

The Flexxon logo, consisting of the word "FLEX" in a light blue font, a stylized diamond icon composed of four smaller diamonds in shades of blue and purple, and the word "ON" in a dark blue font.

# WORM USB Specification



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**Version 1.1**

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# 1. GENERAL DESCRIPTION

## 1.1 Introduction

**Write Once Read Many (WORM) USB** is designed for special application such as Financial Industry Regulatory Authority, Exchange Commission for records protection.

**Write Once Read Many (WORM) USB** is WORM mode by default. The WORM USB will change to write protect mode if the user performs illegal action such as delete file/directory, rename file/directory, change existed data, overwrite file data and disk format. This can prevent the data be erased, modified or overridden.

## 1.2 Product Overview

◆ <b>Flash</b> MLC	◆ <b>Host Interface</b> USB 2.0 Type A
◆ <b>Capacity</b> 8GB to 32GB	◆ <b>Enhanced error correction</b>
◆ <b>Support FAT32</b>	◆ <b>Compliant with Universal Serial Bus Specification Revision 2.0</b>
◆ <b>5V USB bus power operation</b>	◆ <b>Compliant with USB Mass Storage Class Bulk only Transport Specification Rev. 1.0</b>
◆ <b>WORM Mode by default</b>	◆ <b>Support High-speed (480Mbps) and Full-speed (12Mbps) Data Transfer</b>
◆ <b>Adaptive wear leveling</b>	◆ <b>Temperature Range</b> Operation (Diamond) : -40°C ~ 85°C Storage: -50°C ~ 95°C
◆ <b>SMART function support</b>	◆ <b>Management of sudden power-fails</b>

## 2. PRODUCT SPECIFICATIONS

### 2.1 Performance

Capacity	Sequential	
	Read (MB/s)	Write (MB/s)
8GB	33	12
16GB	33	12
32GB	33	12

**Table 2-1 Performance of WORM USB**

**NOTES:**

1. The performance is obtained from TestMetrix
2. Performance may vary from flash configuration and platform.

### 2.2 Power

Capacity	Read (mA)	Write (mA)	Standby (mA)
8GB	165	160	60
16GB	165	160	60
32GB	165	160	60

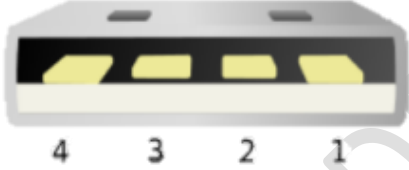
**Table 2-2 Typical Power Consumption of WORM USB**

### 2.3 MTBF

MTBF, an acronym for Mean Time Between Failures, is a measure of a device's reliability. Its value represents the average time between a repair and the next failure. The higher the MTBF value, the higher the reliability of the device. The predicted result of WORM USB is more than 3,000,000 hours.

### 3. Pin Assignments

Pin No.	Pin Name	Function
1	VCC	USB power input
2	USB D-	USB differential signal
3	USB D+	The pair are used to transmit Data/Address/Command
4	V <sub>SS</sub>	Ground



**Table 3-1 USB PIN Assignments**

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### 3.1 Absolute Maximum Ratings

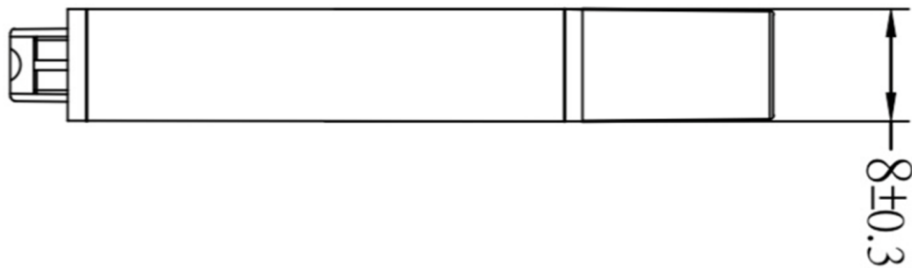
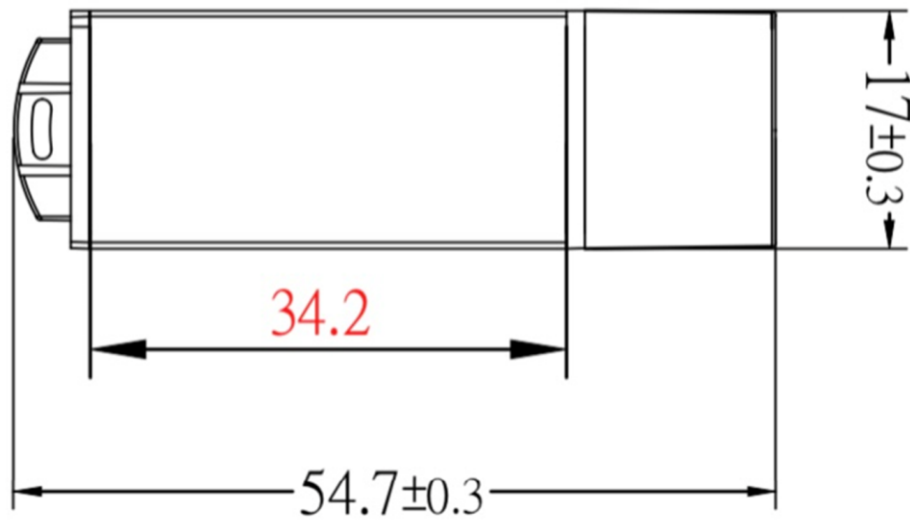
Parameter	Rating
Vcc with respect to GND	-0.5V to +5.5V
Operating Temperature	-40°C ~ 85°C

### 3.2 DC Characteristics

Parameter	Symbol	Min	Max.	Unit	Remarks
Supply Voltage	$V_{DD}$	4.5	5	5.5	v
Input Voltage High	$V_{IH}$	2			v
Input Voltage Low	$V_{IL}$			0.8	v
Output Voltage High	$V_{OH}$	$85 * V_{DD}$			v
Output Voltage Low	$V_{OL}$			0.4	v

## 4. Physical Dimension

Dimension: 54.7mm(L)  $\pm$  0.3mm x 17.0mm(W)  $\pm$  0.3mm x 8.0mm(H)  $\pm$  0.3mm



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## 5. Ordering Information

Capacity	MPN (Diamond Grade)
8GB	FUUP008GME-XE00
16GB	FUUP016GME-XE00
32GB	FUUP032GME-XE00

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## REVISION HISTORY

Revision	Date	History
1.0	2021/06	Preliminary Release
1.1	2021/08	Update Physical Dimension

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