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CW-Writer User Manual

Application Notes

Rev 1.0

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Introduction

This manual describes the use of the CW-Writer for the CW32 microcontroller and the software CW-Programmer that accompanies it. The programmer CW-Writer enables offline or online program burning of the CW32 microcontroller FLASH via the ISP protocol.

Contents

1　Programmer CW-Writer

1.1　Programmer Overview

Figure 1-1 CW-Writer

USB port　　　Burning machine port　　　Burning port

- The CW-Writer is connected to the PC through the USB port to achieve power supply and communication functions, when used offline, it needs to provide DC 5V/500mA or more for the programmer to use;

- The burning machine port of the CW-Writer for automated burning of the burning machine;

- The burning port of the CW-Writer for program burning of the chip;

- The start button, press it to start programming the chip;

- Power light, used to indicate that the power supply of the burner is normal, and it is red and always on;

- Failure light, always on when burning fails, color is red;

- Success light, always on when burning success, color is green;

- Programming light, always on when burning, color is orange;

- The Communication light flashes when the burner communicates with the PC, and the color is blue.

1.2   Description of Programmer interface signal

1.2.1   Burning port

The burning port is an IDC 8P socket, and its signal is defined as follows:

Burning port diagram
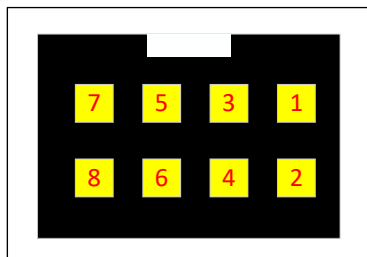
Definition of burning port signal

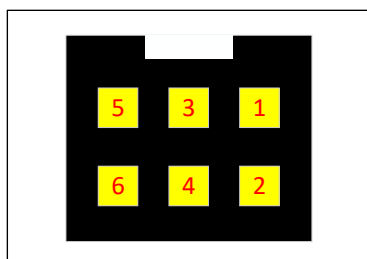| Pin Number	Signal Name	Pin Number	Signal Name
1	BOOT	2	GND
3	VDD	4	RST
5	SCLK	6	SDIO
7	GND	8	VDD

Caution:

Pin 3 and Pin 8 are shorted together inside the burner.

CW-Programmer power supply connection When selecting the target chip self-power supply, VDD is the input pin, which must be connected to the target chip's operating voltage to achieve level matching; When the power supply connection of CW-Programmer selects the power supply of the programmer, VDD is the power supply output pin, which can output 3.3V or 5.0V according to the selection of the host computer.

1.2.2   Burning machine port

The burning machine port is an IDC 6P socket, and its signal is defined as follows:

Burning machine port

Definition of burning machine port signal

Pin Number	Signal Name	Pin Number	Signal Name
1	BUSY	2	PASS
3	GND	4	FAIL
5	VCC	6	START

Caution 1: The input/output signals are active low.
Caution 2: VCC fixed output 3.3V.

2   Software CW-Programmer

2.1   Software Installation

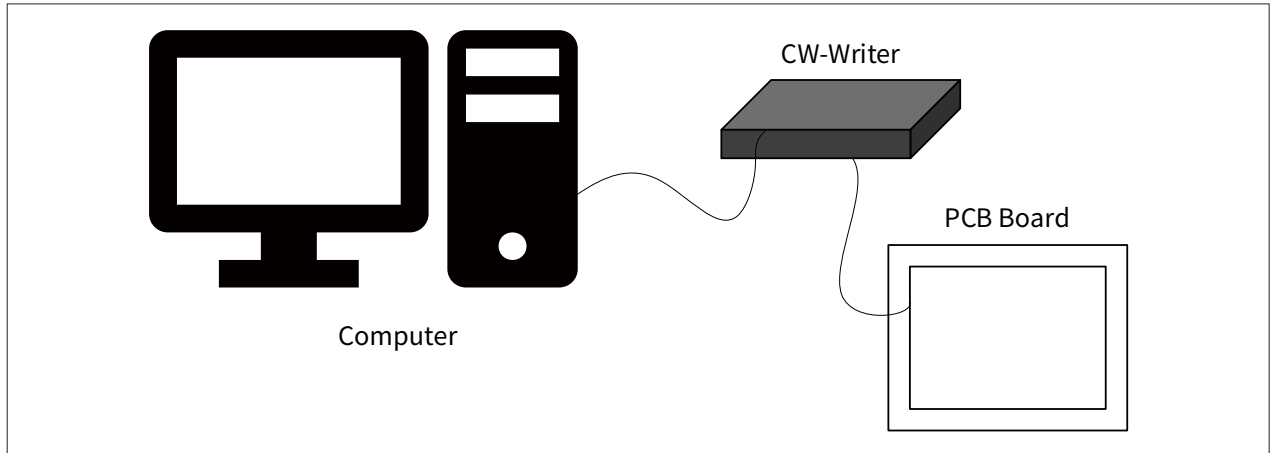CW-Programmer is portable software that does not require installation and can be run directly.

2.2   Software Usage

2.2.1   Online Programming

- Connecting diagram

Figure 2-1 Connecting diagram

The computer is connected to the CW-Writer burner via USB cable, and the burner is connected to the PCB of the program to be burned via an 8-conductor burner cable.

