

# **ProWriter User Manual**

Category	Content
Key word	ProWriter Instructions
Abstract	This paper introduces the application method of ProWriter which is the upper computer software of the programmer in SinoWealth.

Interpretation:

online	mean	The state of the programmer or Simulator device after being powered on and connected to the PC through a USB cable. At this time, the device name and firmware version information will be displayed on the ProWriter software UI.
offline	mean	The programmer or Simulator device is powered on but not online.



Revision history:

Version	Date	Modify content
V1.0	2020/04/09	First draft.
V2.0	2021/09/07	Add an introduction to SinoLink Pro.
V2.1	2022/06/30	Add an introduction to Pro06C. Add relevant instructions for the LED status indicator light during Pro06C/B/A writing.
V3.0	2023/11/22	Add an introduction to SinoLink Plus. Revised some descriptive information. Add nopf programming instance section. Add nopf creating instance section. Add FAQ section. Add specialized vocabulary definitions.
V3.1	2024/04/16	Correcting errors in the Pro06C interface1 pin diagram
V3.2	2024/10/18	Suitable for ProwriterV7



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### Chapter 1 **ProWriter Introduction**

### **1.1 General Description**

ProWriter is a programmer upper computer software suitable for MCU of Sinowealth, which can support online or offline programming of 8-bit and 32-bit chip realized by mass production programmer Pro06B, Pro06C as well as the online programming of simulators such as SinoLink, SinoLink Pro and SinoLink Plus. This article will introduce the installation and use of the software.

### **1.2 Operation Environment**

ProWriter could run on Win8 and above.

We recommend the usable capacity of memory is not smaller than 2G.

We recommend the usable capacity of Hard-disk is not smaller than 64G.

### **1.3 Programmer supported by ProWriter**

Prowriter is used to program MCU of Sinowealth, which should be done in combination with the hardware Programmer, such as Pro06B, Pro06C, SinoLink, SinoLink Pro and SinoLink Plus.

Tool	Target MCU	Support channels Number	Mass production offline programming
Pro06C	8/32 bit Flash	4	V
Pro06B	8/32 bit Flash	4	V
SinoLink Plus	8/32 bit Flash	1	V
SinoLink Pro	8/32 bit Flash	1	V
SinoLink	8/32 bit Flash	1	×

Table 1.3.a Comparison of functions of various programmers



### Chapter 2 Software Installation

### 2.1 Software Download and Installation

The latest version of ProWriter can get from the Sinowealth's official website (https://en.sinowealth.com/homes).

After downloading, simply install the program directly.

Pro Writer V5.40.7.9 - Ins	itall Wizard	×
Choose Destination Location Select folder where setup will in	istal files.	
	Setup will install Pro Writer in the following folder. To install to this folder,click Next.To install to a different folder,click Browser and select another fo	older.
	r Destination Folder C:\Program Files (x86)\SinoWealth\ProWriter Browser	
	< Back Next > Canc	el

Figure 2.1.a Default Installation Path

### 2.2 USB Driver Installation

SinoLink Plus and Pro06C do not require the installation of USB drivers in Win8 and above OS.

SinoLink, SinoLink Pro and Pro06B require the installation of corresponding USB drivers. The latest driver package is included in the ProWriter installation package, as shown in Figure 2.2.a. Users can choose the corresponding USB driver for installation based on their own PC OS.



Name	Date modified	Туре	Size		
Win7	10/11/2023 3:51 PM	File folder			
Win8_and_later	10/11/2023 3:51 PM	File folder			

Figure 2.2.a USB Driver Package

Now Taking the installation of the USB driver for SinoLink under the Win8-64 bit OS as an example to demonstrate the installation process.

Select the USB driver matches the OS.

→ This PC → OS (C:) → Program Fil	es (x86) > SinoWealth > ProWe	riter > USBDriver > W	in8_and_later >
Name	Date modified	Туре	Size
amd64	10/11/2023 3:51 PM	File folder	
<mark></mark> x86	10/11/2023 3:51 PM	File folder	
📓 sinousb.inf	9/23/2021 9:45 AM	Setup Information	27 KB
🤿 sinousb_amd64.cat	9/23/2021 9:45 AM	Security Catalog	14 KB
sinousb_x86.cat	9/23/2021 9:45 AM	Security Catalog	14 KB
≫ USB_Install_amd64.exe	9/23/2021 9:45 AM	Application	1,026 KB
💐 USB_Install_x86.exe	9/23/2021 9:45 AM	Application	901 KB

Figure 2.2.b USB driver list for Win8

Execute the USB driver installer.

After the USB driver is installed, when the programmer is connected to the PC via USB, the device name will be displayed at the appropriate location in the device manager.



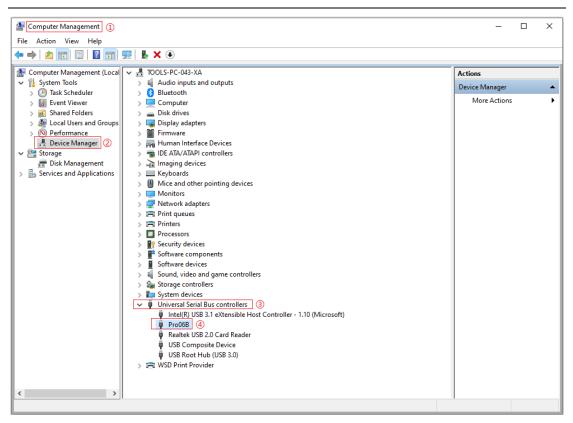


Figure 2.2.c Display after Pro06B is connected after USB driver installation



### Chapter 3 Introduction of Programmers

ProWriter can cooperate with multiple programmers to complete the programming work. In this chapter we will provide a detailed description of the programmers it supports.

### 3.1 Pro06C programmer Introduction

### 3.1.1 Circuit Structure Introduction

Pro06C can support mass production programming of Sinowealth's entire series of 8bit/32bit MCU, and can support up to 4 channels of simultaneous programming. When performing a programming operation, it is often used in conjunction with the customer's chip programming adapter board, and the circuit connection is shown in Figure 3.1.1.a.

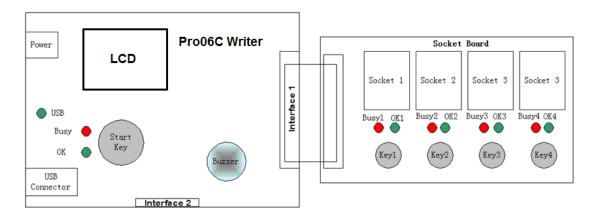


Figure 3.1.1.a Program Circuit Diagram for Pro06C

#### Power

Connect to DC regulator power supply (+12~15V).

#### LCD

Display chip name, code checksum, socket selection information, programming mode configuration information, pass / fail times, USB connection status, working status and programming interface type information.

#### USB Indicator Light

This indicator light shows the USB connection status. The light on indicates



the connection is normal, and the light off indicates the connection is disconnected.

#### Start Key

The main button for controlling the start of programming. Effective in online mass production mode or offline waiting button mode. When this button is pressed, it can start the programming operation of all selected channels.

#### Socket 1~4

There are 4 program slots.

#### Key 1~4

Key1 has the same function as the Start Key, while Key2~4 controls the corresponding channel respectively.

#### ■ Interface1/2

The pins used for programming or indicating the status during programming. There are four channels to choose.

			-
1	VDD1	TCK1/SWCLK1	2
	GREEN1	TDI1	
	RED1	TMS1	
	KEY1	TD01/SWE1/SWDI01	
	GND	GND1	
	VDD2	TCK2/SWCLK2	
	GREEN2	TDI2	
	RED2	TMS2	
	KEY2	TD02/SWE2/SWDI02	
	GND	GND2	
	VDD3	TCK3/SWCLK3	
	GREEN3	TDI3	
	RED3	TMS3	
	KEY3	TD03/SWE3/SWDI03	
	GND	GND3	
	VDD4	TCK4/SWCLK4	
	GREEN4	TDI4	
	RED4	TMS4	
	KEY4	TD04/SWE4/SWDI04	
39	GND	GND4	40

Figure 3.1.1.b Interface 1 of Pro06C

1	GRN1	RED1	2
	KEY1	RST1	
	GRN2	RED2	
	KEY2	RST2	
	GRN3	RED3	
	KEY3	RST3	
	GRN4	RED4	
	KEY4	RST4	
	NC	NC	
	NC	NC	
	OK	Busy	
	START	NC	
25	VDD	GND	26

Figure 3.1.1.c Interface 2 of Pro06C

Table 3.1.1.a Pro	ogramming In	nterface (For	example, Socket 1)
	- B- M		enampre, 0000100 - j

Chip Type	Interface Type	Programming Pins
ARM	SWD	VDD1 SWCLK1 SWDIO1 GND1
Andes	AICE	VDD1 TCK1 TDO1 GND1
8051	JTAG	VDD1 TCK1 TDI1 TMS1 TDO1 GND1
8031	SWE	VDD1 SWE1 GND1



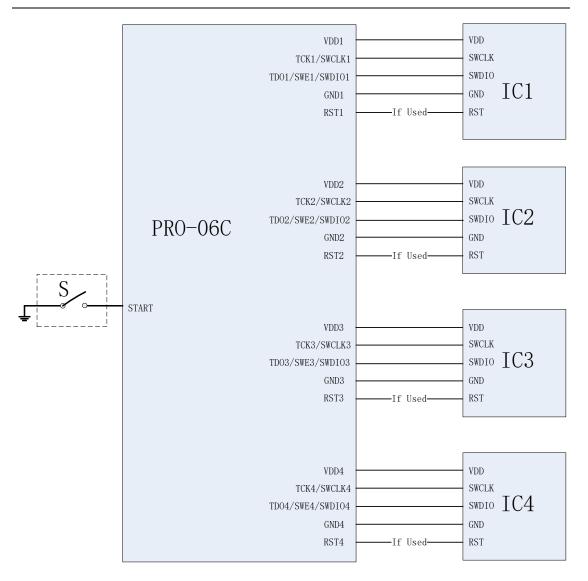


Figure 3.1.1.d SWD Interface of Arm Core



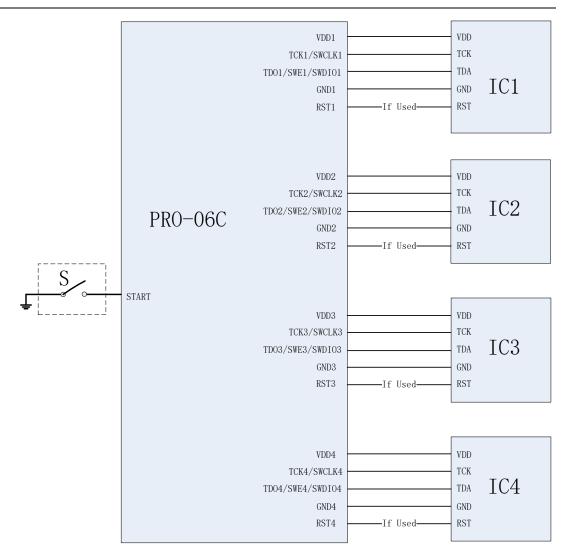


Figure 3.1.1.e AICE Interface of Andes Core



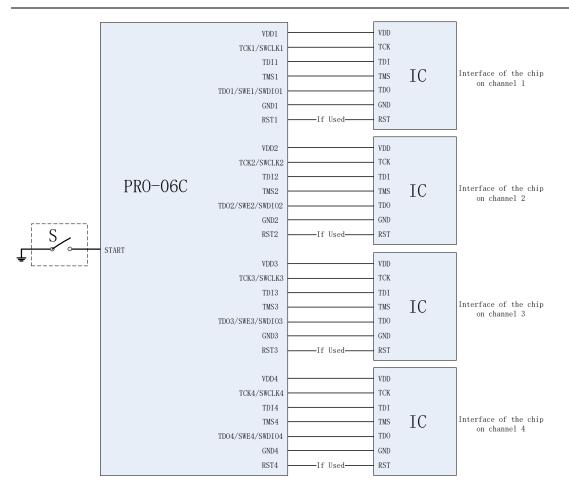


Figure 3.1.1.f JTAG Interface of 8051 Core



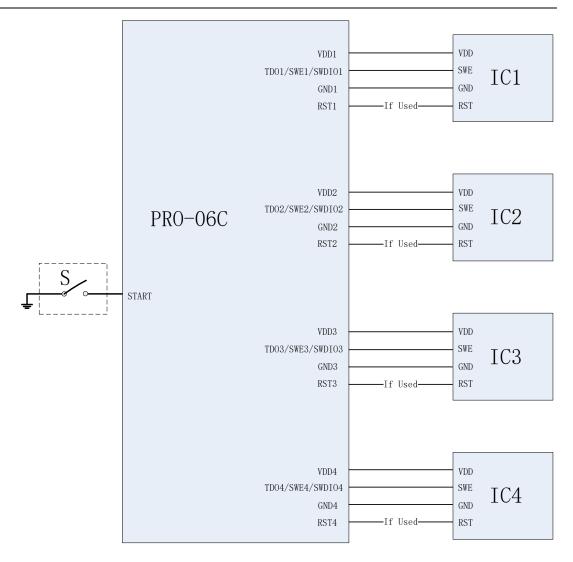


Figure 3.1.1.f SWE Interface of 8051 Core

#### Note:

1. GREENn in interface 1 and GRNn in interface 2 are the same signal, i.e. green LEDn. Used to indicate the OK signal of channel n, which lights up during high level voltage.

