

Off-line Writer User Manual

Release Version B

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Lumissil Off-line Writer can help customers program Lumissil MCU flash during the product mass production stage. Customers can use this device with USB power to connect with customer's MCU board via SPI for flash programming without PC.

1. Hardware Introduction

1.1 Hardware Configuration

- **PWR**: 5V power supply from the mini-USB connector (Do not turn on the power of the Target Board during flash programming.)
- JP1: Two Power selections: 5V (bottom switch), 3.3V (top switch) (Depend on the MCU ISP interface power requirement of the target board)

JP2: Update Selections: TARGET (left switch), BIOS for Off-line Writer (right switch)

START: Start key

RESET: Reset key

ISP Connector: Writer Mode & ISP mode connector



1.2 The definition of PWR/DATA/PASS/ERR LED



- 1. PWR LED on/ ERR red LED off/ PASS green LED on: Off-line Writer is ready for operation after power-up.
- 2. PASS green LED blinking: The burning process is in progress.
- 3. PASS green LED on and DATA blue LED on: The burning process is completed correctly.

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1.3 What does the ERR LED mean

- 1. ERR red LED on: The execution of ISP command failed.
- 2. ERR red LED blinking: BurningTimes counter has reached the programming counter limit setting.
- 3. ERR red LED on and PASS green LED blinking: Main memory download/verify failed.
- 4. ERR red LED on and PASS green LED on: IFB download/verify failed.
- 5. If ERR red LED is still on after 10 seconds after Off-line Writer is powered on, please try to press the "**RESET**" button to reset the device for usage.



2. Load burning code to Off-line Writer for Target

2.1 Off-line Writer connection with EzISP board

Below is hardware setup for Off-line Writer and EzISP connection. EzISP USB port is connected to the PC USB port. JP2 is set at **BIOS** mode.



2.2 Program code to Off-line Writer via EzISP

The Off-line Writer LED indicator is as below figure. PWR LED will be on and ERR LED will be in red color when the device power is on. After 7~10 seconds, ERR red LED will be off and PASS green LED will be on. Now Off-line writer is ready for operation.

When burning code to Off-line Writer via EzISP is in process, PASS LED will be green blinking and will turn stable green once burn-in completes successfully. Meanwhile, DATA blue LED will be in stable blue color to indicate burn-in completion successfully. ERR LED will be in red color when there is an error occurred.



Below are four steps to program code to Off-line Writer via EzISP

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Step 1: Run EzISP v3.2.x or later version. Select Off-line Writer device name CS8967G0_1(off) and ISP Mode as below figure

EOIMISSIE				-		~
File(<u>F</u>) Setu	IP(S) Tool(T)	Help(H) ISP	 CS8967G0_1(Oil 	 Program(P) 		
Ma	Main block Info	rmation block(IFB)				
LOad						
→						
Auto Run						
-OPTION-						
Erase						
1						
Blank						
Write						
Verify						
BootCode						
/w IFB						

Step 2: Load the burning code file as below. Press " **Load**" and select the burning hex file and click "**Open**"

oad +0x0000000	00 🛃 🗕 Open 10 8A				
to Run	20 22 6 7 4	· · · · · · · · · · · · · · · · · · ·		✓ Ø ,2 5e	inch-Referin
PTION- 0x000000	40 43 Organice N	en felder			01+10
ax0000000	50 F9 0 1C OneDrive	* ER	(#2:5%)	92	大小
0x0000000 0x0000000 amik 0x0000000 0x0000000 0x0000000	70 8E 単比単版 80 12 20 万余 80 12 20 万余 80 12 20 万余 80 1E 日本市会社 80 1E 日本市会社 80 8A 7 80 1E 日本市会社 80 8A 7 80 5E 日本市会社 80 5E 日本会社 80 5	SCR874 sample.hex Edint.bin Sologotent.bin USBERROR.hex EXR.ME	2016/3/26 1646 2021/10/21 1131 2021/10/9 10:31 2021/4/21 15:26 2021/6/21 16:54	Lettel HEX binary — BIN 交件 BIN 交体 Intel HEX binary — 快速方式	1 1 352 1

Step 3: Load burning code file for IFB as below if necessary. If it is not necessary, please skip this step.