- Instructions for use

    1. Run the CW-Programmer software, if the CW-Writer burner is connected, the software interface shows the following figure:
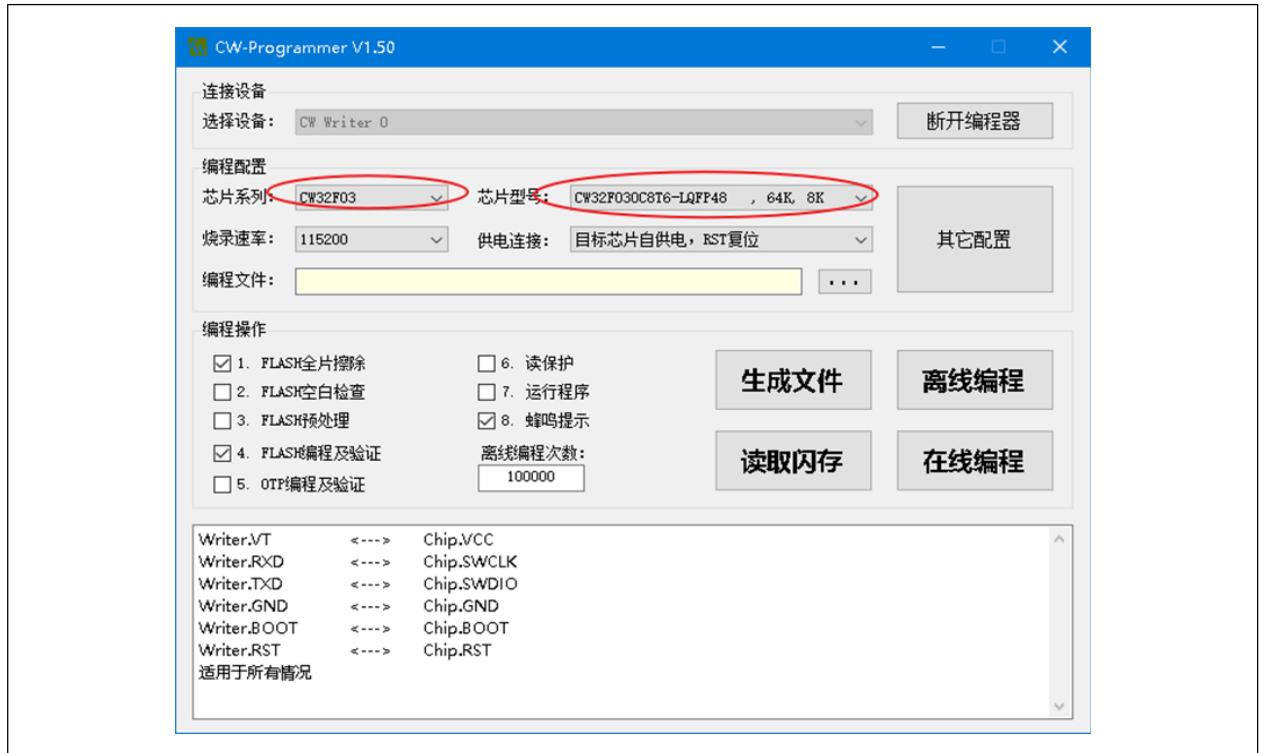
Figure 2-2

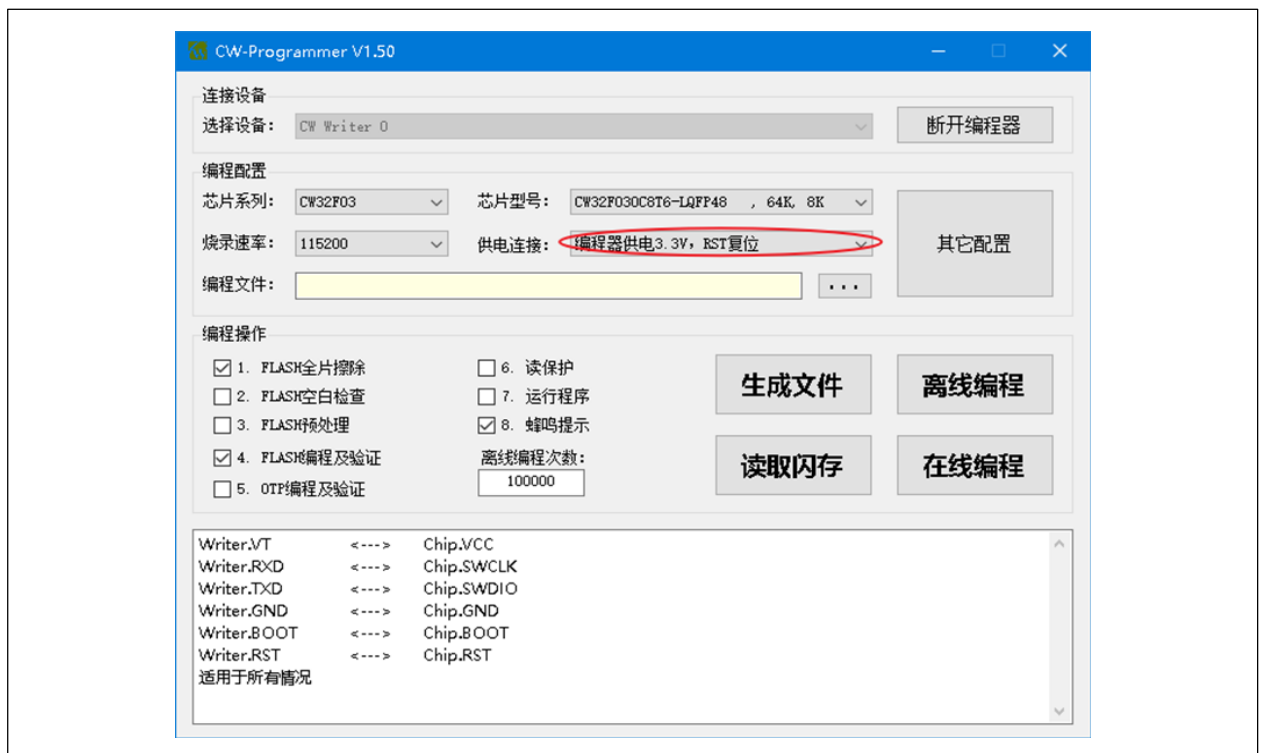Select the device "CW Writer 0" and click "Connect Programmer".