2. REDn in interface 1 and REDn in interface 2 are the same signal, i.e. red LEDn. Used to indicate the Busy signal of channel n, which lights up during high level voltage.

3. The number n (1-4) after the interface pin represents the corresponding Socket (channel), with a total of 4 channels.

4. When using the "Connect with ResetPin" function, it is necessary to connect the ResetPin of the chip to the corresponding RSTn in interface 2.



5. The START signal in interface 2 is the Start Key driver pin (input) of the Pro06C device, which is led out for customer convenience, such as connecting to their automated burning platform. Connecting this signal to GND is equivalent to pressing the Start Key.

6. The OK signal in interface 2 is the green LED driver pin (output) of the Pro06C device, which is led out for customer convenience, such as connecting to their automated burning platform. When this pin outputs a high-level voltage, the green LED of the Pro06C device will light up. This signal is used to indicate the total OK signal of the 4 channels, which means that the signal is only valid when the OK signals of all 4 channels are valid.

7. The Busy signal in interface 2 is the red LED driver pin (output) of the ProO6C device, which is led out for customer convenience, such as connecting to their automated burning platform. When this pin outputs a high-level voltage, the red LED of the ProO6C device will light up. This signal is used to indicate the total Busy signal of the 4 channels, which means that as long as one channel's Busy signal is valid, this signal is valid.

8. The VDD signal in interface 2 has a fixed level voltage of approximately 3.3V relative to GND.

### 3.1.2 Onboard programming

The Pro06C supports on-board programming, which means the user can first weld the chip to the user circuit board and then program the chip. It should be noted that when programming the chip Onboard, each programming line must be separated from the user's circuit.

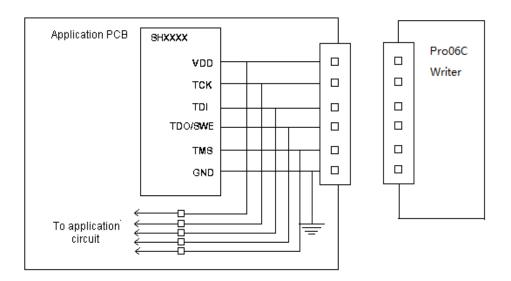


Figure 3.1.2.a Schematic Diagram of On-board Programming



### 3.1.3 Offline working status

Offline programming steps:

- step1: Install ProWriter.
- *step2:* Configure and download the offline programming project in the online working state.
- *step3:* Disconnect the USB and restart the power to enter the offline programming mode.
- *step4:* Insert the target MCU into the chip slot on the chip adapter board or connect the MCU program pin to the Pro06C program interface.
- *step5:* Perform offline programming operation according to the "Wait for key press" or "Auto Detect" option checked during Step2.
- step6: Remove the MCU that has been programmed.
- step7: Return to Step4 to perform the next target MCU programming.

#### Note:

- The ProO6C has the function of offline programming, which can support one drag four programming at most.
- After the ProO6C is powered on, it can perform self-test. If the self-test fails, LCD will prompt error. At this time, offline programming cannot be performed. You can only download parameters online again and then perform offline programming. If the self-test passes, the LCD will display the name of the MCU to be programmed, the code checksum, socket selection information, programming mode configuration information, pass / fail times, USB connection status and programming interface type information.
- Red LED and green LED are used to indicate the programming status. If the red LED is on and the green LED is off, it indicates that programming is in progress. If the red LED is off and the green LED is on, it indicates the programming has been successfully completed. If both the red LED and green LED flash simultaneously, it indicates that an error occurred during the programming process. When the chip on a certain channel is removed, both the green LED and red LED corresponding to that channel will be off, indicating that it is waiting for the next programming operation.
- The buzzer is used to alert the programming status. In the manual programming mode, when the programming is successful, the buzzer will give a short low tone, and when



the programming fails, the buzzer will give three short high tones. In case of any channel programming error, the buzzer will give an alarm.

### 3.1.4 The programmer LED display

#### 1) LCD display

When the ProO6C is powered on, if the target project has been downloaded to the programmer correctly, the LCD will display the name of the target MCU, the code checksum, socket selection information, Programming mode configuration information, pass / fail times, USB connection status and programming interface type information, otherwise an error will be prompted.

During the Programming process, the LCD will display the currently executing operation items for each selected channel, and the corresponding Programming results will also be displayed after the operation is completed.

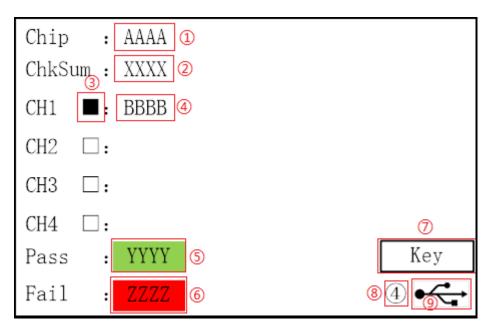


Figure 3.1.4.a Schematic diagram of Pro06C LCD display content

- ①The chip name is displayed here.
- ②The code checksum is displayed here.
- ③The hollow box "□" represents that the corresponding channel is not selected; The black solid box "■" indicates that the corresponding channel has been selected; The green solid box "■" represents the successful operation performed on the corresponding channel; The red solid box "■" indicates that



the operation performed on the corresponding channel has failed.

- ④ Display the currently executing operation or the results of the operation execution.
- ⑤Display the cumulative number of successful programming attempts, which will only be counted if 'Program' is checked. And once the 'Download' operation is executed again, the count will be reset to zero.
- ⑦Display offline programming configuration information:

Key represents "Wait for key press ", which means whether to start burning is controlled by whether the key is pressed or not. Auto represents "Auto Detect", which means whether to start programming is determined by whether the programmer has (automatically) detected that a chip has been placed OK.

④represents four-wire mode (JTAG), ①represents single-wire mode (SWE), and ②represents two-wire mode (SWD or AICE).

• (9) Display the communication status of the USB port. Highlighting indicates that the USB cable is connected, while weak highlighting indicates that the USB cable is not connected.

#### 2) LED indicator lights on Pro06C

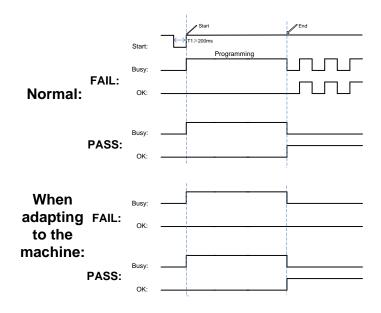
There are two LED indicators for programming status on the Pro06C device: red LED and green LED. Their silk screen markings are Busy and OK respectively, and the corresponding control interfaces (drivers) are Busy pin and OK pin of Interface2.Both of them are lighted by high level voltage.

Red LED	Green LED	State
Off	Off	Waiting for
On	Off	Programming
Off	On	Program success
flashing	flashing	Program Error

3) LED indicator lights on each programming channel



The LED indicators on each programming channel need to be integrated by the user on their chip programming adapter board. Like the LED indicator lights on the ProO6C, there are two LED indicator lights, namely red LED and green LED, which are lit at a high level, And the definition of indicator light status is also consistent. The only difference is that its control interface (driver) is REDn and GREENn in Interface1, then REDn and GRNn in Interface2.



#### 4) Time sequence diagram of Busy and OK light during program

Figure 3.1.4.b Time sequence diagram of Busy and OK light during programming



### 3.2 **Pro06B programmer Introduction**

### 3.2.1 Circuit Structure Introduction

Pro06B can support mass production programming of Sinowealth's entire series of 8bit/32bit MCU, and can support up to 4 channels of simultaneous programming. When performing a programming operation, it is often used in conjunction with the customer's chip programming adapter board, and the circuit connection is shown in Figure 3.2.1.a.

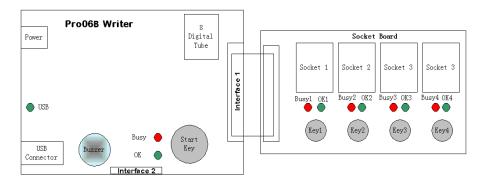


Figure 3.2.1.a Program Circuit Diagram for Pro06B

#### Power

Connect to DC regulator power supply (+15V).

#### 8-Digital Tube

Display chip name, working status (error type coding), code checksum, data checksum and other information.

#### USB Indicator Light

This indicator light shows the USB connection status. The light on indicates the connection is normal, and the light off indicates the connection is disconnected.

Start Key

The main button for controlling the start of programming. Effective in online mass production mode or offline waiting button mode. When this button is pressed, it can start the programming operation of all selected channels.

#### Socket 1~4

There are 4 program slots.

Key 1~4

Key1 has the same function as the Start Key, while Key2~4 controls the corresponding channel respectively.



#### Interface1/2

The pins used for programming or indicating the status during programming. There are four channels to choose.

VDD1	,	
VDD1	TCK1/SWCLK1	2
Green1	TDI1	
Red1	TMS1	
Key1/TDA1	TD01/SWE1/SWDI01	
GND	GND1	
VDD2	TCK2/SWCLK2	
Green2	TDI2	
Red2	TMS2	
Key2/TDA2	TD02/SWE2/SWDI02	
GND	GND2	
VDD3	TCK3/SWCLK3	
Green3	TDI3	
Red3	TMS3	
Key3/TDA3	TD03/SWE3/SWDI03	
GND	GND3	
VDD4	TCK4/SWCLK4	
Green4	TDI4	
Red4	TMS4	
Key4/TDA4	TD04/SWE4/SWDI04	
GND	GND4	40
	Red1 Key1/TDA1 GND VDD2 Green2 Red2 Key2/TDA2 GND VDD3 Green3 Red3 Key3/TDA3 GND VDD4 Green4 Red4 Red4 Key4/TDA4	Red1TMS1Key1/TDA1TD01/SWE1/SWDI01GNDGND1VDD2TCK2/SWCLK2Green2TD12Red2TMS2Key2/TDA2TD02/SWE2/SWDI02GNDGND2VDD3TCK3/SWCLK3Green3TD13Red3TMS3Key3/TDA3TD03/SWE3/SWDI03GNDGND3VDD4TCK4/SWCLK4Green4TD14Red4TMS4Key4/TDA4TD04/SWE4/SWDI04

1	GREEN1	RED1	2
	KEY1	RESET1	
	GREEN2	RED2	
	KEY2	RESET2	
	GREEN3	RED3	
	KEY3	RESET3	
	GREEN4	RED4	
	KEY4	RESET4	
17	VDD	GND	18

Figure 3.2.1.b Interface 1 of Pro06B

Figure 3.2.1.c Interface 2 of Pro06B

Table 3.2.1.a Programming Interface (For example, Socket 1)

Chip Type	Interface Type	Programming Pins
ARM	SWD	VDD1 SWCLK1 SWDIO1 GND1
Andes	AICE	VDD1 TCK1 TDA1 GND1
8051	JTAG	VDD1 TCK1 TDI1 TMS1 TDO1 GND1
0001	SWE	VDD1 SWE1 GND1

#### Note:

- 1. 'Green1' means channel 1 'OK' signal
- 2. 'Red1' means channel 1 'Busy' signal
- 3. The Numbers 1 to 4 represent each channel.
- 4. When using the reset mode, please connect the Resetn interface of the corresponding



channel.

### 3.2.2 Onboard programming

The Pro06B supports on-board programming, which means the user can first weld the chip to the user circuit board and then program the chip. It should be noted that when programming the chip Onboard, each programming line must be separated from the user's circuit. As shown in figure 3.2.2.a.

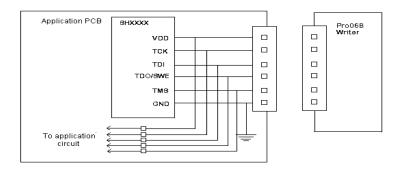


Figure 3.2.2.a Schematic Diagram of On-board Programming

### 3.2.3 Offline working status

Offline programming steps:

- *step1:* Install ProWriter.
- *step2:* Configure and download the offline programming project in the online working state.
- *step3:* Disconnect the USB and restart the power to enter the offline programming mode.
- *step4:* Insert the target MCU into the chip slot on the chip adapter board or connect the MCU program pin to the Pro06B program interface.
- *step5:* Perform offline programming operation according to the "Wait for key press" or "Auto Detect" option checked during Step2.
- *step6:* Remove the MCU that has been programmed.
- step7: Return to Step4 to perform the next target MCU programming.

Note:



- The Pro06B has the function of offline programming, which can support one drag four programming at most.
- After the Pro06B is powered on, it can perform self-test. If the self-test fails, the Digital tube will display "EF." indicating an error. At this time, offline programming cannot be performed. You can only download parameters online again and then perform offline programming. If the self-test passes, the Digital tube will display the name of the IC device to be programmed, the checksum of programming code.
- Red LED and green LED are used to indicate the programming status. If the red LED is on and the green LED is off, it indicates that programming is in progress. If the red LED is off and the green LED is on, it indicates the programming has been successfully completed. If both the red LED and green LED flash simultaneously, it indicates that an error occurred during the programming process. When the chip on a certain channel is removed, both the green LED and red LED corresponding to that channel will be off, indicating that it is waiting for the next programming operation.
- The buzzer is used to alert the programming status. In the manual programming mode, when the programming is successful, the buzzer will give a short low tone, and when the programming fails, the buzzer will give three short high tones. In case of any channel programming error, the buzzer will give an alarm.

