



Industrial USB 2.0 Read-Only Mode (ROM) MLC

A decorative horizontal line in purple, starting with a diamond shape on the left and ending with a solid line on the right.

Version 1.0

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1. GENERAL DESCRIPTION

1.1 Introduction

The Read-Only Mode is highly effective in a USB device to ensure data security. Read-Only mode provides a tamper-proof data storage solution by making it unalterable and the crucial files remain safe.

FLEXXON Read Only Mode (ROM) USB Pen Drive provides security function to prevent the stored data from being stolen, tampered or modified by others. Once you activate the Read-Only mode into the USB, all the stored data enables access for reading only. None can change, delete, or overwrite anything from the stored data. So, you can preserve the authenticity of the essential files into the USB and prohibit it from the risk of alteration. Write access could only be enabled by authorized user with specific tool and correct password.

FLEXXON ROM USB Pen Drive plays an important role in various applications where ensuring data authenticity is extremely important. For example, in medical and healthcare facilities, financial institutes, business organizations, the cybersecurity industry, etc. will be beneficial by utilizing Read-Only Mode USB.

The read only mode is an additional feature, which will not affect the standard product specification.

1.2 Product Overview

◆ Flash MLC	◆ USB Specification Revision 2.0
◆ Capacity 8GB to 32GB	◆ Support Auto Read Refreshment
◆ Support Data Encryption	◆ Adaptive wear leveling
◆ Read disturbance management	◆ SMART function support
◆ Support management of sudden power fails	◆ High Random 4KB IOPS and reliability
◆ Temperature Range Operation (Diamond): -40°C ~ 85°C ◆ Storage: -40°C ~ 85°C	

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1.3 Workflow

FLEXON ROM USB Pen Drive is a normal mode by default. User could set the password to enable read only mode by software tool.

Note: User is required to eject and re-insert the after set the password.

User could enable write access by the legal host with security tool and enter correct password. When user power off the host or reinsert the USB, the USB will return to read only mode.

Enable ROM Function by Software Tool and Password

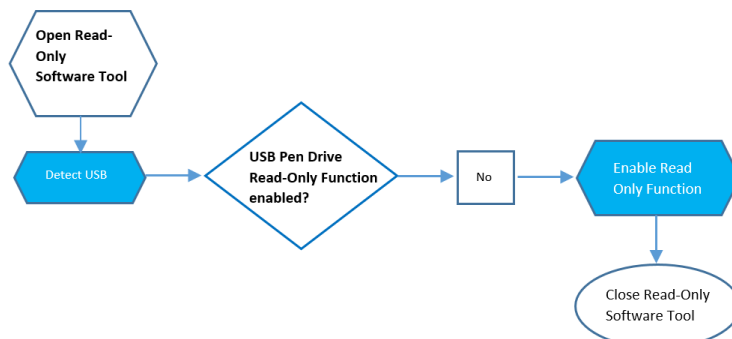


Figure 1-1: Enable ROM Function by software tool and password

Enable Write Access by software tool and password

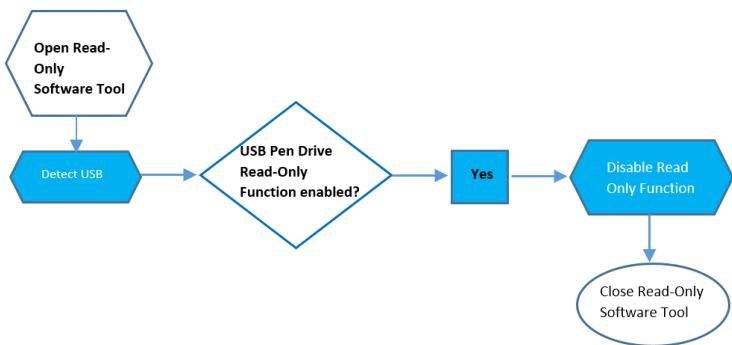


Figure 1-2: Enable Write Access by software tool and password

2. PRODUCT SPECIFICATIONS

2.1 Performance

Capacity	Sequential	
	Read (MB/s)	Write (MB/s)
8GB	27.3	20.6
16GB	27.3	20.6
32GB	27.3	20.6

Table 2-1 Performance of ROM USB

NOTES:

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

2.2 Power

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

Table 2-2 Typical Power Consumption of ROM 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 ROM 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	VSS	Ground

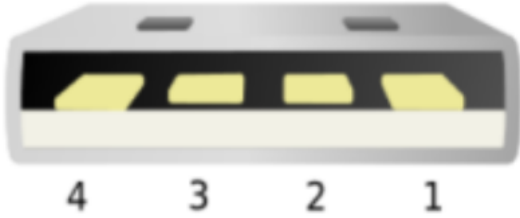


Table 3-1 Pin Assignments

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4. Electrical Characteristics