2. After connecting the burner, make the corresponding configuration according to the chip model used in the target board, as follows to select the chip model:
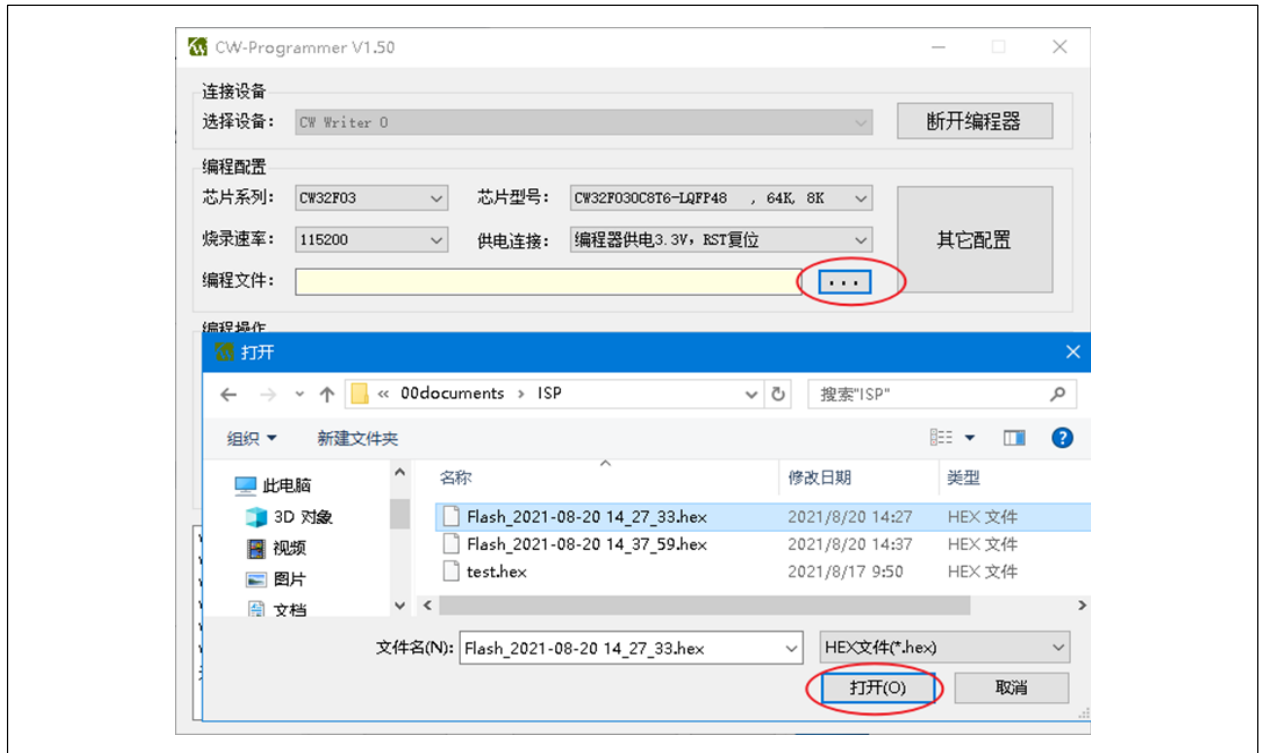
Figure 2-3

Select the power supply and reset method of the chip as follows:
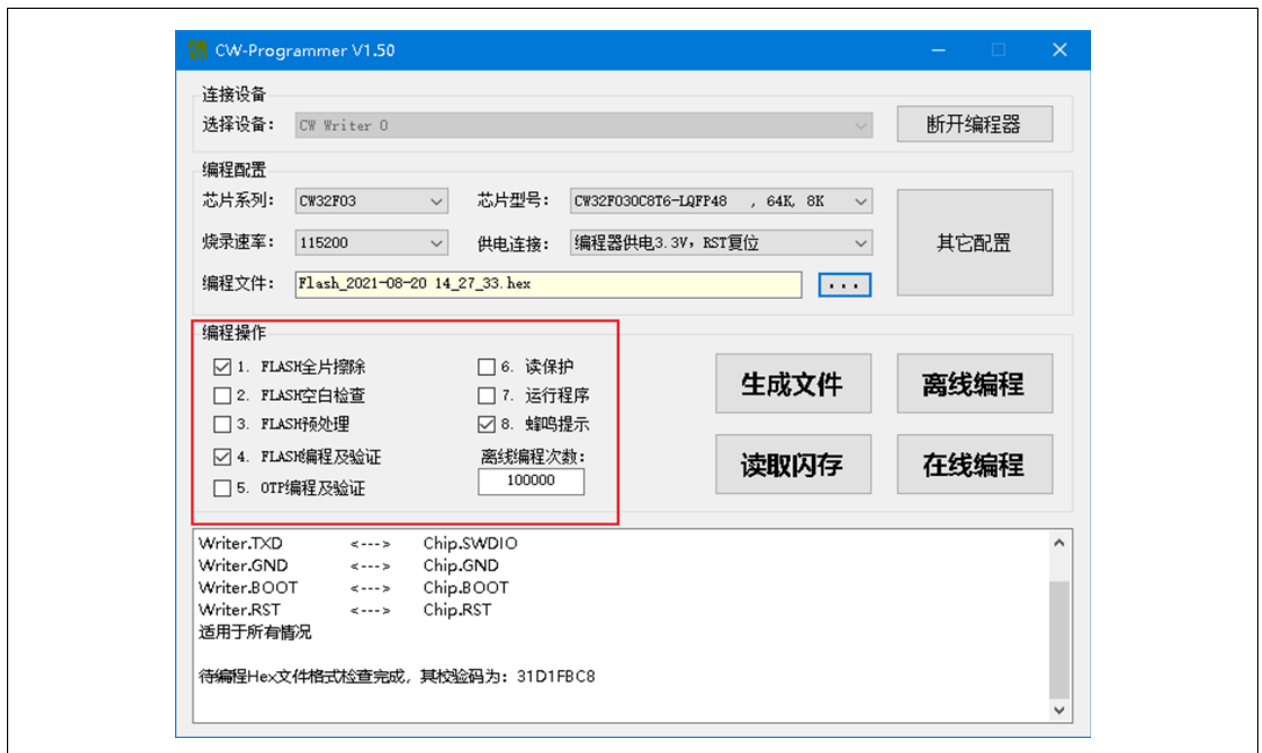
Figure 2-4