### 3.2.4 The programmer LED display

#### 1) Digital tube display

When the Pro06B is powered on, if the target project has been downloaded to the programmer correctly, the digital tube will display the model of the target MCU, otherwise "EF." will be displayed to prompt the user to download the target project first.

Character	Meaning
Eb	Blank Check Error
EP	Program Error
EU	Verify Error
EE	Part Number Error
Eo	Program Limit
EC	No Detect IC
EL	Lot ID Error
EF	Flash Parameter Error
ES	Security Error

#### Table 3.2.4.a Pro06B LED display character definition



En	Enter Mode Error
E-00	Erase Error
E-02	Option Error
E-03	Security Code Error
E-04	Customer ID Error
E-05	Serial Number Error
E-06	E2PROM Error
E-07	Boot Error
E-08	OTP ID Error

#### 2) LED indicator lights on Pro06B

Table 3.2.4.b Pro06B LED indicator state definition

Red LED	Green LED	State
Off	Off	Waiting for
On	Off	Programming
Off	On	Program success
flashing	flashing	Program Error

#### 3) LED indicator lights on each programming channel

The LED indicators on each programming channel need to be integrated by the user on their chip programming adapter board. Like the LED indicator lights on the ProO6C, there are two LED indicator lights, namely red LED and green LED, which are lit at a high level, And the definition of indicator light status is also consistent. The only difference is that its control interface (driver) is Redn and Greenn in Interface1, then REDn and GREENn in Interface2.

#### 4) Time sequence diagram of Busy and OK light during programming

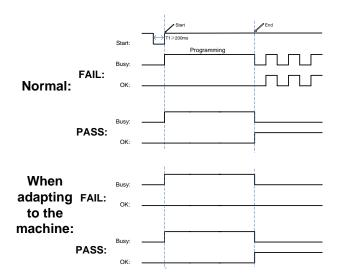


Figure 3.2.4.a Time sequence diagram of Busy and OK light during programming

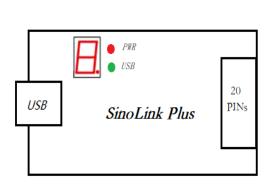


### 3.3 SinoLink Plus Introduction

### **3.3.1 Introduction to Features**

SinoLink Plus has the following characteristics:

- 1) Support the programming and debugging for all of the 8-bit or 32-bit flash MCUs of SinoWealth.
- 2) Supports two types of programming voltages: 3.3V and 5V.
- 3) Powered by USB.
- 4) No need to install USB driver under Window8 and above.



			-
1	VDD	3. 3V	2
	NC	RXD	
	TDI	TXD	
	TMS/SWDI0	GND	
	TCK/SWCLK	SWE	
	NC	KEY	
	TDO	NC	
	RST	NC	
	LED_GREEN	NC	
19	LED_RED	GND	20



Figure 3.5.1.b Interface of SinoLink Plus

When the USB is connected, the red light will be on first, and then the green light will be on, which means the USB connection is successful.

The digital tube displays "1", indicating that the current operation is in single-wire (SWE) mode. The digital tube displays "2", indicating that the current operation is in two-wire (SWD) mode, which is used to program for ARM core chip. The digital tube display "4" indicates that the current operation is in four-wire (JTAG) mode.

#### 8-Digital Tube

Display chip name, working status (error type coding), code checksum, program interface mode and other information.

#### Start Key

The master button controls the starting of the program, used when programming offline. Press this button to start programming all channels.



#### Table 3.5.1.a Programming Interface

Chip Type	Interface Type	Programming Pins
ARM	SWD	VDD SWCLK SWDIO GND
Andes	AICE	VDD TCK TMS GND
8051	JTAG	VDD TCK TDI TMS TDO GND
8051	SWE	VDD SWE GND

### 3.3.2 Programming interface conversion board

The 20 pin programming interface on the Sinolink Plus board is compatible with the standard 20 pin JTAG programming interface.

In order to be compatible with early programming interfaces, this programming interface conversion board was specially made.

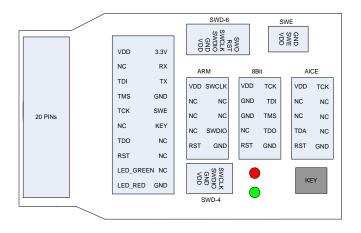


Figure 3.5.2.a Programming interface conversion board of SinoLink Plus



	Schematic diagram of electrical characteristics association of Programming interface conversion board					
20Pin	ARM	8 Bit	AICE	SWD-6	SWD-4	SWE
VDD	VDD	VDD	VDD	VDD	VDD	VDD
NC						
TDI		TDI				
TMS	SWDIO	TMS	TDA	SWDIO	SWDIO	
TCK	SWCLK	TCK	ТСК	SWCLK	SWCLK	
NC						
TDO		TDO		SWO		
RST	RST	RST	RST	RST		
LEDG						
LEDR						
3.3V						
RX						
TX						
GND						
SWE						SWE
KEY						
NC						
NC						
NC						
GND	GND	GND	GND	GND	GND	GND

Figure 3.5.2.b Schematic diagram of electrical characteristics association of Programming interface conversion board

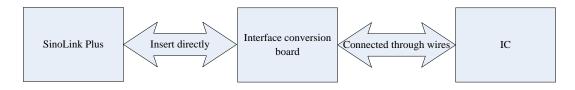


Figure 3.5.2.c Schematic diagram of interface conversion board wiring method

### 3.3.3 Offline working status

Offline programming steps:

- *step1:* Install ProWriter.
- *step2:* Configure and download the offline programming project in the online working state.



- *step3:* Disconnect the USB and restart the power to enter the offline programming mode.
- *step4:* Connecting the SinoLink Plus adapter board.
- *step5:* Insert the target MCU into the chip slot on the chip adapter board or connect the MCU program pin to the SinoLink Plus adapter board 'S program interface.
- *step6:* Press the key on the SinoLink Plus adapter board to start programming.
- step7: Remove the MCU that has been programmed.
- *step8:* Return to Step5 to perform the next target MCU programming.

#### Note:

- The SinoLink Plus has offline programming function.
- After the SinoLink Plus is powered on, it can perform self-test. If the self-test fails, the Digital tube will display "EF." indicating an error. At this time, offline programming cannot be performed. You can only download parameters online again and then perform offline programming. If the self-test passes, the Digital tube will display the name of the IC device to be programmed, the checksum of programming code and program interface type.
- Red LED and green LED are used to indicate the programming status. If the red LED is on and the green LED is off, it indicates that programming is in progress. If the red LED is off and the green LED is on, it indicates the programming has been successfully completed. If both the red LED and green LED flash simultaneously, it indicates that an error occurred during the programming process. When the chip on a certain channel is removed, both the green LED and red LED corresponding to that channel will be off, indicating that it is waiting for the next programming operation.

### **3.3.4** The programmer LED display

#### 1) Digital tube display

When the SinoLink Plus is powered on, if the target project has been downloaded to the programmer correctly, the digital tube will display the model of the target MCU, otherwise "EF." will be displayed to prompt the user to download the target project first.

The meaning of various characters displaying in the digital tube during the programming operation are shown in the following table:



#### Table 3.5.4.a SinoLink Plus display character definition

Character	Meaning	
Eb	Blank Check Error	
EP	Program Error	
EU	Verify Error	
EE	Part Number Error	
Eo	Program Limit	
EC	No Detect IC	
EL	Lot ID Error	
EF	Flash Parameter Error	
ES	Security Error	
En	Enter Mode Error	
E-00	Erase Error	
E-02	Option Error	
E-03	Security Code Error	
E-04	Customer ID Error	
E-05	Serial Number Error	
E-06	E2PROM Error	
E-07	Boot Error	
E-08	OTP ID Error	

#### 2) LED indicator light (on the programmer)

Table 3.5.4.b SinoLink Plus LED indicator state definition

Red LED	Green LED	State
Off	Off	Waiting for
On	Off	Programming
Off	On	Program success
flashing	flashing	Program Error

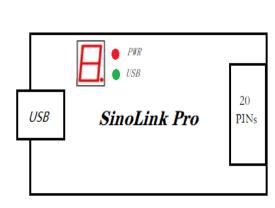


### 3.4 SinoLink Pro Introduction

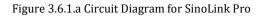
### **3.4.1 Introduction to Features**

SinoLink Pro has the following characteristics:

- 1) Support the programming and debugging for all of the 8-bit or 32-bit flash MCUs of SinoWealth.
- 2) Supports two types of programming voltages: 3.3V and 5V.
- 3) Powered by USB.
- 4) Automatically install USB drive when connected to the network.



1	VDD	3. 3V	2
	NC	RXD	
	TDI	TXD	
	TMS/SWDI0	GND	
	TCK/SWCLK	SWE	
	NC	KEY	
	TDO	NC	
	RST	NC	
	LED_GREEN	NC	
19	LED_RED	GND	20



```
Figure 3.6.1.b Interface of SinoLink Pro
```

When the USB is connected, the red light will be on first, and then the green light will be on, which means the USB connection is successful.

The digital tube displays "1", indicating that the current operation is in single-wire (SWE) mode. The digital tube displays "2", indicating that the current operation is in two-wire (SWD) mode, which is used to program for ARM core chip. The digital tube display "4" indicates that the current operation is in four-wire (JTAG) mode.

#### 8-Digital Tube

Display chip name, working status (error type coding), code checksum, program interface mode and other information.

#### Start Key

The master button controls the starting of the program, used when programming offline. Press this button to start programming all channels.



#### Table 3.6.1.a Programming Interface

Chip Type	Interface Type	Programming Pins
ARM	SWD	VDD SWCLK SWDIO GND
Andes	AICE	VDD TCK TMS GND
8051	JTAG	VDD TCK TDI TMS TDO GND
8051	SWE	VDD SWE GND

### 3.4.2 Programming interface conversion board

The 20 pin programming interface on the Sinolink Plus board is compatible with the standard 20 pin JTAG programming interface.

In order to be compatible with early programming interfaces, this programming interface conversion board was specially made.

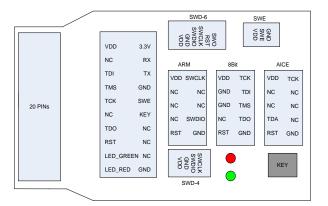


Figure 3.6.2.a Programming interface conversion board of SinoLink Pro



	Schematic diagram of electrical characteristics association of Programming interface conversion board					
20Pin	ARM	8 Bit	AICE	SWD-6	SWD-4	SWE
VDD	VDD	VDD	VDD	VDD	VDD	VDD
NC						
TDI		TDI				
TMS	SWDIO	TMS	TDA	SWDIO	SWDIO	
TCK	SWCLK	TCK	TCK	SWCLK	SWCLK	
NC						
TDO		TDO		SWO		
RST	RST	RST	RST	RST		
LEDG						
LEDR						
3.3V						
RX						
TX						
GND						
SWE						SWE
KEY						
NC						
NC						
NC						
GND	GND	GND	GND	GND	GND	GND

Figure 3.6.2.b Schematic diagram of electrical characteristics association of Programming interface conversion board

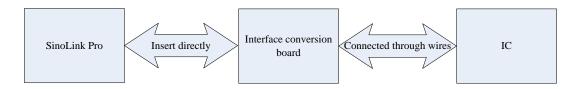


Figure 3.6.2.c Schematic diagram of interface conversion board wiring method

### 3.4.3 Offline working status

Offline programming steps:

- step1: Install ProWriter.
- step2: Configure and download the offline programming project in the online



working state.

- *step3:* Disconnect the USB and restart the power to enter the offline programming mode.
- *step4:* Connecting the SinoLink Pro adapter board.
- *step5:* Insert the target MCU into the chip slot on the chip adapter board or connect the MCU program pin to the programming interface of SinoLink Pro adapter board.
- *step6:* Press the key on the SinoLink Pro adapter board to start programming.
- step7: Remove the MCU that has been programmed.
- *step8:* Return to Step5 to perform the next target MCU programming.

#### Note:

- The SinoLink Pro has offline programming function.
- After the SinoLink Pro is powered on, it can perform self-test. If the self-test fails, the Digital tube will display "EF." indicating an error. At this time, offline programming cannot be performed. You can only download parameters online again and then perform offline programming. If the self-test passes, the Digital tube will display the name of the IC device to be programmed, the checksum of programming code and program interface type.
- Red LED and green LED are used to indicate the programming status. If the red LED is on and the green LED is off, it indicates that programming is in progress. If the red LED is off and the green LED is on, it indicates the programming has been successfully completed. If both the red LED and green LED flash simultaneously, it indicates that an error occurred during the programming process. When the chip on a certain channel is removed, both the green LED and red LED corresponding to that channel will be off, indicating that it is waiting for the next programming operation.

### 3.4.4 The programmer LED display

#### 1) Digital tube display

When the SinoLink Pro is powered on, if the target project has been downloaded to the programmer correctly, the digital tube will display the model of the target MCU, otherwise "EF." will be displayed to prompt the user to download the target project first.