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	Load Data	0	1	2	3	4	5	6	7	8	9	A	В	С	D	E	
Load	Same ab abi c	k he	re	7F	2	5	F3	FF	FF	FF	FF	FF	2	2	67	E4	F
	0x000000010	8A	F5	8C	53	8E	F7	75	89	21	53	88	CF	D2	A9	D2	8
	0x000000020	22	FF	FF	2	8	7	8F	1D	8E	1C	8D	1B	8C	1A	90	A
to Run	0x00000030	46	74	6	FO	A3	74	AO	FO	90	AO	56	74	10	FO	A3	F
PTION-	0x000000040	43	8E	10	75	98	50	43	89	20	43	87	80	E4	7B	40	F.
	0x000000050	F9	F8	AF	21	AE	20	AD	1F	AC	1E	12	4	5	AB	1D	A
Eraso	0x00000060	1C	A9	1B	A8	1A	12	4	5	EF	F4	4	F5	8D	F5	8B	D
Blank	0x000000070	8E	D2	AC	22	FF	F										
	0x00000080	FF	FF	FF	FF	FF	FF	E4	F5	18	F5	19	7F	20	12	9	2
	0x00000090	12	9	AA	7F	21	12	9	23	C0	7	7F	22	12	9	23	A
-	0x0000000A0	7	D0	7	12	9	47	75	21	0	75	20	24	75	1F	F4	7
A Continue	0x000000B0	1E	0	7F	80	7E	25	7D	0	7C	0	12	0	26	12	0	E
write	0x0000000C0	7F	44	12	9	D5	12	7	в	C2	D9	7F	4	7E	0	12	٤
H	0x000000D0	8 A	12	9	6A	7F	2	7E	0	12	9	8A	7B	E1	7A	73	7
/erify	0x000000E0	81	7F	C0	12	8	D7	E4	FB	FA	7D	90	12	8	D7	D	1
Contrary .		-	07	D	12	0	DZ	D	12	8	D7	D	12	8	DZ	F4	E

Step 4: Check **Erase**, **Write**, **Verify**, and press "**Auto Run**". There pops out the below dialog box.

Prompt inf	ormation
?	Modify the burning times?
	OK Cancel

If you do not need to modify the parameters, press "**Cancel**" or close the window by clicking the x at the right top in the above figure. Press "**OK**" and there pops out below window.



BurningTimes:	65	535			
SecurityKey:					
FF : FF : FF :	FF : FF	FF:	FF	: FF	
I2C speed:	200	KHz	•		
	Ok				

BurningTimes: Set the burning times between 1~65535. This setting will limit the programming count of Off-line Writer.

- SecurityKey: Set the security code that you want to choose for the target board.
- I2C speed: Set the communication speed between the Off-line Writer and the target board.

At this point, EzISP will start communication with the Off-line Writer for ISP commands, and "Handshake Error!" message as below figure might pop out. In the case "Handshake Error!" message pops out, press the "RESET" button of Off-line Writer within five seconds to retry.

After Off-line Writer is successfully programmed, users can refer to Chapter 3 to program the target boards with the Off-line Writer without EzISP connecting to the PC.

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3. Use Off-line Writer to program Target boards

After the burning code is loaded to Off-line Writer, users can program target devices without PC and the burning counter will depend on the BurningTimes setting in Step 4 of <u>Section 2.2</u>.

3.1 Hardware Connection

- JP1: Choose 3.3V or 5V Power. The selection depends on the MCU ISP interface power requirement of the target board.
- JP2: Choose **"TARGET**" or **"BIOS**" mode. Choose **TARGET** mode to program target boards. TARGET: Program target boards.

BIOS: Load burn-in code to Off-line Writer.



The ISP connector pins are defined as follows:





Note: Users need to reserve SDA / SCL (P1.4 / P1.5 or P1.2 / P1.3) pins of the target board MCU for connection with ISP connector.

3.2 Burning program to Target board

- Step 1: After confirming the connection setup is correct, connect the USB power supply and the PWR LED will be on and ERR LED will be in red color.
- Step 2: After 7-10 seconds, the PASS green LED will be on and the ERR LED will be off. Now the Off-line Writer is ready for operation.
- Step 3: Press "**START**" button and the burning process starts with the PASS green LED blinking.
- Step 4: The program is burned correctly with the PASS green LED on and DATA blue LED on.

3.5 Supported part number list

Below is our Off-line Writer MCU-supported list so far. Please contact us if you can't find your interested Lumissil MCU parts.

IS31CS8974, IS32CS8974, IS31CS8975-16P, IS32CS8975-16P, IS31CS8969, IS32CS8969, IS31CS893, IS32CS8973,

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IS31CS5523, IS31CS5514, IS31CS5110, IS32CS5110, IS31CS5111, IS32CS5111, IS31CS8964, IS31SE5117, IS32SE5117, ISSE5118, IS32SE5118, IS31SE5120, IS32SE5120



REVISION HISTORY

Revision	Detailed Information	Date
А	First Formal Release	2022.07.28
В	 Change EzISP version format from 3.2.xx to 3.2.x Move Section 3.3 The definition of PWR/DATA/PASS/ERR LED to Section 1.2 Move Section 3.4 The ERR LED status when there is an error to <u>Section 1.3</u> <u>What does ERR LED mean</u>? Add parts IS31SE5117, IS32SE5117, ISSE5118, IS32SE5118, IS31SE5120 and IS32SE5120 into Off-line Writer support list. 	2022.10.21