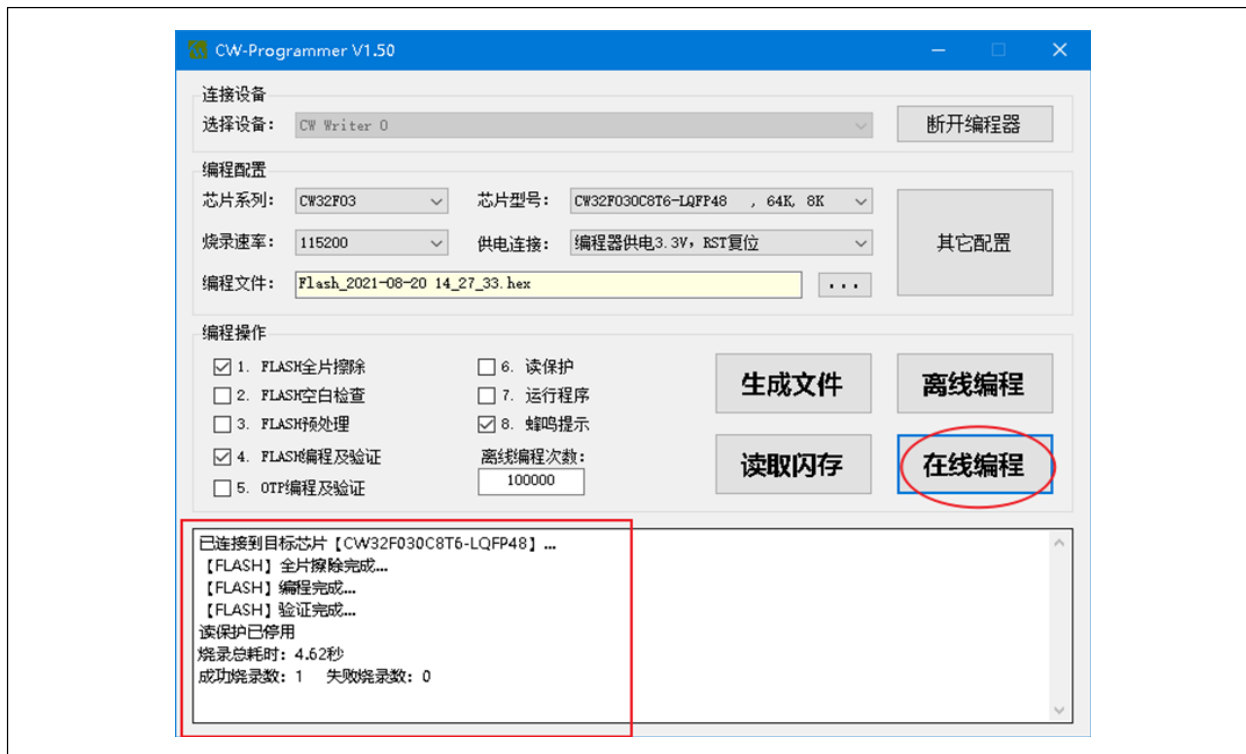Select the program file (in HEX format) to be burned as follows:

Figure 2-5

3. Configure the "Programming operations" as required, as follows:

Figure 2-6

4. Finally, click the "Online Programming" button, and the burn-in information will be displayed in the message box, as follows:

Figure 2-7

2.2.2 Offline Programming

CW-Writer burner can save the programming files in the burner and can be used away from the computer. The operation is basically the same as the online programming procedure. The last step is to click the "Offline Programming" button, and the message box will say "Downloading data to the programmer is complete...", as shown below:

Figure 2-8
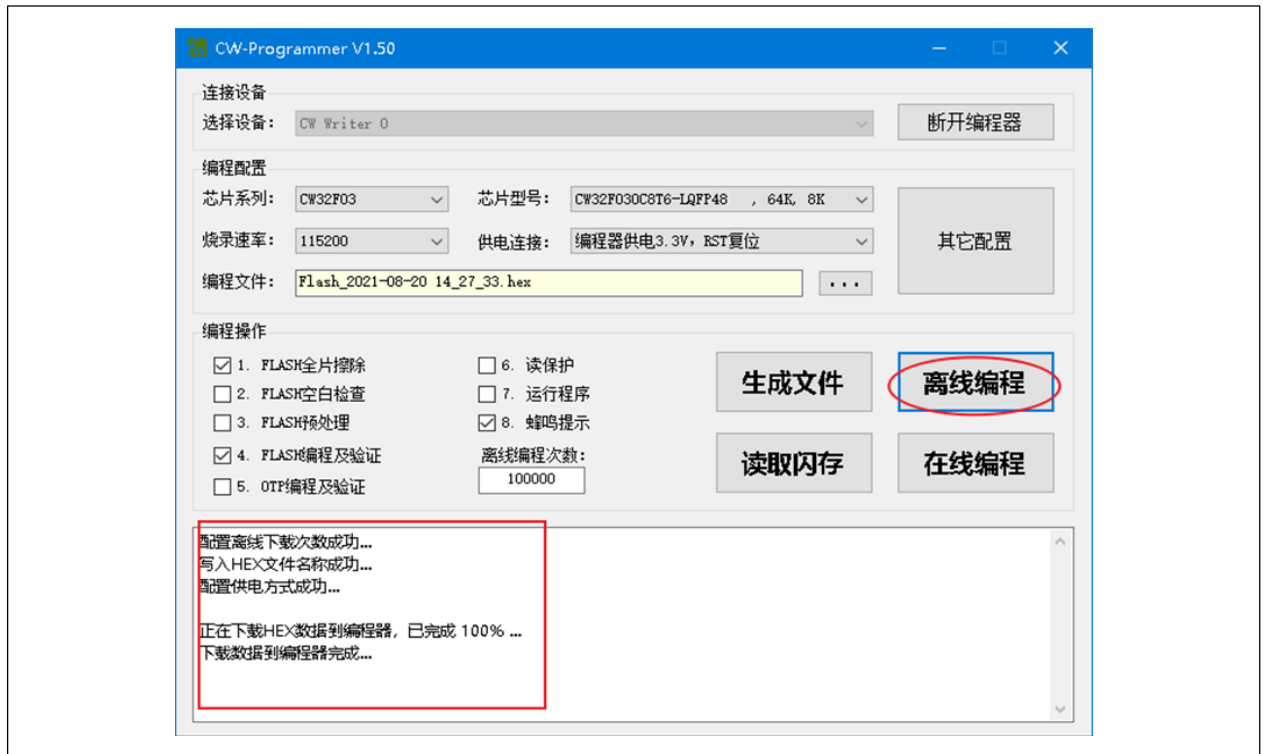
When the burner is powered and properly connected to the target chip through the burner port, press the start button on the CW-Writer to program offline.

Caution: When the number of offline programming is set to 100000, it means there is no limit to the number of programming; when the number of offline programming is less than 100000, the set number is the number of times the program can be successfully written.