The meaning of various characters displaying in the digital tube during the



programming operation are shown in the following table:

Table 3.6.4.a SinoLink Pro display character definition

Character	Meaning	
Eb	Blank Check Error	
EP	Program Error	
EU	Verify Error	
EE	Part Number Error	
Eo	Program Limit	
EC	No Detect IC	
EL	Lot ID Error	
EF	Flash Parameter Error	
ES	Security Error	
En	Enter Mode Error	
E-00	Erase Error	
E-02	Option Error	
E-03	Security Code Error	
E-04	Customer ID Error	
E-05	Serial Number Error	
E-06	E2PROM Error	
E-07	Boot Error	
E-08	OTP ID Error	

#### 2) LED indicator lights on SinoLink Pro

Table 3.6.4.b SinoLink Pro LED indicator state definition

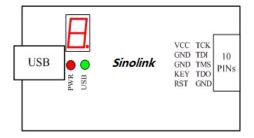
Red LED	Green LED	State
Off	Off	Waiting for
On	Off	Programming
Off	On	Program success
flashing	flashing	Program Error



### 3.5 SinoLink Introduction

SinoLink has the following characteristics:

- 1) Support the programming and debugging for all of the 8-bit or 32-bit flash MCUs of SinoWealth.
- 2) Supports two types of programming voltages: 3.3V and 5V.
- 3) Powered by USB.
- 4) Automatically install USB drive when connected to the network.



1	VDD	TCK/SWCLK	2
	GND	TDI	
	GND	TMS	
	KEY/TDA	TDO/SWE/SWDIO	
9	RST	GND	10

Figure 3.7.a Circuit Diagram for SinoLink

Figure 3.7.b Interface of SinoLink

When the USB is connected, the red light will be on first, and then the green light will be on, which means the USB connection is successful.

The digital tube displays "1", indicating that the current operation is in single-wire (SWE) mode. The digital tube displays "2", indicating that the current operation is in two-wire (SWD) mode, which is used to program for ARM core chip. The digital tube display "4" indicates that the current operation is in four-wire (JTAG) mode.

Chip Type	Interface Type	Programming Pins
ARM	SWD	VDD SWCLK SWDIO GND
Andes	AICE	VDD TCK TDA GND
<b>80E1</b>	JTAG	VDD TCK TDI TMS TDO GND
8051	SWE	VDD SWE GND



## Chapter 4 Software UI introduction

After running the programmer software ProWriter, the user interface shown in Figure 4.0.a will appear.

lode Language	Operation Help (1)					Sino Wealth
Blank	Read	Verify (2)	Auto	Downlos	ad (8) Ew	Upgrade FW
Load Project     (3)     Save Project     Code     (4)     Data		<ul> <li>8 (5)</li> <li>00</li> <li>00</li> <li>Auto Detect</li> </ul>	Option Name           OP_RST:           OP_WMT:           OP_SCMEN:           OP_OSCRFB:           OP_LVREN:           OP_LVRLE:           OP_SCM:           OP_P37-P34:           OP_P33-P30:	Value P5.2 used as RST pin Iongest warm up time Enable SCM 150K Disable LVR function 4.1V LVR Level 1 SCM is invalid in warr Port3[7:4] sink ability in Port3[3:0] sink ability in	n up period normal mode	>
	Chip Options	ontrol Option	ustomize	Pas	ss/Fail/Limit: 1/0/0	
•	26:00] Auto detectd devi 26:00] Switch to: Pro060			Socket 1	0%	-0
	(6)			Socket 2	0% 7) 0%	

Figure 4.0.a ProWriter main UI

We present the introduction in turn according to the Numbers in the figure.



## 4.1 Main menu bar

	rammer - Advance Mode			– 🗆 X
Mode Language	Operation Help (1)			Sino Wealth
Blank	Read Verify	Auto	Download	Upgrade FW
Load Project     Save Project     Code     Code     Data	Chip select         SH79F328           Code Option         :80000000 C0600000           Code Checksum         :01A0-0000           CRC16-CCITT         :70F8           CRC8-MAXIM         :00           Data Checksum         :0000           IC Version Mark         :0000           Writer:         Pro06C         Auto Detect           FW Version:V2.20 [2024-08-21 10:36:42]         FW Version:V2.20 [2024-08-21 10:36:42]	Option Name           OP_RST:           OP_WMT:           OP_SCMEN:           OP_CSCRFB:           OP_LVREN:           OP_SCM:           OP_P37-P34:           OP_P33-P30:	Value P5.2 used as RST pin longest warm up time Enable SCM 150K Disable LVR function 4.1V LVR Level 1 SCM is invalid in warm up period Port3[7:4] sink ability normal mode Port3[3:0] sink ability normal mode	
	Chip Options Control Option	ustomize	Pass/Fail/Limit:	1/0/0
Program Report				-
[2024-11-11 14:2	26:00] Auto detectd devices: Pro06C		Socket 1 0%	$\bigcirc$
[2024-11-11 14:2	26:00] Switch to: Pro06C		Socket 2 0%	
			Socket 3 0%	-0
<			Socket 4 0%	

Figure 4.1.a Main menu column

### Mode

It can be configured as advance mode and mass production mode, and the default mode is advance mode. The mass production mode UI is shown in Figure 4.1.b.



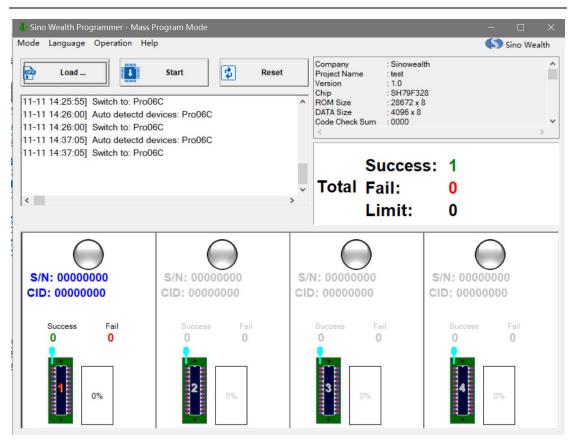


Figure 4.1.b Mass program mode

### Language

It supports both Chinese and English, can be switched in real time, default is Chinese. The main UI of Chinese mode is shown in figure 4.1.c.



🖡 中颖编程器V7 - 高	高级模式					- 🗆 X
模式 语言 操作	<del>帮助</del> (1)					岆 中颖电子
☑ 查空	1 读取	★ 校验 <sup>(2)</sup>	) 🐺 自动	🔡 下载	参数	[11] <sup>(8)</sup> 升级固件
評加載工程         (3)         保存工程         (3)         (4)         (4)         (4)         (4)         (5)         (4)         (5)         (6)         (7)         <		(5) 00 00 ~ 自动侦测	代码选项 OP_RST: OP_WMT: OP_SCMEN: OP_CVREN: OP_LVREN: OP_LVREN: OP_S3-P34: OP_P33-P30: <	送顶值 P5.2 used as RST longest warm up ti Enable SCM 150K Disable LVR function 4.1V LVR Level 1 SCM is invalid in w Port3(7:4) sink abili Port3(3:0) sink abili	on arm up period ity normal mode	×
	🚺 芯片选项 🔜 控制	选项 💽 客户信息		J	或功/失败/限次: 0/	0/0
	21:53] 自动检测到设备 21:53] 切换到设备: Pro (6)			★ 括槽1	0% 0% (7) 0%	

Figure 4.1.c Chinese main UI

### Operation

Including update software version and register manage.

- Help
  - Help: Open the user manual of ProWriter.
  - About: Display the information of current software version.



SinoWealth Program	nmer - Advance Mo	de			_	$\Box$ $\times$
Mode Language Op	peration Help				<b></b>	🕽 Sino Wealth
Blank	<b>1</b> Read	Verify	Auto	Downl	load	Upgrade FW
Project C	hip select	SH79F328	Option Name	Value		^
	Code Che	th Writer Version 7.00.1		DE 2 used on DET n	×	
CODE Code	CRC8-MAI 🚽	SinoWealth Writer Versi Sino Wealth Copyright(C		OK		
Dete Data	C Version	Build Date: 2024/9/2 PC ID: 58568	Code:277		ip period mal mode	
	Vriter: FW Vers	Feedback on software us softwar	age issues: e_services@sinowealt	th. com	mal mode	>
	Chip C ProWrite HWAgent. WDev Pro	06C.dll Version	1.2 Build Date: 1.0 Build Date:	2024/9/2 2024/9/2	Fail/Limit: 1/0/0	
Program Report [2024-11-11 14:26:		ash.dll Version	1.2 Build Date:	2024/9/2	0%	$\bigcirc$
[2024-11-11 14:26: [2024-11-11 14:37: [2024-11-11 14:37:	05] Auto			>	0%	$\widetilde{\mathbf{O}}$
2024 11 11 14.07.						$-\bigcirc$
				Socket 3	0%	$-\bigcirc$
<				Socket 4	0%	-

Figure 4.1.d Help and about display UI



## 4.2 Common operation buttons

	rammer - Advance Mod Operation Help	e				− □ Sino Wealth
Blank	Read	Verify	Auto <sup>(2</sup>	2) Downlo	ad	Upgrade FW
Load Project     Save Project     Code     Data	Code Checksum       :         CRC16-CCITT       :         CRC8-MAXIM       :         Data Checksum       :	SH79F328 80000000 C0600000 11A0-0000 70F8 00 0000 0000 V Auto Detect 024-08-21 10:36:42]	Option Name           OP_RST:           OP_WMT:           OP_SCMEN:           OP_LVREN:           OP_LVREN:           OP_SCM:           OP_P37-P34:           OP_P33-P30:	Value P5.2 used as RST pin longest warm up time Enable SCM 150K Disable LVR function 4.1V LVR Level 1 SCM is invalid in warr Port3[7:4] sink ability Port3[3:0] sink ability	e m up period normal mode	>
Program Report	Chip Options	Control Option 😭 C	lustomize	Pas	ss/Fail/Limit: 1/0/0	l'
2024-11-11 14: 2024-11-11 14:	26:00]       Auto detectd d         26:00]       Switch to: Pro0         37:05]       Auto detectd d         37:05]       Switch to: Pro0	6C evices: Pro06C		Socket 1 Socket 2 Socket 2	0%	
¢				Socket 3 Socket 4	0%	

Figure 4.2.a Common operation buttons

### 4.2.1 Blank

Check whether the code area and data area in the current MCU are all 0, and only check the storage area that has been checked. If the storage area is all 0, the blank success, otherwise, the blank failed. If the data read in the code encryption area are all 0, it will also show that the blank is successful.



Blank	Operation Help Read	<b>₽</b> × <b>Ω</b>	Verify	Auto	Dov	wnload	Sino Wea
Load Project	Chip select	SH79F3			Value	Taia	
Save Project	Code Option Code Checksum	: 80000000 C00 : 01A0-0000	0P_RS1 0P_WM 0P_SCI	IT:	P5.2 used as RS longest warm up Enable SCM		
Code	CRC16-CCITT CRC8-MAXIM Data Checksum	: 70F8 : 00 : 0000	OP_OSO OP_LVR	CRFB:	150K Disable LVR fund	tion	
Data	IC Version Mark	:0000	OP_LVR OP_SCI	M:	4.1V LVR Level 1 SCM is invalid in	warm up period	
	Writer: Pro06 FW Version:V2.2	6C ~ Auto 20 [2024-08-21 10:	Detect         OP_P37           36:42]         <			pility normal mode pility normal mode	
	Chip Options	Control Optio	n 🚼 Customize	•		Pass/Fail/Limit: 0/(	0/0
		Blank success!			^ Socket 1	Blank 100%	
· ·	57:24] Socket(1):						
	57:24] Socket(1):				Socket 2	0%	
rogram Report 2024-11-11 14:	5/:24] Socket(1):				Socket 2 Socket 3	0%	

Figure 4.2.1.a 'Blank' operation and display UI

### 4.2.2 Read

Read and display the project information in the currently connected MCU. When reading, it is required that the chip options match the actual IC, and the hardware connection is correct.