4.1 Absolute Maximum Ratings

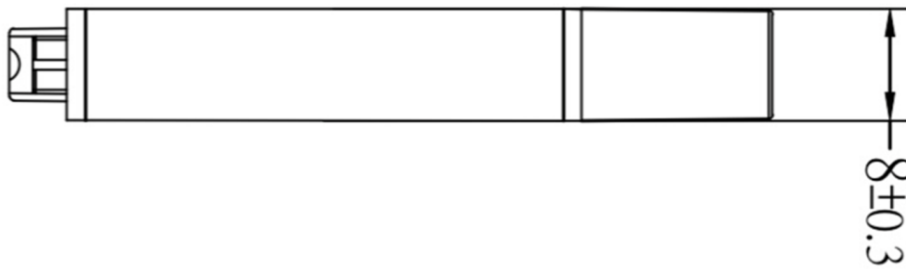
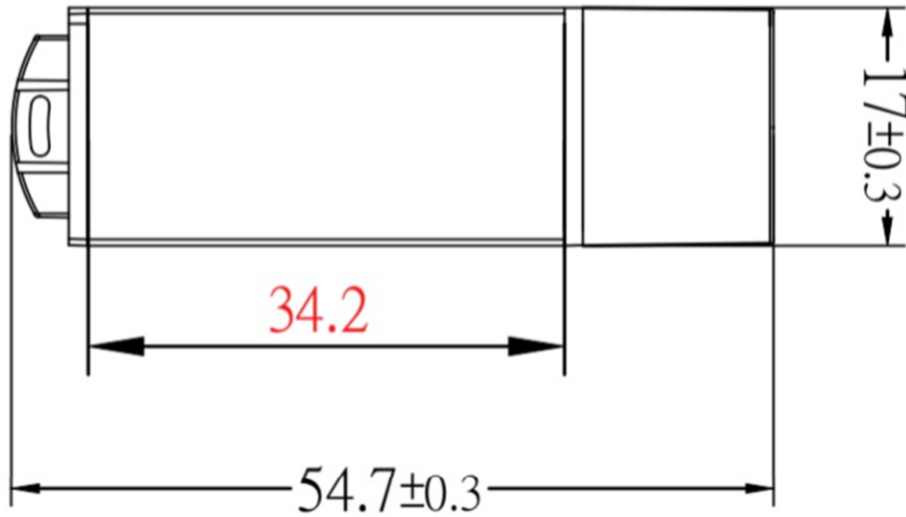
Parameter	Rating
V _{CC} with respect to GND	-0.5V to +5.5V
Operating Temperature	-40°C~ +85°C

4.2 DC Characteristic

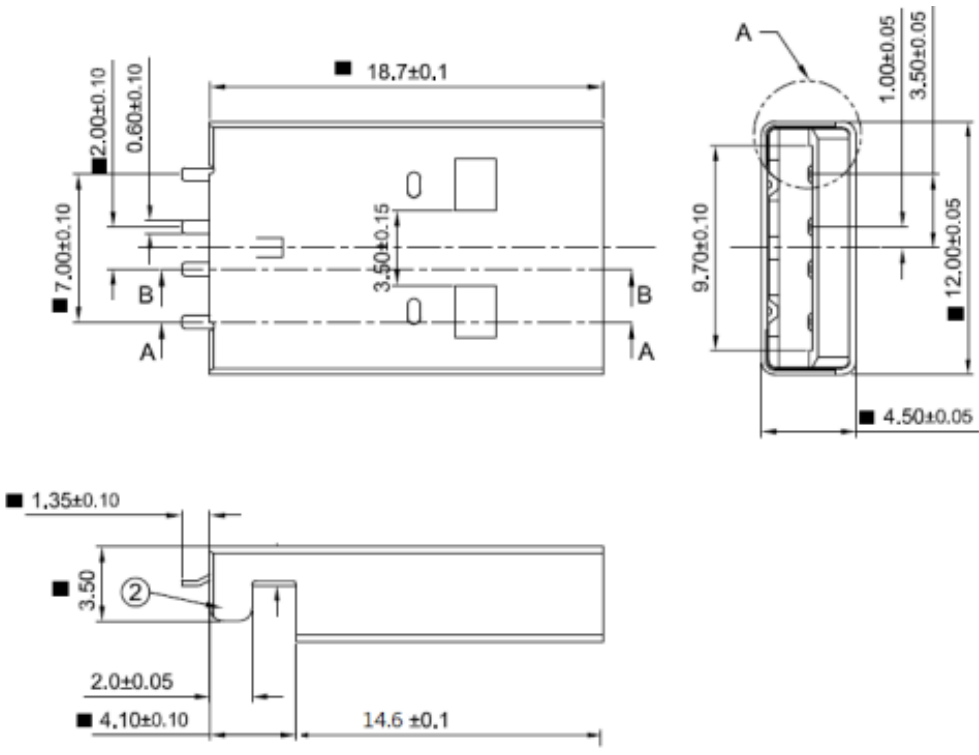
Symbol	Parameter	Min	Typ	Max	Unit
V _{DD}	Supply Voltage	4.5	5	5.5	V
V _{IH}	Input Voltage High	2			V
V _{IL}	Input Voltage Low			0.8	V
V _{OH}	Output Voltage High	85%*V _{DD}			V
V _{OL}	Output Voltage Low			0.4	V

5. PHYSICAL DIMENSION

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



5.1 USB Connector Dimension



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6. ORDERING INFORMATION

Capacity	MPN (Diamond Grade)
8GB	FUUP008GME-XR00
16GB	FUUP016GME-XR00
32GB	FUUP032GME-XR00

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REVISION HISTORY

Revision	Date	History
1.0	2021/08	First Release

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