2.2.3   Check the remaining number of offline programming

After the CW-Writer is connected to the computer, run the CW-Programmer software and click the "Connect Programmer" button (after connecting, it will show "Disconnect Programmer"), and the remaining offline programming times will be displayed in the information bar, as shown in the following figure:

Figure 2-9
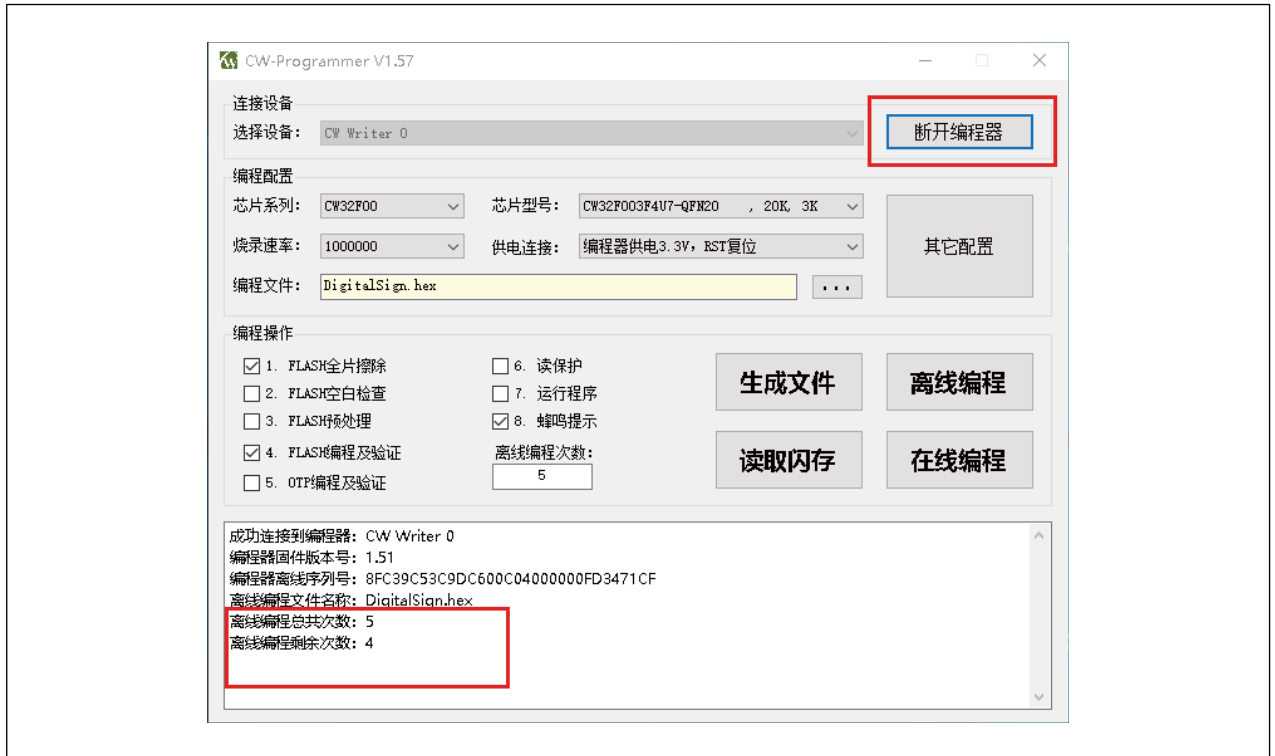
2.2.4   Automatic numbering

When burning the program on the chip, the burning tool can write the number to the specified area of the chip in an incremental manner, which can be the OTP area, or the FLASH area. However, if it is a FLASH area, it must not occupy the area used by the program to be written. The configuration method is as follows:

1. click the "Other Configuration" button to bring up the "Advanced Programming Configuration" dialog box;

2. Check the "Enable" item of auto numbering in the dialog box, and fill in the "Start Address" (Note: When the address is OTP address, it is saved in the OTP area), "Step Value", "Number Length" and "Start Number" of the number saving location, as shown in the figure below:

Figure 2-10
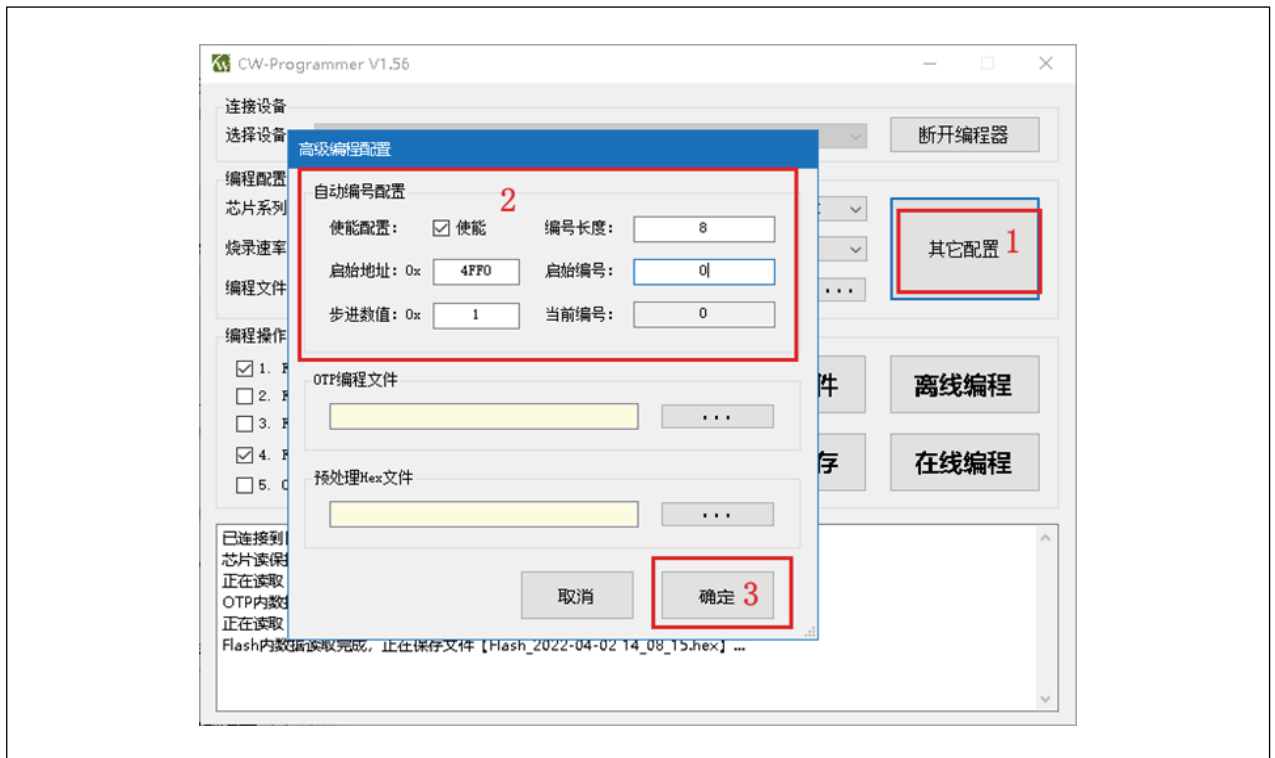
3. Program the chip online/offline, the chip will be numbered automatically.