	Operation Help					Sino Wealt
Blank	Read E	Verify	Auto	Dow	mload	Upgrade FW
Load Project	Chip select SH79F3	28 Option	n Name	Value		
Save Project	Code Option : 8000000 C0	OP_R		P5.2 used as RST		
Save Project	Code Checksum : 0140-0000	OP_W		longest warm up t	ime	
	CRC16-CCITT : 70F8	OP_SC		Enable SCM		
Code	CRC8-MAXIM :00	-	SCRFB:	150K		
	Data Checksum : 0000	OP_LV		Disable LVR funct	ion	
ere Data	IC Version Mark : 0000	OP_LV		4.1V LVR Level 1		
	I	OP_SC		SCM is invalid in v		
	Writer: Pro06C V Auto	Detect	37-P34: 33-P30:	Port3[7:4] sink abi Port3[3:0] sink abi		
	FW Version:V2.20 [2024-08-21 10		3-F 30.	Folto[5.0] Slifk abi	ing normal mode	>
	Chip Options 🔜 Control Option	on 🔽 Customiz	-		D // 1// 1/ 0/0/0	
<u> </u>					Pass/Fail/Limit: 0/0/0	
	00:56] Socket(1): Read Code Opt				Pass/Fail/Limit 07070	
2024-11-11 15:		ion (0x800000	00000000	Socket 1	Read 100%	Ск
[2024-11-11 15: [2024-11-11 15:	00:56] Socket(1): Read Code Opt	ion (0x8000000 ecksum (0x0000	00000000	Socket 1		
[2024-11-11 15: [2024-11-11 15:	00:56] Socket(1): Read Code Opt 00:57] Socket(1): Read Code Che	ion (0x8000000 ecksum (0x0000 000000H - 000	000000000 ) 0000000)	Socket 1	Read 100%	
[2024-11-11 15: [2024-11-11 15: [2024-11-11 15: [2024-11-11 15:	00:56] Socket(1): Read Code Opt 00:57] Socket(1): Read Code Che 00:57] Socket(1): Read S/N (X:00	ion (0x8000000 ecksum (0x0000 000000H - 0000 000000H - 0000	000000000 ) 0000000)	Socket 1 S/N: 0x000	Read 100% 000000 CID: 0x00000000	
2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15:	00:56] Socket(1): Read Code Opt 00:57] Socket(1): Read Code Che 00:57] Socket(1): Read S/N (X:00 00:57] Socket(1): Read CID (X:00	ion (0x8000000 ecksum (0x0000 000000H - 0000 000000H - 0000 ion success!	000000000 ) 0000000) 0000000)	Socket 1 S/N: 0x000 Socket 2	Read 100% 00000 CID: 0x0000000 0%	
2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15:	00:56] Socket(1): Read Code Opt 00:57] Socket(1): Read Code Che 00:57] Socket(1): Read S/N (X:00 00:57] Socket(1): Read CID (X:00 00:57] Socket(1): Read Code Opt	ion (0x8000000 ecksum (0x0000 000000H - 0000 000000H - 0000 ion success! ion (0x8000000	0000000000	Socket 1 S/N: 0x000	Read 100% 000000 CID: 0x00000000	
2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15:	00:56] Socket(1): Read Code Opt 00:57] Socket(1): Read Code Che 00:57] Socket(1): Read S/N (X:00 00:57] Socket(1): Read ClD (X:00 00:57] Socket(1): Read Code Opt 00:58] Socket(1): Read Code Opt	ion (0x8000000 ecksum (0x0000 000000H - 0000 000000H - 0000 ion success! ion (0x8000000 ecksum (0x0000 000000H - 0000	000000000 ) 00000000) 00000000) 00000000	Socket 1 S/N: 0x000 Socket 2	Read 100% 00000 CID: 0x0000000 0%	C

Figure 4.2.2.a 'Read' operation and display UI

### 4.2.3 Verify

For the selected storage area, compare whether the information in the current MCU is consistent with the information on the current screen of the ProWriter. If it is consistent, the verify success; otherwise, the verify fails.



Blank	Read	Verify	Auto	Dov	vnload	Upgrade FW
Load Project Save Project Code Data	Code Option : 8000	<ul> <li>Auto Detect</li> </ul>	Option Name OP_RST: OP_WMT: OP_SCMEN: OP_OSCRFB: OP_LVREN: OP_LVRLE: OP_SCM: OP_P37-P34: OP_P33-P30: <	Value P5.2 used as RS longest warm up Enable SCM 150K Disable LVR func 4.1V LVR Level 1 SCM is invalid in Port3(7:4) sink at Port3(3:0) sink at	tion warm up period ility normal mode	,
	Chip Options 🔂 Cor	ntrol Option 💽 C	ustomize		Pass/Fail/Limit: 1/0/0	
Program Report [2024-11-11 15:	03:49] Socket(1): Verify s	uccess!		Socket 1     Socket 2	Verify 100%	
				Socket 3	0%	-

Figure 4.2.3.a 'Verify' operation and display UI

### 4.2.4 Auto

Perform the selected operations (such as erase, program, verify, and Security) from top to bottom according to the contents checked in the 'Auto Program Option' column.



	grammer - Advance M Operation Help	ode			-	Sino Wealth
Blank	Read	Verify	Auto	Down		Upgrade FW
Load Project Save Project Code Data	Socket Setting Socket 1 Socket 2 Socket 3 Socket 4 All Memory E2PROM Code-Sectors	Auto Program Option Erase Program Verify Security Option BootROM Sector select	O Auto Dete	Key to program ct program chine	Power Source Sel	/
<b>D D 1</b>	Chip Options	Control Option	stomize	Pa	ass/Fail/Limit: 2/0/0	
Program Report 2024-11-11 15:	03:49] Socket(1): V	/erify success!	^	Socket 1	Auto 100%	
	06:53] Writer parar			S/N: 0x0000	0000 CID: 0x00000000	ОК
2024-11-11 15:	06:53] Download fla 06:53] Auto progra 06:56] Auto progra	m start	L	Socket 2	0%	-Č
				Socket 3	0%	-Č
			~	Socket 4	0%	$\tilde{\circ}$

Figure 4.2.4.a 'Auto' operation and display UI

### Erase

Erase the selected Flash storage area.

#### Program

Program customer data, customer code and customer information to the corresponding flash storage area that has been checked.

### Verify

For the selected flash storage area, check whether the information in the chip is consistent with the information displayed on the current UI.

#### Security

To encrypt the code area. The code sector you want to encrypt can be selected through the UI that can be opened by clicking on the "Option..." button.

There are many kinds of encryption. For example, Ultra Security for Code Memory, Ultra Security for BootRom, MOVC Inhibit, Lock bit, SSP Security, etc.



	Operation Help		-		Sino Wealt
Blank	Read	Verify	Auto	Downloa	d Upgrade FV
Load Project	Socket Setting	Auto Program Option	Writer Setting		Power Source Select
Save Project	Socket 1	Erase	Use Start-K	ey to program	● 3.3V ○ 5V
Save Project	Socket 2	Program	O Auto Detect	tprogram	O External(Target board)
	Socket 3	✓ Verify			Use ResetPin
Code	Socket 4	Security Option	Match mach	hine	
Data			Customer pase	sword	Power on time: Default
	All Memory				6 ms v Auto Scar
	E2PROM	BootROM	010: 00-00	-00-00-00	Writer Port SWE
	Code-Sectors	Sector select	New: 00-00	-00-00-00	Uniter the
ecurity Option.				×	
					ail/Limit: 2/0/0
Ultra Securit	y for Code Memory			OK	
				Cancel	uto 100%
	0 B0 0 B1	1 🗆 B2	🗆 B0 🗔 B1	B2	CID: 0x00000000
	0~7: □ B0 □ B	1 B2 Sector 8~	15: B0 B1	□ B2	0%
Sector					0.10
Sector 16				□ B2	
Sector 10 Sector 32	2~39: □ B0 □ B	1 B2 Sector 40~		□ B2 □ B2	
Sector 16	2~39: □ B0 □ B	1 B2 Sector 40~			0%
Sector 10 Sector 32	2~39: □ B0 □ B	1 B2 Sector 40~			0%

Figure 4.2.4.b 'Security' option UI

### 4.2.5 Download

Download the configuration information of the current UI to the programmer. Before performing the 'download' operation, it is important to focus on the offline programming configuration items: 'Use start-key to program' and 'Auto Detect program'.

### Use start-key to program

If the 'Use start-key to program ' is already checked, the programmer will not start programming directly when it detects that a new chip has been connected in offline mode. It will only start programming when it detects that the 'Start Key' is pressed.

### Auto Detect program

If the 'Auto Detect program' is already checked, the programmer will automatically start the programming action directly when it detects that a new



chip has been connected in offline mode.

I SinoWealth Prog	rammer - Advance M	ode			_	
Mode Language	Operation Help				<b></b>	🕽 Sino Wealth
Blank	Read	Verify	Auto	Downloa	ad Ew1	Upgrade FW
Load Project     Save Project     Code     Code     Data	Socket Setting Socket 1 Socket 2 Socket 3 Socket 4 All Memory E2PROM Code-Sectors	Auto Program Option Erase Program Verify Security Option BootROM Sector select	O Auto Detect	Key to program St program Shine	Power Source Se	et board)
	Chip Options	Control Option Customize	e	Pas	s/Fail/Limit 0/0/0	
Program Report						
[2024-11-11 15:0	03:49] Socket(1): V	erify success!	^	Socket 1	0%	$\bigcirc$
[2024-11-11 15:0	06:53] Writer paran	neters no changed.				
•	06:53] Download fla					$\widetilde{\mathbf{O}}$
	06:53] Auto program			Socket 2	0%	_ ( )
	06:56] Auto program	n finished. 's S/N: 25-A5-9B-53-4B-FB-BA	-79-38			$\bigcirc$
•	15:42] Programmer 15:47] Download fla		10-00	Socket 3	0%	$\bigcirc$
<			>	Socket 4	0%	Ō

Figure 4.2.5.a 'Download' operation and display UI



## 4.3 Load project and save project

Blank	Read	Verify	Auto		Download	EW1	Upgrade FW
Load Project     (3)     Save Project     Code     Code	Code Checksum : CRC16-CCITT : CRC8-MAXIM : Data Checksum :	SH79F328  80000000 C0000000 0140-0088 C088 BE 0000 0000  Auto Detect 0024 08 21 10.25421	Option Name           OP_RST:           OP_WMT:           OP_SCMEN:           OP_UVREN:           OP_UVREN:           OP_SCMEN:           OP_SCMEN:           OP_SCMEN:           OP_SCMEN:           OP_SCMEN:           OP_SCMEN:           OP_SCMEN:           OP_SCM:           OP_SCM:           OP_P33-P30:	Iongest wa Enable SC 150K Disable LV 4.1V LVR L SCM is inv Port3[7:4] s	'R function	ode	
			<				>
Program Report			< Customize		Pass/Fail/Lim	it: 0/0/0	>

Figure 4.3.a Load project and Save project

### 4.3.1 Load Project

Load the project file that will be programmed. The project file formats supported include nopf, opf, hex, bin. The project files can only be loaded once. If you need to load other project files, you need to restart the ProWriter software.



de Lenguere	Operation Hel	n					Sino Wealt
de Language	operation neg	P					Sino Wealt
Blank	Re	ad Verify		Auto		Download	Upgrade FV
Load Project	🖊 Open				:	×	
		his PC > Desktop > nopf test	∨ రి Sea	ch nopf test	م	RST pin	
Save Project	Organize 👻 New fold	der		8== -	- 🔳 🔞	up time	
	OneDrive	Name Select the nopf file	Date modified	Туре	Size		
Code	OneDrive - Perso	(%) test.nopf (%) test1.nopf	9/25/2023 3:26 PM 10/8/2023 5:33 PM	NOPF File NOPF File		4	
Coue	This PC	(g) test2.nopf	10/8/2023 5:38 PM	NOPF File		unction	
Data	3D Objects	<pre>   test3.nopf   west4.nopf </pre>	10/9/2023 2:25 PM 10/13/2023 11:13 AM	NOPF File		5I 1	
	Desktop	( testanopi	10/13/2023 11:13 AM	NOPTTHE		t in warm up period	
	Downloads					k ability normal mode	
	Music					k ability normal mode	
	Videos						>
	S (C:)						
	Local Disk (D:)					Pass/Fail/Limit: 0	/0/0
D	Local Disk (E:) OS (F:)						
rogram Report		<				>	$\sim$
024-11-11 15:0		name: test1.nopf	~ Pro	ject files(*.nopf;*	.opf;*.hex;* ~	0%	(
024-11-11 15:0				Open	Cancel		$\cup$
	06:53] Auto pro	arem start			Socket 2	0%	$\cap$
	06:56] Auto pro	•			SOCKEL 2	0 %	
		mer's S/N: 25-A5-9B-53	-48-F8-84-79-3				$\mathbf{C}$
		d flash success!			Socket 3	0%	$\bigcap$
024111110.	IO.47] Downloa	a hash success:		E E			
				~ L			$\sim$
						0%	

Figure 4.3.1.a Load project file example

### 4.3.2 Save Project

Save the configured parameters and code information on the ProWriter software UI as project files in nopf or opf format.



SinoWealth Progr	rammer - Advance Mode	-	×
Mode Language	Operation Help	🌎 Sino Wealth	
Blank	Save Xerify Auto Download Save	Upgrade FW	
Load Project  Save Project  Code  Code  Data	Chip s       Filename: test1       .nopf          Code       保存路径: D:\          CRC       Project Name: test          Data       Version: 1.0          IC Ve       Company: Sinowealth          Write       Author: a1190          FW       Password:          Repeat Password:	/0	~
	03:49]     Hide Code     Hide Data     Validity period     Unlimited       06:53]     15-Minutes       06:53]     30-Minutes       06:53]     OK     Cancel		

Figure 4.3.2.a Save project file example

When saving a project, you can configure the filename, project name, and set the password.

When saving a project, the customer can set the Assign programmer's SN, which means that the programmer that assigns a serial number will program the project file. Using other programmers will not load the project file normally. Click the 'Read SN' button to load the serial number of the current programmer.

When saving a project, the customer can set the hide code or hide data.

After loading the 'Hide Code' project, the UI will not display the 'Code' button, which makes it impossible to view the relevant code, thus achieving the function of 'Hide Code'.



