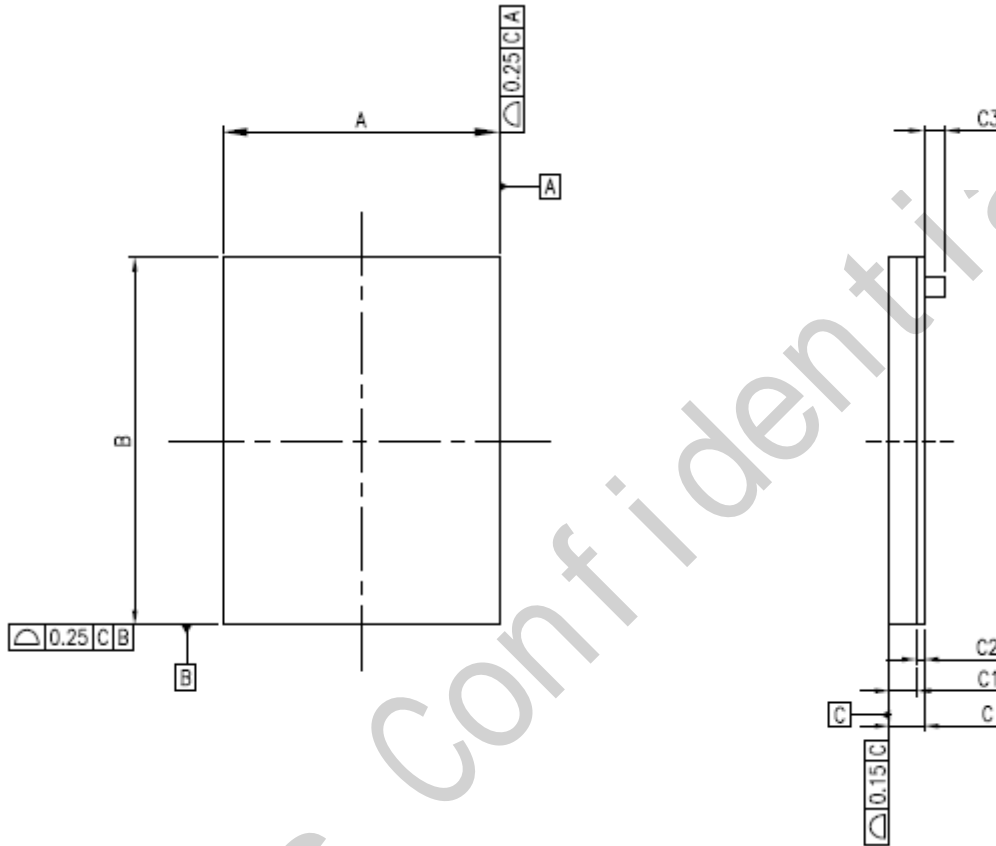
4.2 Durability

Table7: Durability

Parameter	Description	Times
Durability	insertion/removal cycles	10,000

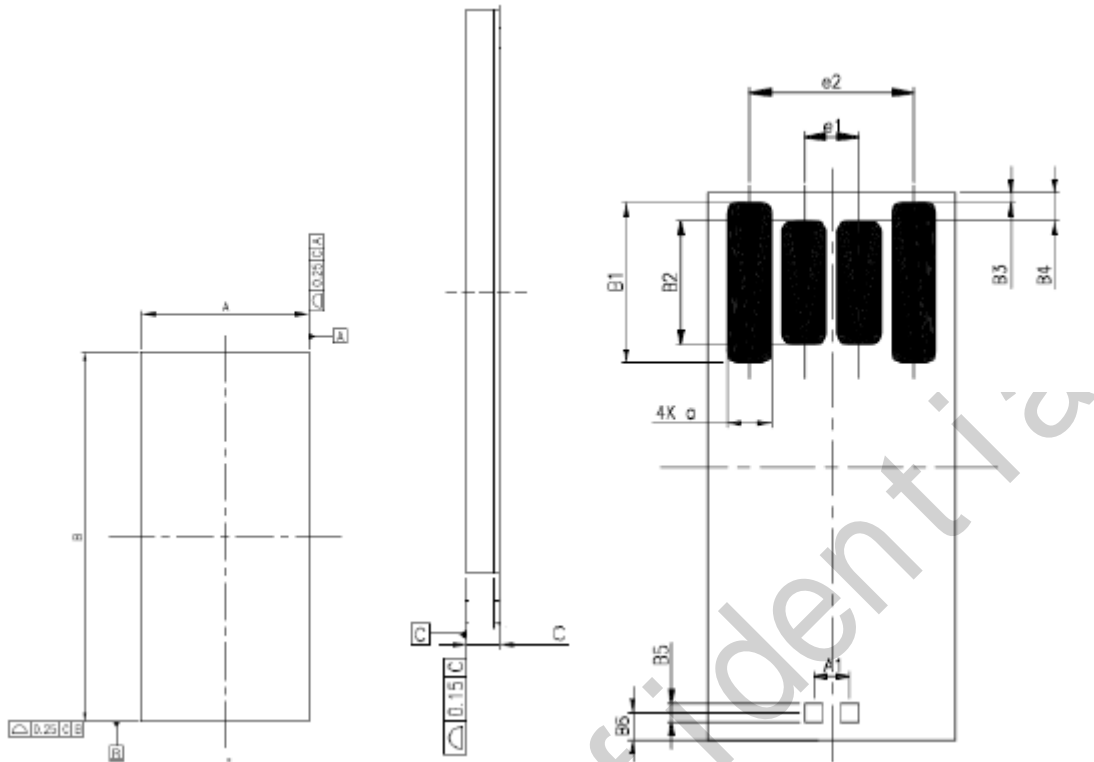
5. Physical Dimension

5.1 Micro UFD



SYMBOL	TYPE GB			TYPE GBL		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	11.20	11.30	11.40	11.20	11.30	11.40
A1	N/A			1.55	1.65	1.75
a	1.30	1.40	1.50	1.30	1.40	1.50
a1	1.70	1.80	1.90	1.70	1.80	1.90
B	14.90	15.00	15.10	14.90	15.00	15.10
B1	6.90 BSC.			6.90 BSC.		
B2	5.90	6.00	6.10	5.90	6.00	6.10
B3	0.40 BSC.			0.40 BSC.		
B4	0.90 BSC.			0.90 BSC.		
B5	N/A			0.75	0.85	0.95
B6	N/A			1.23 BSC.		
C	1.30	1.40	1.50	1.30	1.40	1.50
C1	1.10 REF.			1.10 REF.		
C2	0.30 REF.			0.30 REF.		
C3	N/A			0.75	0.85	0.95
e1	7.00 BSC.			7.00 BSC.		
e2	2.00 BSC.			2.00 BSC.		

5.2 UFD