Caution: In online programming mode, the current configuration and current number will not be recorded after CW-Programmer software is closed; in offline programming mode, the configuration and current number will be saved in CW-Writer, and the data will not be lost after power off, and the chip number will continue the previous number after power on again.

2.2.5 Generate project files

The project file is used for mass production. The project file contains the configuration parameters required by CW-Writer and the Hex file to be burned, and the project file is stored in an encrypted way, which greatly reduces the risk of Hex file leakage. The generation method is as follows:

1. Configuration of additional options by online programming or offline programming;

2. Configure the automatic numbering function as required;

3. Click the "Generate File" button to bring up the "Generate Project File" dialog box, as shown below:
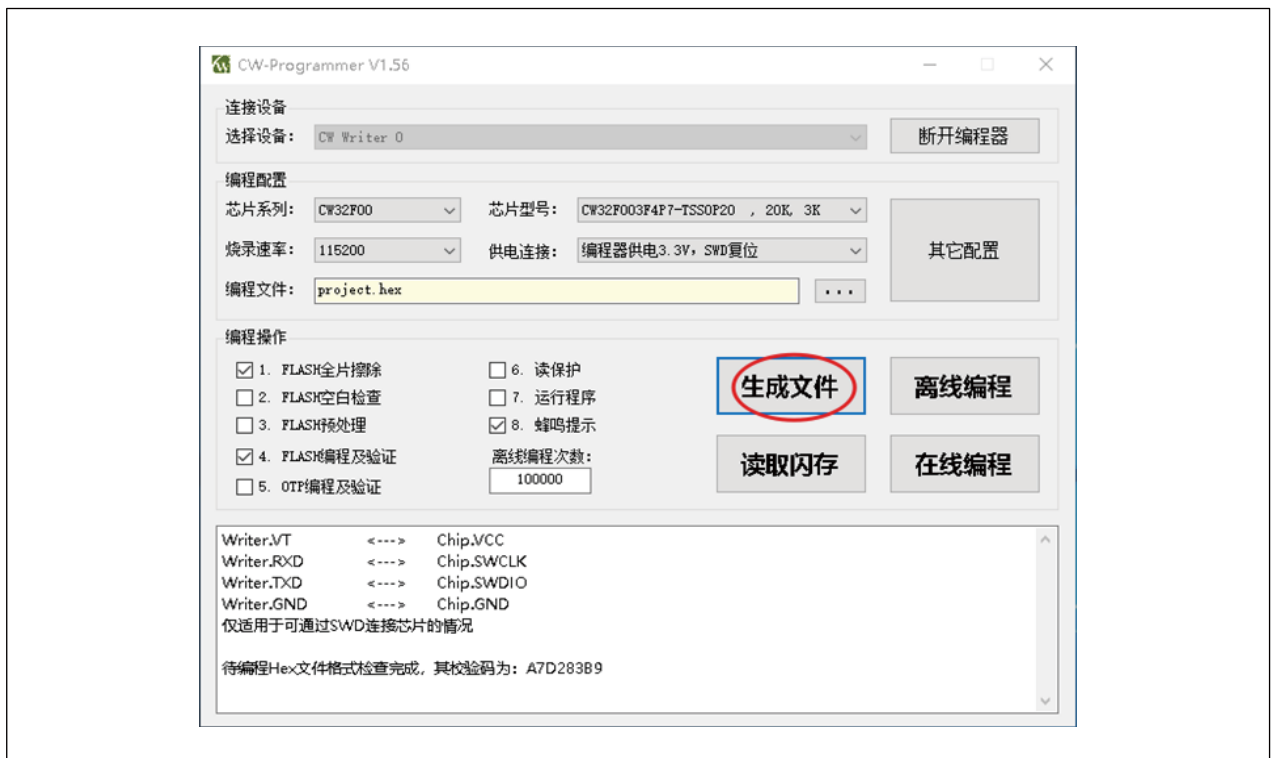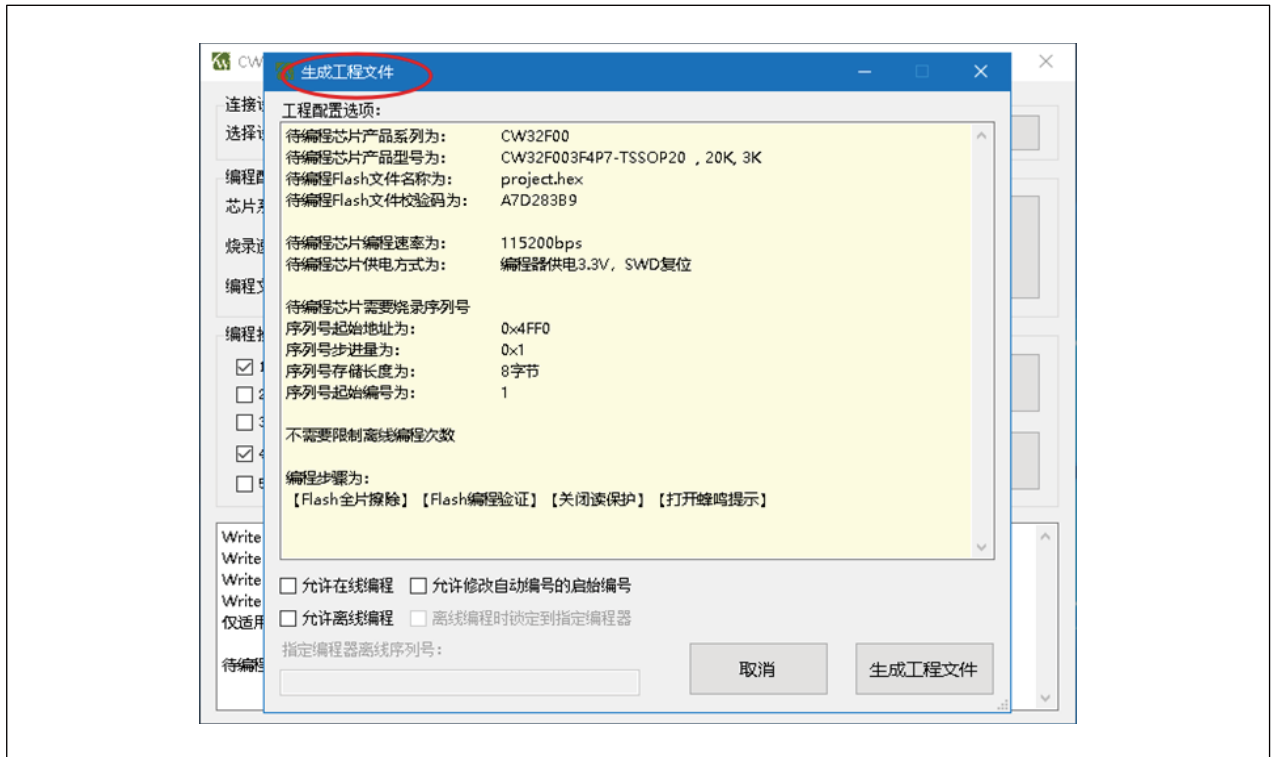
Figure 2-11