Blank	Read Verify	Auto	Download	Upgrade FV
Load Project	Chip select SH79F328	Option Name	Value	
]	Code Option : 80000000 C1BFFE3	I OP_RST:	P5.2 used as I/O pin	
	Code Checksum : 033D-0000		shortest warm up time	
	CRC16-CCITT :70F8	OP_SCMEN:	Disable SCM	
	CRC8-MAXIM :00	OP_OSCRFB:	500K	
1	Data Checksum : 0000 IC Version Mark : 0000	OP_LVREN: OP_LVRLE:	Enable LVR function 2.1V LVR Level 4	
Ter Data	IC Version Mark .0000	OP_SCM:	SCM is valid in warm up period	
		OP P37-P34	Port3[7:4] sink ability large mode	
	Writer: Pro06C ~ Auto Deter	ct OP_P33-P30:	Port3[3:0] sink ability large mode	
	FW Version:V2.20 [2024-08-21 10:36:42]			>
	Chip Options Control Option	Customize	Pass/Fail/Limit. 0 / 0 / (	)
Program Report 2024-11-11 15:	38:11] Chip Configuration. Code:28.0K	E2PROM:4.0K	^ Socket 1 0%	$\cap$
2024-11-11 15:	38:11] Select Chip: SH79F328			_(
2024-11-11 15:	38:12] Writer (Pro06C) connected! Firm	ware Version: 2.20	1	$\sim$
	38:12] Chip Configuration. Code:28.0K	E2PROM:4.0K	Socket 2 0%	(
2024-11-11 15:	38:12] Select Chip: SH79F328			
2024-11-11 15:				
2024-11-11 15:	38:12] Writer (Pro06C) connected! Firm	ware Version: 2.20	Saakat 2 0%	$\cap$
2024-11-11 15:		ware Version: 2.20	Socket 3 0%	-C

Figure 4.3.2.b Load project file example about 'Hide Code'

When saving a project, the validity period of the project file can be set. In this way, expired project files will not be able to load properly, and a prompt will be displayed indicating that the authorization has expired.



Blank	Read	Verify	Auto	Down	load	Sino Wealth
Blank Load Project Save Project Code Data	Chip select	SH79F328 80000000 C1BFFE3F 133D,0000 Error	Option Name OP_RST: OP_WMT: X	Value P5.2 used as I/O pin shortest warm up til Disable SCM 500K Enable LVR function 2.1V L/R Level 4 SCM is valid in warr Port3[7:4] sink abilit	n me n n up period	
	FW Version:V2.20 [2       Image: Chip Options	Control Option 😭 (	确定 Customize	Port3[3:0] sink abilit	y large mode ass/Fail/Limit: 0/0	>
024-11-11 15: 024-11-11 15: 024-11-11 15:	44:03] Chip Configura 44:03] Select Chip: Sh 44:03] Writer (Pro06C 44:03] Auto detectd d 44:03] Switch to: Pro0	179F328 ) connected! Firmwa evices: Pro06C		Socket 1 Socket 2	<b>0%</b>	
				Socket 3	0%	—Č

Figure 4.3.2.c Load project file example about 'Authorization has expired'



## 4.4 Code and Data

Save Project       Code Option       :80000000 C1BFFE3F         Code Checksum       :033D-0000         Code Checksum       :033D-0000         CRC16-CCITT       :70F8         CRC8-MAXIM       :00         Data Checksum       :0000         (4)       :0000	Blank	<b>Read</b>	Verify	Auto	Downlo	ad	Upgrade FW
Program Report         2024-11-11 15:47:24] Chip Configuration. Code:28.0K E2PROM:4.0K         2024-11-11 15:47:24] Select Chip: SH79F328         2024-11-11 15:47:24] Writer (Pro06C) connected! Firmware Version: 2.20         2024-11-11 15:47:24] Auto detectd devices: Pro06C         2024-11-11 15:47:24] Switch to: Pro06C	Save Project	Code Option : Code Checksum : CRC16-CCITT : CRC8-MAXIM : Data Checksum : IC Version Mark : Writer: Pro06C	80000000 C1BFFE3F 033D-0000 70F8 00 0000 0000 0000 ~ Auto Detect	OP_RST: OP_WMT: OP_SCMEN: OP_OSCRFB: OP_LVREN: OP_LVRLE: OP_SCM: OP_P37-P34: OP_P33-P30:	P5.2 used as I/O pin shortest warm up tim Disable SCM 500K Enable LVR function 2.1V LVR Level 4 SCM is valid in warm Port3[7:4] sink ability	up period large mode	>
2024-11-11 15:47:24] Writer (Pro06C) connected! Firmware Version: 2.20 2024-11-11 15:47:24] Auto detectd devices: Pro06C 2024-11-11 15:47:24] Switch to: Pro06C					_		
		47:24] Chip Configura	HOIL COUC.20.011 L				

Figure 4.4.a Code and Data

### 4.4.1 Code

**Code** ——Load the user code to be programmed. The code file supports two formats: 'hex', 'bin'.



🦊 Sino	Wealt	h Pro	gran	nmer	- Adv	/ance	Mod	e													
Mode	Lang	uage	Op	perati	on	Help														🕽 Sino Wea	lth
×	BI	ank		ſ		Read	1	×	Ő	Ve	erify				Auto			Download	EW1	Upgrade F	w
酔 Lo	ad Pr	oject	С	hip se	elect			S	H79	F328	3	0	ption I	Vame		Va	alue				^
💾 Sa	ave Pr	oject	] [	Code Code CRC1	Chec	ksum	:	80000 033D- 5 <b>B2</b> F		C1BF	FE3F	OF	P_RST P_WM SCN	D:		sh		ed as I/O pin warm up time SCM			
CODE	Cod	е		CRC8 Data (	-MAXI	М	:(	DF FA00				OF OF	_OSC _LVR	RFB: EN:		En		VR function			_
	Data			C Ver	sion I	Mark	:(	0000					LVR SCI					R Level 4 valid in warm up period	t		— —
	Fill			Cle	ar						Nex	t>>	In	nport		Exp	ort	Check Sum:FA00	-		
Offset		0	1	2	3	4	5	6	7	8	9	Α	В	С	D	Е	F				1
00000	OH:	0 0	01	02	03	04	. 05	06	07	08	09	0 A	0 B	0 C	0 D	0 E	0 F				
00001	OH:	10	11	12	13	14	15	16	17	18	19	1 A	1 B	1 C	1 D	1 E	1 F				
00002	OH:	20	21	22	23	24	25	26	27	28	29	2 A	2 B	2 C	2 D	2 E	2 F	.!"#\$%&'[]*	*+, - , [		
00003	OH:	30	31	32	33	34	35	36	37	38	39	3A	3B	3 C	3 D	3 E	3 F	0123456789:	; <=>?		
nnnn4 Data			<b>41</b>	42	43	44	45	46	47	48	49	4A	<b>4</b> B	40	<b>4</b> D	4E	4F	@ABCDEEGHL.	iklmno		×
	Fill			Clea	ar						Next	>>	Im	port		Expo	ort	Check Sum:FA00	-		
Offset		0	1	2	3	4	5	6	7	8	9	A	в	С	D	Е	F				^
000000	DH:	00	01	02	03	04	05	06	07	08	09	0 A 0	0 B	0 C	0 D	0E	0 F				
000010	DH:	10	11	12	13	14	15	16	17	18	19	1 A	1B	1 C	1 D	1 E	1 F				
000020	nH:	2.0	21	22	23	24	25	26	27	28	20	2 A	20	20	2 D	25	9.5	.!"#\$%&'[]*			

Figure 4.4.1.a Load Code and Load Data Operation UI

Clicking the 'Code' button will pop up a code window, which can display the following content or perform the following operations:

#### Fill

Fill the whole or a segment of the code storage buffer with a value (value range:  $00H \sim FFH$ ).

Clear

Clear the value of the whole code store buffer.

#### Search box

Search a value (00H  $\sim$  FFH) in the whole code storage area, and click 'Next' to jump to the next address of the value.

#### Import

Import the file of the specified format (supporting three formats of .hex



/.bin /.obj) into the code window.

### Export

Export the current buffer data (supporting three formats of .hex/.bin/.obj) and save it.

### Check Sum

Display the checksum of the current code storage area in real time.

### 4.4.2 Data

**Data**——Load the user data to be programmed. The data file supports two formats: 'hex', 'bin'.

The 'Data' UI and operation are similar to the 'Code' UI and operation, so the explanation is omitted.



### 4.5 **Programming information configuration area**

### 4.5.1 Chip options UI

Choosing the right chip is the first step of programming. Click the button of chip model on the right side of 'Select Chip' to pop up the Chip selection window. Please see the example description in Chapter 5.1 for more details.

Blank	Operation Help Read		Verify		Auto		Download	FW1	Sino Wealt
Load Project     Save Project     Code     Data	CRC16-CCITT CRC8-MAXIM		(2) (3)	Option Nar () OP_RST: OP_WMT: OP_SCMEN OP_LVREN OP_LVRLE: OP_SCM: OP_P37-P3 OP_P33-P3 <	N: FB: : :	Port3[7:4] si	rm up time M function	node	>
	47:24] Chip Options			Customize 2PROM:4.0	K A	Socket 1	Pass/Fail/	Limit: 0/0/0 0%	- (
024-11-11 15:	47:24] Writer (Pro06 47:24] Auto detectd 47:24] Switch to: Pro	devices: Pro		re Version:	2.20	Socket 2 Socket 3		0%	Č
						Socket 4		0%	$\tilde{c}$

Figure 4.5.a 'Chip options' Sub UI

### ■ (1) Code option

Configure the project according to the code options provided by the chip. When setting, just click the options, all the options available will be listed, and then click the required options.

### (2) Code checksum

XXXX - YYYY: XXXX is the code option value checksum, YYYY is the code checksum.



### ■ (3) Data checksum

E2 data's checksum.

■ (4) Writer display

Display information about the currently connected programmer. If no information is displayed, please click the "Auto Detect" button.



### 4.5.2 Control option UI

👃 SinoWealth Prog	rammer - Advance Me	ode			– 🗆 X
Mode Language	Operation Help				Sino Wealth
Blank	Read	Verify	Auto	Download	d Ewdl Upgrade FW
Load Project Save Project Code Data	Socket Setting Socket 1(1) Socket 2 Socket 3 Socket 4	Auto Program Option  Erase (2)  Program Verify Security Option  (6) BootROM Sector select	Writer Setting	vord (5) 0-00-000	Power Source Select
	Chip Options	Control Option 💽 Customize	e	Pass	/Fail/Limit 0/0/0
[2024-11-11 15:4 [2024-11-11 15:4 [2024-11-11 15:4	47:24] Select Chip:	6C) connected! Firmware Versi devices: Pro06C	ion: 2.20	ocket 1	
<			> S	ocket 4	0%

Figure 4.5.2.a 'Control option' sub UI

### ■ (1) Socket Setting

You can check the required program channel here.

### ■ (2) Auto Programming Option

Configure the specific action items to be performed when clicking 'Auto' button.

### ■ (3) Writer setting

In mass production programming mode, a new programming needs to be triggered after each chip change. The trigger mode can be configured as either "Auto Detect program" or "Use Start-Key to program". Check the "Match machine" to set that the LED lights are all off and no longer flash in case of programming error.

(4) Power



Configure the power supply mode of the target MCU when programming.

### (5) Customer password settings

Edit and set the customer password. It is used to encrypt the whole chip. Please be aware that this code can be set only after the security function is enabled.

### ■ (6) Flash programming area configuration

Configure the region to program by checking.

- All Memory——include code, option, Customer information, Security information
- E2PROM——Customer data storage area
- 🖊 SinoWealth Programmer Advance Mode × Mode Language Operation Help Sino Wealth Upgrade FW Verify Download Blank Read Auto 🎯 Load Project Socket Setting - Auto Program Setting Writer setting Multi-Program: Power Socket 1 Erase Erase Blank Wait for key press Ourrent Area O 3.3V 🛃 Save Project ● 5V Auto Detect Socket 2 Program Assign Area Power on time: Default 1 Socket 3 ✓ Verify Match machine 🖏 Code Window 6 ms Auto Scan 🛛 Next Area Socket 4 Security Option... Custom Security Data Window Whole flash code (Include option, security, SN, ID) 00-00-00-00-00-00 E2PRom BootRom Use RESET pin enter mode Old: New 00-00-00-00-00-00 Sectors of flash code Sector Option PGM Interface: JTAG hip Options 🙀 Control Option A Customize Pass/Fail/Limit: 1/1/1000 Program Report [2023-10-13 17:13:42] Select Chip: SH79F3283 Socket 1 0% [2023-10-13 17:13:42] Device (Pro06C) connected! Firmware Version: 2.00 [2023-10-13 17:13:42] Auto detectd devices: Pro06C 0% [2023-10-13 17:13:42] Switch to :Pro06C Socket 2 [2023-10-13 17:19:01] Select Chip: SH79F3283 [2023-10-13 17:19:01] Device (Pro06C) connected! Firmware Version: 2.00 0% Socket 3 <
- Code-Sectors ——Customer code storage area

- Figure 4.5.2.b Programming Area Configuration
- (7) The check option of reset pin



If checked, the reset pin in the programmer interface should be connected with the reset pin of the target MCU when programming.

■ (8) Writer Port setting

Configure the interface mode of programming.

(9) Power on Time

The 'power on time' is an important parameter for whether the programmer can enter the write mode normally, which needs to be matched with the actual circuit of the customer.