SYMBOL	TYPE AD			TYPE ADL			TYPE AD-1			TYPE ADL-1		
	MIN.	NOM	MAX.	MIN.	NOM	MAX.	MIN.	NOM	MAX.	MIN.	NOM	MAX.
A	11.20	11.30	11.40	11.20	11.30	11.40	11.20	11.30	11.40	11.20	11.30	11.40
A1	N/A			1.55	1.65	1.75	N/A			1.55	1.65	1.75
o	1.90	2.00	2.10	1.90	2.00	2.10	1.90	2.00	2.10	1.90	2.00	2.10
B	24.70	24.80	24.90	24.70	24.80	24.90	24.70	24.80	24.90	24.70	24.80	24.90
B1	7.29 BSC.			7.29 BSC.			7.29 BSC.			7.29 BSC.		
B2	5.49	5.59	5.69	5.49	5.59	5.69	5.49	5.59	5.69	5.49	5.59	5.69
B3	0.405 BSC.			0.405 BSC.			0.405 BSC.			0.405 BSC.		
B4	1.255 BSC.			1.255 BSC.			1.255 BSC.			1.255 BSC.		
B5	N/A			0.75	0.85	0.95	N/A			0.75	0.85	0.95
B6	N/A			1.23 BSC.			N/A			1.23 BSC.		
C	1.30	1.40	1.50	1.30	1.40	1.50	1.30	1.40	1.50	1.30	1.40	1.50
e1	2.50 BSC.			2.50 BSC.			2.50 BSC.			2.50 BSC.		
e2	7.50 BSC.			7.50 BSC.			7.50 BSC.			7.50 BSC.		