Figure 2-12

4. Click "Generate Project File" button, a file with the same name as the programmed file and the extension Prog will be generated in the directory where the programmed file is located.

Caution 1: If you want to generate the project file for online programming, please check "Allow online programming"; if you want to generate the project file for offline programming, please check "Allow offline programming".

Caution 2: After selecting "Allow Offline Programming", you can bind the project file and programmer, that is, the project file can only be used by the specified programmer, and when binding the programmer, you need to specify the serial number of the programmer. The serial number of the programmer can be obtained in the information box when the programmer is connected, as follows :

Figure 2-13
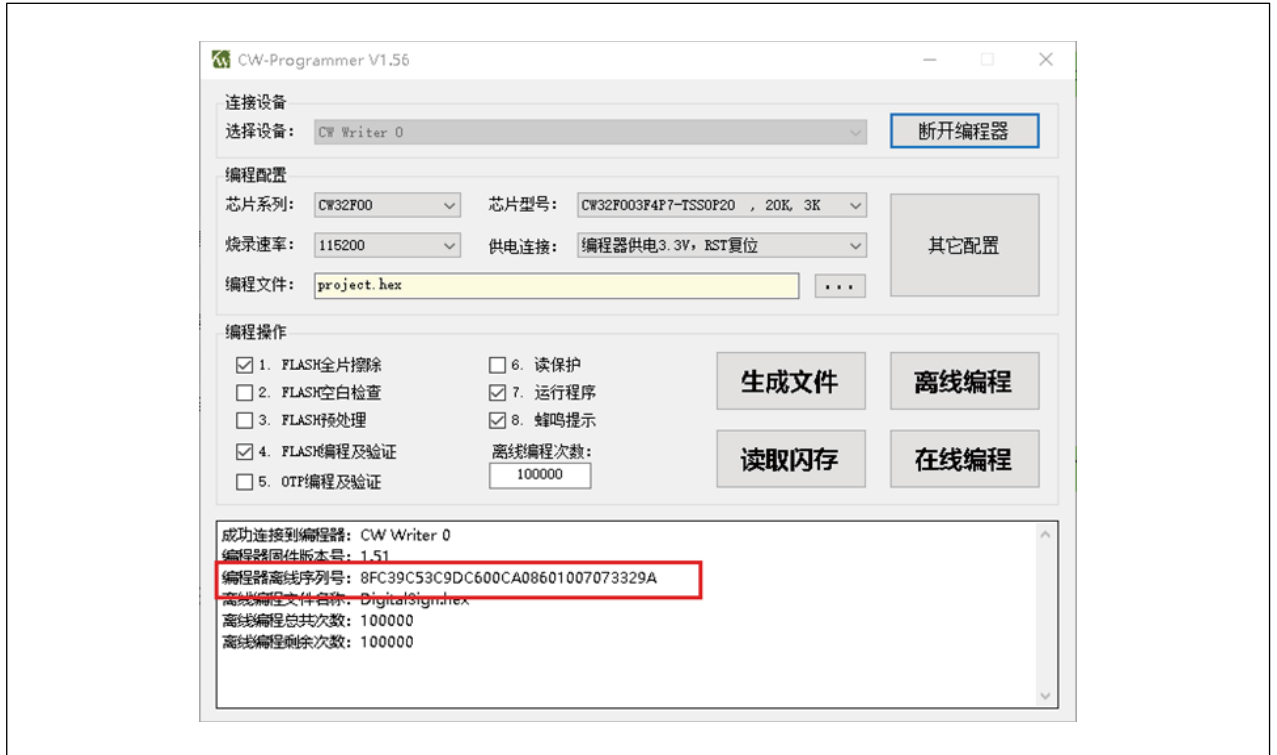
2.2.6   Use of project files