### 4.5.3 Customize UI

I SinoWealth Prog	jrammer - Advance Mode	- 🗆 X
Mode Language	Operation Help	Sino Wealth
Blank	Read Verify Auto Download	Upgrade FW
Load Project Save Project Code Data	CID       (1)       S/N       (2)       Others         Value:       0       Value:       0       Agent ID         Format       DEC        Step:       +0       More         Anti Transshipment Code       (3)       Check before       Check before         Burn Mode       Normal       Source:       SCAN       Check before	Ū
	Anticode len: 1 ~ 32 ~ Code Che	
[2024-11-11 15:4 [2024-11-11 15:4	47:24] Chip Configuration. Code:28.0K E2PROM:4.0K  A7:24] Select Chip: SH79F328 47:24] Writer (Pro06C) connected! Firmware Version: 2.20	-0
[2024-11-11 15:4 [2024-11-11 16:2	47:24] Auto detectd devices: Pro06C       Socket 2       0%         47:24] Switch to: Pro06C       Socket 2       0%         25:05] Auto detectd devices: Pro06C       Socket 3       0%         25:05] Switch to: Pro06C       Socket 3       0%	
<	Socket 4 0%	—Õ

Figure 4.5.3.a 'Customize' sub UI

- (1)Customer ID
  - The length of CID is 4bytes.
  - Input and display formats support both decimal and hexadecimal.
  - The step size can be set freely as actual needs, and the recommended range is: -99 ~ + 99.

### ■ (2)Serial Number

- The length of Serial Number is 4bytes.
- Input and display formats support both decimal and hexadecimal.
- The step size can be set freely as actual needs, and the recommended range is: -99 ~ + 99.
- **(3)**Anti Transshipment Code related information or options



### ■ (4)Program limit

Set the upper limit of program times. When program reaches the set value, program will not continue. 'O' means no limit.



## 4.6 Program Report

	1	B.			EW1	
X Blank	<b>1</b> Read	Verify	Auto	Downlo	ad	Upgrade FW
Load Project	Chip select	SH79F328	Option Name	Value		
Save Project	Code Option : 8	0000000 C1BFFE3F	OP_RST:	P5.2 used as I/O pin		
durer reject	Code Checksum : 03	33D-FA00	OP_WMT:	shortest warm up tim Disable SCM	8	
	CRC16-CCITT : 5E		OP_SCMEN: OP_OSCRFB:	500K		
Code	CRC8-MAXIM : 0F Data Checksum : FA		OP_LVREN:	Enable LVR function		
Dete	IC Version Mark :00		OP_LVRLE:	2.1V LVR Level 4		
na Data			OP SCM:	SCM is valid in warm	up period	
			OP_P37-P34:	Port3[7:4] sink ability		
	Writer: Pro06C	<ul> <li>Auto Detect</li> </ul>	OP_P33-P30:	Port3[3:0] sink ability	arge mode	
	FW Version:V2.20 [20	24-08-21 10:36:42]	<			>
	Chip Options 🔜 🤇	Control Option 💽 0	Customize	Pas	s/Fail/Limit 0/0/0	
	47:24] Chip Configuratio	on. Code:28.0K E	2PROM:4.0K	^ Socket 1	0%	$\cap$
2024-11-11 15:	47:24] Chip Configuratio 47:24] Select Chip: SH7		2PROM:4.0K	A Socket 1	0%	-0
2024-11-11 15: 2024-11-11 15:		79F328		Socket 1	0%	C
2024-11-11 15: 2024-11-11 15: 2024-11-11 15:	47:24] Select Chip: SH7	79F328 connected! Firmwa		Socket 1 Socket 2	0%	
2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15:	47:24] Select Chip: SH7 47:24] Writer (Pro06C) 47:24] Auto detectd dev 47:24] Switch to: Pro06	79F328 connected! Firmwa vices: Pro06C C	re Version: 2.20			C
2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 16:	47:24] Select Chip: SH7 47:24] Writer (Pro06C) 47:24] Auto detectd dev 47:24] Switch to: Pro06 25:05] Auto detectd dev	79F328 connected! Firmwa vices: Pro06C C vices: Pro06C		Socket 2	0%	C
2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 16:	47:24] Select Chip: SH7 47:24] Writer (Pro06C) 47:24] Auto detectd dev 47:24] Switch to: Pro06	79F328 connected! Firmwa vices: Pro06C C vices: Pro06C	re Version: 2.20			CCC
2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 16:	47:24] Select Chip: SH7 47:24] Writer (Pro06C) 47:24] Auto detectd dev 47:24] Switch to: Pro06 25:05] Auto detectd dev	79F328 connected! Firmwa vices: Pro06C C vices: Pro06C	re Version: 2.20	Socket 2	0%	

Figure 4.6.a Program report

The information of log can be printed in real time here. The red information means an error, which needs special attention. The time of the current operation is shown in brackets.



## 4.7 Status display area of each channel

ode Language	grammer - Advance Mode Operation Help	-			- 🗆 🗢
Blank	<b>Read</b>	Verify	Auto	Download	Upgrade FW
Load Project     Save Project     Code     Data	Code Checksum : C CRC16-CCITT : S CRC8-MAXIM : C Data Checksum : F	A00 0000 V Auto Detect	Option Name           OP_RST:           OP_WMT:           OP_SCMEN:           OP_OSCRFB:           OP_LVREN:           OP_LVREN:           OP_S0M:           OP_937-P34;           OP_P33-P30;	Value P5.2 used as I/O pin shortest warm up time Disable SCM 500K Enable LVR function 2.1V LVR Level 4 SCM is valid in warm up period Port3[7:4] sink ability large mode Port3[3:0] sink ability large mode	>
	Chip Options	Control Option 😭 C	Customize	Pass/Fail/Limit	0/0/0
2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 15: 2024-11-11 16:	47:24] Chip Configura 47:24] Select Chip: SH 47:24] Writer (Pro06C 47:24] Auto detectd de 47:24] Switch to: Pro0 25:05] Auto detectd de 25:05] Switch to: Pro0	179F328 ) connected! Firmwa evices: Pro06C 6C evices: Pro06C		Socket 1         0%           Socket 2         0%           (7)         (7)           Socket 3         0%	

Figure 4.7.a area of each channel Status display

Display the status and final result of each channel in real time. The red means error, green means success. This bar will only be displayed when the corresponding socket is selected.



## 4.8 Programmer firmware upgrade

	Operation Help	1.5		1		Sino Wealth
Blank	1 Read	Verify	Auto	Downlo	bad	Upgrade FW
Load Project	Chip select	SH79F328	Option Name	Value		
Save Project	Code Option :	80000000 C1BFFE3F	OP_RST:	P5.2 used as I/O pin		
Save Project	Code Checksum :	033D-FA00	OP_WMT:	shortest warm up tin	ne	
		5B2F	OP_SCMEN:	Disable SCM 500K		
ODE Code		OF	OP_OSCRFB: OP_LVREN:	Enable LVR function		
		FA00 0000	OP_LVREN.	2.1V LVR Level 4		
Data	loversion mark .	0000	OP_SCM:	SCM is valid in warm	up period	
			OP P37-P34	Port3[7:4] sink ability		
	Writer: Pro06C	~ Auto Detect	OP_P33-P30:	Port3[3:0] sink ability	-	
	FW Version:V2.20 [	2024-08-21 10:36:42]	<		-	>
	Chip Options	Control Option 💽 (	Customize	Pa	ss/Fail/Limit: 0 / (	0/0
				Pa	oss/Fail/Limit: 0 / (	0/0
[2024-11-11 15:	47:24] Chip Configura 47:24] Select Chip: S	ation. Code:28.0K E				o/o
[2024-11-11 15: [2024-11-11 15:	47:24] Chip Configura	ation. Code:28.0K E H79F328	2PROM:4.0K			
[2024-11-11 15: [2024-11-11 15: [2024-11-11 15:	47:24] Chip Configura 47:24] Select Chip: S	ation. Code:28.0K E H79F328 C) connected! Firmwa	2PROM:4.0K			
[2024-11-11 15) [2024-11-11 15) [2024-11-11 15) [2024-11-11 15) [2024-11-11 15)	47:24] Chip Configura 47:24] Select Chip: S 47:24] Writer (Pro060	ation. Code:28.0K E H79F328 C) connected! Firmwa devices: Pro06C	2PROM:4.0K	A Socket 1	0%	
[2024-11-11 15: [2024-11-11 15: [2024-11-11 15: [2024-11-11 15: [2024-11-11 15: [2024-11-11 15:	47:24] Chip Configura 47:24] Select Chip: Si 47:24] Writer (Pro060 47:24] Auto detectd of	ation. Code:28.0K E H79F328 C) connected! Firmwa devices: Pro06C 06C	2PROM:4.0K	Socket 1 Socket 2	<b>0%</b>	
[2024-11-11 15: [2024-11-11 15: [2024-11-11 15: [2024-11-11 15: [2024-11-11 15: [2024-11-11 15: [2024-11-11 16:	47:24] Chip Configura 47:24] Select Chip: Si 47:24] Writer (Pro060 47:24] Auto detectd of 47:24] Switch to: Pro0	ation. Code:28.0K E H79F328 C) connected! Firmwa devices: Pro06C 06C devices: Pro06C	2PROM:4.0K	A Socket 1	0%	
[2024-11-11 15: [2024-11-11 15: [2024-11-11 15: [2024-11-11 15: [2024-11-11 15: [2024-11-11 15: [2024-11-11 16:	47:24] Chip Configura 47:24] Select Chip: Si 47:24] Writer (Pro060 47:24] Auto detectd of 47:24] Switch to: Pro0 25:05] Auto detectd of	ation. Code:28.0K E H79F328 C) connected! Firmwa devices: Pro06C 06C devices: Pro06C	2PROM:4.0K	Socket 1 Socket 2	<b>0%</b>	
[2024-11-11 15: [2024-11-11 15: [2024-11-11 15: [2024-11-11 15: [2024-11-11 15:	47:24] Chip Configura 47:24] Select Chip: Si 47:24] Writer (Pro060 47:24] Auto detectd of 47:24] Switch to: Pro0 25:05] Auto detectd of	ation. Code:28.0K E H79F328 C) connected! Firmwa devices: Pro06C 06C devices: Pro06C	2PROM:4.0K	Socket 1 Socket 2	<b>0%</b>	

Figure 4.8.a Programming device firmware upgrade

Here the user can add and update the firmware version of the programmers. The firmware versions of all programmers or emulators are stored in the folder named firmware under the installation root directory of ProWriter.



### 4.9 UI of the simulator in online mode

SinoLink Pro/Plus can support programming in offline mode with only a single channel. But only the "Use Start-Key to program " method is supported, and the " Auto Detect program " method is not supported.

When the simulator is online, "Auto Detect program" or "Use Start-Key to program" option will not be displayed.

I SinoWealth Prog	rammer - Advance N	lode		- 🗆 X
Mode Language	Operation Help			Sino Wealth
Blank	Read	Verify	Auto Downlo	Dad EW1L Upgrade FW
Load Project     Save Project     Code     Data	Socket Setting Socket 1 Socket 2 Socket 3 Socket 4 Socket 4 CAll Memory E2PROM Code-Sectors	Auto Program Option  Erase  Program  Verify  Security Option  BootROM Sector select	Writer Setting Use Start-Key to program Auto Detect program Match machine Customer password Old: 00-00-00-00-00 New: 00-00-00-00-00	Power Source Select
	Chip Options	Control Option 💽 Custom	nize Pass	s/Fail/Limit 100/0/0
	04:04] Auto detecto 04:04] Switch to: S	d devices: SinoLinkPlus inoLinkPlus	Socket 1	0%
			Socket 2	Ŏ
			Socket 3	0%
<			Socket 4	0%

Figure 4.9.a UI of the SinoLink Plus in online mode

SinoLink/JET51A does not support programming in offline mode.



	rammer - Advance N Operation Help			Sino Wealt
Blank	Read	Verify	Auto	Download Ew1 Upgrade FW
Load Project Save Project Code Data	Socket Setting Socket 1 Socket 2 Socket 3 Socket 4 All Memory E2PROM Code-Sectors	Auto Program Option Program Verify Security Option BootROM Sector select	Writer Setting Use Start-Key to pro Auto Detect program Match machine Customer password Old: 00-00-00-00 New: 00-00-00-00	O External(Target board) Use ResetPin Power on time: Default 5 ms V Auto Scan Writer Port. SWE V
rogram Report	Chip Options	Control Option 💽 Customiz	e	Pass/Fail/Limit: 100 / 0 / 0
2024-11-11 17:	04:04] Switch to: S		^ Socket 1	0%
2024-11-11 17: 2024-11-11 17:	12:22] No device of 12:22] No avalid d 12:25] Auto detect 12:25] Switch to: S	evice to use. d devices: SinoLink	Socket 2	0% C
			Socket 3	0%
			> Socket 4	0%

Figure 4.9.b UI of the SinoLink in online mode



## Chapter 5 **ProWriter Program example**

In this chapter, we will introduce two examples of programming chips. One is how to program nopf files, and the other is regular, configuring parameters in the ProWriter UI and downloading and programming to the chip.

## 5.1 How to program nopf file to the chip

### 5.1.1 Connecting the programmer

Power on the programmer and connect it to the PC via USB.