1. Connect your computer to CW-Writer, then start CW-Programmer software and connect the programmer.

2. Select the required project file (note that you need to select the extension as Prog) at the "Programming File" and open it as follows :
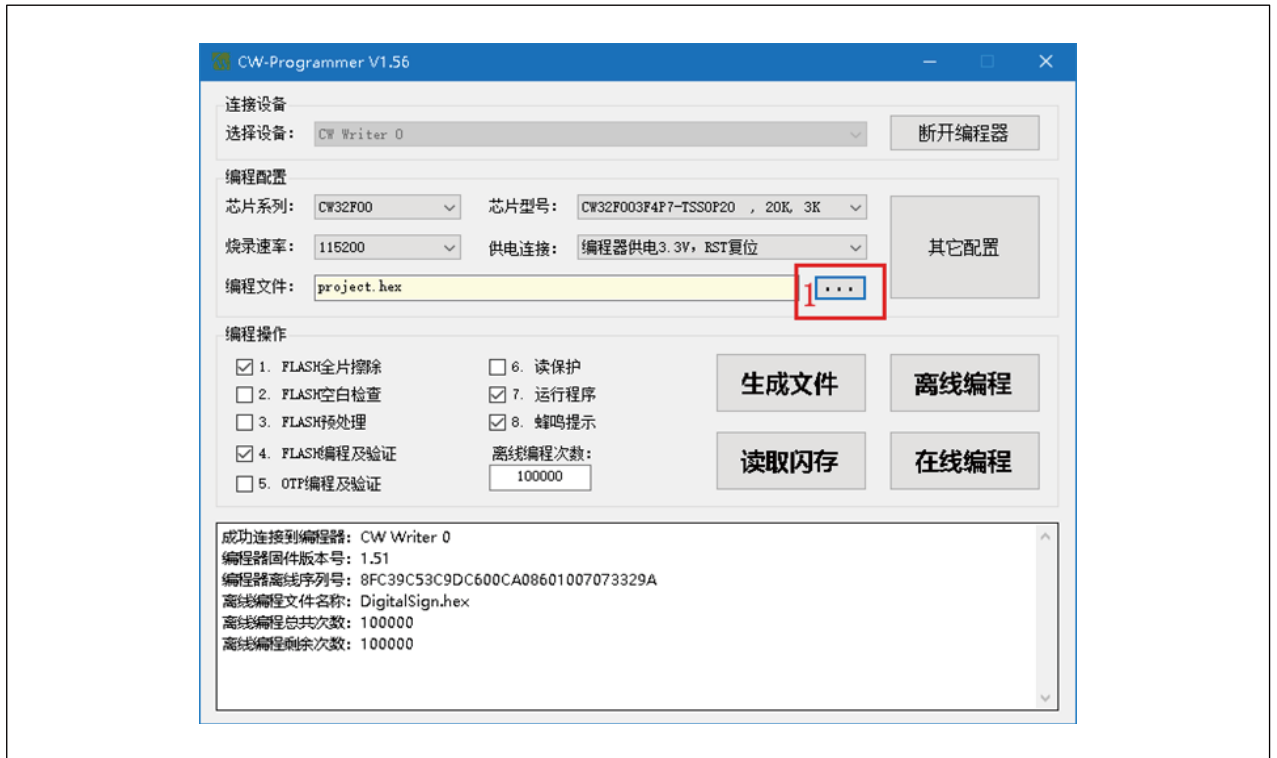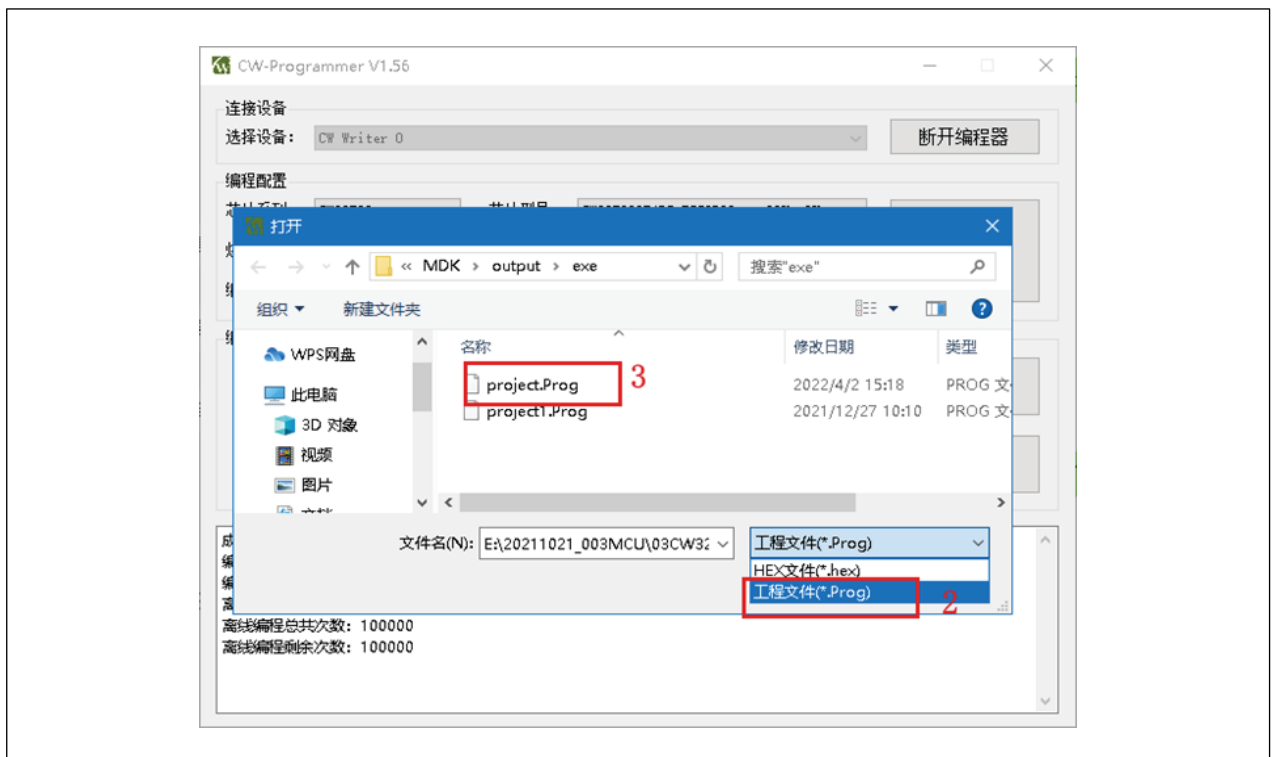
Figure 2-14

Figure 2-15

3. Run the burn-in program.

Caution 1: If you load the online programming project file, click "Online Programming" to burn in the program to the chip, as shown in the figure below:

Figure 2-16

Caution 2: If you load the offline programming project file, click "Offline Programming", the project file will be imported into CW-Writer, and then you can use CW-Writer to burn the program on the chip directly without the computer, as the following figure:

3   Revision history

Table 3-1 Document revision history

Date	Revision	Changes
April 13, 2023	Rev 1.0	Initial release.

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