### 5.1.2 Loading nopf file

Open the ProWriter software and load the nopf file through the "Load Project" button on its UI.

ode Language	Operation He	lp						5	Sino Wealth
Blank	Re Re	ead E	Verify		Auto		Download	FW1	Upgrade FW
Load Project	↓ Open					:	×		
	$\leftarrow \rightarrow \neg \uparrow \blacksquare $	This PC > Desktop > no	pf test	~ Õ	Search nopf test	م	RST pin		
Save Project	Organize 👻 New fo	lder			1==	- 🔳 🔞	up time		
	<ul> <li>OneDrive</li> </ul>	Name Select	he nopf file to l	Date modified	Туре	Size			
Code	OneDrive - Perso	<pre>   test.nopf   test1.nopf </pre>		9/25/2023 3:26 PM 10/8/2023 5:33 PM	NOPF File NOPF File		4		
	💻 This PC	West2.nopf		10/8/2023 5:38 PM	NOPF File		Junction		
Data	3D Objects	West3.nopf West4.nopf		10/9/2023 2:25 PM 10/13/2023 11:13 A	NOPF File M NOPF File		9I 1		
	Desktop	- testernopr		10/13/2023 11:13 A	in northe		1 in warm up period		
	Downloads						k ability normal mod	le	
	Music						k ability normal mod	le	
	Pictures								>
	S (C:)								
	🕳 Local Disk (D:)						Pass/Fail/Limit	0/0/0	
	Local Disk (E:) OS (F:)								
Program Report		<				_	>		$\frown$
2024-11-11 15:0	I VELWOIK	name: test1.nopf		~	Project files(*.nopf;	*.opf:*.hex:* ~	0%		
2024-11-11 15:0	L				Open	Cancel			
2024-11-11 15:0				l					$\frown$
2024-11-11 15:0						Socket 2	0%		_ (
2024-11-11 15:(		0							$\cup$
2024-11-11 15:1				B-FB-BA-79	-38	0.1.10			$\cap$
2024-11-11 15:1	15:47] Downloa	ad flash succe	SS!			Socket 3	0%		_ (
									$\cup$
<					>	Socket 4	0%		$\bigcap$
•						oocket 4	0%		

Figure 5.1.2.a Loading nopf file \_1



ac Language	Operation Help					Sino Wealt
Blank	Read	Verify	Auto	Downlo	ad	Upgrade FW
Load Project	Socket 1 Socket 2 Socket 2 Socket 3 Socket 4	o Program Option crase Program Verify Gecurity Option botROM Sector select	Writer Setting © Use Start- O Auto Dete Match mai	Key to program ct program	Power Source Se	V et board)
	Chip Options	ntrol Option 💽 Custor	nize	Pa	ss/Fail/Limit 0/0/0	
	12:25] Switch to: SinoLin 22:47] File: D:\nopf test\tr		ss!	Socket 1	0%	-C
	22:48] Chip Configuration 22:48] Select Chip: SH79 22:48] Writer (SinoLink) of	F328 connected! Firmware V	/ersion: 3.10	Socket 2	0%	-Č
	22:481 Chin Configuration	. Code:28.0K E2PRC	DM:4.0K	Socket 3	0%	$\cap$
2024-11-11 17 2024-11-11 17	22:48] Select Chip: SH79 22:48] Writer (SinoLink)		ersion: 3.10			

Figure 5.1.2.b Loading nopf file \_2

#### Note:

Although the loaded nopf file is 'read-only', there are still some operations that can be executed, such as 'Blank'. Some parameters can also be configured or modified, such as 'Writer Port', 'Power on time', 'Use Resetpin', etc.

### 5.1.3 Download parameters

Download programming related configuration parameters to the programmer. For details, please refer to Chapter 4.2.5 of this article.



Code Option : 8000 Code Checksum : 0330- CRC16-CCITT : 70F8 CRC8-MAXIM : 00 Data Checksum : 0000 IC Version Mark : 0000	0000 C1BFFE3F 0000 0000 0P 0P 0P 0P 0P 0P 0P	_WMT: _SCMEN: _OSCRFB: _LVREN: _LVRLE: _SCM: _P37-P34: _P33-P30:	Value P5.2 used as I/O pin shortest warm up time Disable SCM 500K Enable LVR function 2.1V LVR Level 4 SCM is valid in warm u Port3[7:4] sink ability la Port3[3:0] sink ability la	ip period irge mode	, , , ,
FW Version:V2.20 [2024-0	Auto Detect OP 08-21 10:36:42		Port3[7:4] sink ability la	arge mode	>
			Pass	/Fail/Limit: 0/0/0	
[2024-11-11 17:29:13] Select Chip: SH79F: [2024-11-11 17:29:13] Writer (Pro06C) con [2024-11-11 17:29:13] Chip Configuration. [2024 11 11 17:29:13] Solot Chip: SH79F:	328 nnected! Firmware V Code:28.0K E2PR	ersion: 2.20	Socket 1 Socket 2	<b>0%</b>	$\bigcirc$
[2024-11-11 17:29:13] Select Chip: SH79F: [2024-11-11 17:29:13] Writer (Pro06C) con [2024-11-11 17:29:41] Programmer's S/N: [2024-11-11 17:29:46] Download flash succ	nnected! Firmware V 25-A5-9B-53-4B-FB		Socket 3	0%	$ \overset{\bigcirc}{\bigcirc}$

Figure 5.1.3.a Download programming parameters to the programmer

### 5.1.4 Execute programming

The programming methods can be divided into two types: 'online programming' and 'offline programming'.

### **Online programming**

In online mode, after connecting the programmer to the chip to be programmed, click 'Auto' to achieve 'online programming'.



ode Language	Operation Help			🄇 Sino Wealth
Blank	Read Verif	fy Auto	Download	Upgrade FW
Load Project	Chip select: SH79F328	Option Name	Value	
	Code Option : 80000000 C1BFFE	3F OP_RST:	P5.2 used as I/O pin	
	Code Checksum : 033D-0000		shortest warm up time	
	CRC16-CCITT :70F8	OP_SCMEN:	Disable SCM	
	CRC8-MAXIM :00	OP_OSCRFB:	500K	
1	Data Checksum : 0000	OP_LVREN: OP_LVRLE:	Enable LVR function 2.1V LVR Level 4	
TA Data	IC Version Mark :0000	OP_LVRLE: OP_SCM:	2.1V LVR Level 4 SCM is valid in warm up period	
		OP P37-P34	Port3[7:4] sink ability large mode	
	Writer: Pro06C V Auto Detect		Port3[3:0] sink ability large mode	
	FW Version:V2.20 [2024-08-21 10:36:4	OP_P33-P30: <	, eneletel entre gening tange interes	>
	Chip Options Control Option	😭 Customize	Pass/Fail/Limit 0	/0/0
Program Report				$\sim$
	29:13] Chip Configuration. Code:28.0	K E2PROM:4.0K	^ Socket 1 0%	
•	29:13] Select Chip: SH79F328			$\cup$
•	29:13] Writer (Pro06C) connected! Firr		Socket 2 0%	$\bigcirc$
	29:13] Chip Configuration. Code:28.0 29:13] Select Chip: SH79F328	K EZPROW:4.0K	Socket 2 U%	
•	29:13] Writer (Pro06C) connected! Firr	mware Version: 2.20		$\bigcirc$
•	29:41] Programmer's S/N: 25-A5-9B-5		Socket 3 0%	$\bigcap$
[2024-11-11 17:2	29:46] Download flash success!			
			J	Ŭ,
	-		~	$\frown$

Figure 5.1.4.a Programming nopf files in online mode

#### offline programming

Disconnect the USB, power on the programmer again, and the programmer automatically enters the 'offline programming' mode.

At this time, according to the different configurations of the 'Writer Setting' option during the 'Download', there will be two situations:

- Checked 'Auto Detect program': Once the programmer detects that a new chip has been connected, it will automatically start programming.
- Checked 'Use Start-Key to program': When the programmer detects that a new chip has been connected, it will not directly start programming. It will only start programming when the "Start Key" is pressed.



👃 SinoWealth Prog	rammer - Advanc	e Mode - [Read Only	y]			-	- 🗆 X
Mode Language	Operation Help	)				•	🗊 Sino Wealth
Blank	Rea	ad 🖹 🖌	Verify	Auto	Downlo	ad Ewa	Upgrade FW
Load Project	Socket Setting Socket 1 Socket 2 Socket 3 Socket 4		Option Option	Writer Setting Use Start- Auto Deter Match mat	Key to program ct program	Power Source S <ul> <li>3.3V</li> <li>External(Targ</li> <li>Use ResetPi</li> </ul> <li>Power on time: <ul> <li>5 ms</li> <li>Writer Port</li> </ul></li>	5V get board)
	Chip Option	s 🔜 Control Optio	n 🚼 Customiz	e	Pa	ss/Fail/Limit: 0/0/0	
[2024-11-11 17:2 [2024-11-11 17:2 [2024-11-11 17:2 [2024-11-11 17:2 [2024-11-11 17:2 [2024-11-11 17:2	29:13] Select Cf 29:13] Writer (P 29:13] Chip Con 29:13] Select Cf 29:13] Writer (P 29:13] Writer (P 29:41] Program	ro06C) connected figuration. Code:2 nip: SH79F328 ro06C) connected mer's S/N: 25-A5-8	! Firmware Vers 28.0K E2PROM ! Firmware Vers	ion: 2.20 I:4.0K ion: 2.20	Socket 1 Socket 2 Socket 3	0% 0%	
<				>	Socket 4	0%	$-\bigcirc$

Figure 5.1.4.b Programming nopf files in offline mode



### 5.2 Configure on the ProWriter UI directly and

### program to the chip

### 5.2.1 Chip Name Configuration

•	rammer - Advance Mode		- 0
Mode Language		/erify Auto	Sino Weal
Load Project     Save Project	Chip select         (1)         SH79F32           Code Option         :80000000 C1B	OP RST P5 21	e e nin Oli se besu
CODE Code	Code Checksum       : 033D-0000         CRC16-CCITT       : 70F8         CRC8-MAXIM       : 00         Data Checksum       : 0000         IC Version Mark       : 0000         Writer:       Pro06C       Auto I	Chip List Search: SH79F328 SH79F3281 SH79F3281A	Display Option (2)
	FW Version:V2.20 [2024-08-21 10:3]       Image: Chip Options	SH79F3283 SH79F3283A SH79F3284 SH79F3285 SH79F328A SH79F329A (3)	=
[2024-11-11 17:: [2024-11-11 17:: [2024-11-11 17:: [2024-11-11 17::	33:45] Chip Configuration. Code:20 33:45] Select Chip: SH79F328 33:45] Writer (Pro06C) connected! 33:45] Auto detectd devices: Pro06 33:45] Switch to: Pro06C	SH79F6413 SH79F642 SH79F6421	POM Size: 28672 x 8 (4) E2PROM Size: 4096 x 8 Supported Writers: Pro06B Pro06C (5) SinoLink SinoLinkPro SinoLinkPlus
<		ОК	Cancel

Figure 5.2.1.a Chip Name Configuration

- (2) Area is the flash type selection area.
- (3) Area displays all currently supported MCU types. If there are no required types, please update to the latest version of ProWriter software.
- (4) Area displays the ROM and E2PROM sizes of the currently selected MCU.
- (5) Area displays all programmer that support the current chip.



### 5.2.2 Channel (socket) setting

Pro06C supports up to 4 programming channels at the same time, and users can check it according to actual needs.

👃 SinoWealth Prog	rammer - Advance I	Mode				-	- 🗆 X
Mode Language	Operation Help					(	🔊 Sino Wealth
Blank	<b>Read</b>	× Werify	/	Auto	Downloa	ad Ew1	Upgrade FW
Load Project Save Project Code Code Data	Socket Setting Socket 1 Socket 2 Socket 3 Socket 4 All Memory Code-Sectors	BootROM	tion	○ Auto Detec □ Match mac Customer pas ○ Old: 00-00	Key to program at program thine	Power Source So	5V get board)
	Chip Options	Control Option	Customize		Pas	s/Fail/Limit: 0/0/0	
[2024-11-11 17: [2024-11-11 17: [2024-11-11 17:	33:45] Select Chip 33:45] Writer (Pro	06C) connected! Firm td devices: Pro06C			Socket 1 Socket 2 Socket 3 Socket 4	0%	

Figure 5.2.2.a Socket setting and display

#### 5.2.3 Configure 'Power' and 'Power on time'

Configure the power supply for the MCU to be programmed during the programming process. The default value for 'Power on time' is 6ms.



Blank	Read	Verify	Auto Dow	mload Upgrade FW
Load Project     Save Project     Code     Data	Socket Setting Socket 1 Socket 2 Socket 3 Socket 4 All Memory E2PROM Code-Sectors	Auto Program Option  Erase  Program  Verify  Security Option  BootROM Sector select	Writer Setting  Use Start-Key to program Auto Detect program Match machine Customer password Old: 00-00-00-00-00 New: 00-00-00-00-00	Power Source Select            ⓐ 3.3V          ⑤ 5V         External(Target board)         □ Use ResetPin         Power on time:       Default         ⑤ ms       Auto Scan         Writer Port       SWE
Program Report	Chip Options	Control Option 💽 Customi	ze	Pass/Fail/Limit 0/0/0
2024-11-11 17		uration. Code:28.0K E2PRO	M:4.0K ^ Socket 1	0%
2024-11-11 17	and the second	SH 79F328 )6C) connected! Firmware Ver d devices: Pro06C	sion: 2.20	0%
2024-11-11 17 2024-11-11 17	:33:45] Auto detecto :33:45] Switch to: Pi			

Figure 5.2.3.a 'Power' setting

### 5.2.4 Configure programming interface

The programming interfaces supported by different MCU models vary, and users can configure them according to their actual needs. Some chips only support one interface, so there is no need to configure it.



Diash		Verify	Auto		EW1	Unanada D
Blank	Read	Verify	Auto	Downloa	d Ewil	Upgrade FV
Load Project	Socket Setting	Auto Program Option	Writer Setting		Power Source Se	lect
Save Project	Socket 1	✓ Erase	Use Start-Key to	program	● 3.3V ○ 5	V
Save Project	Socket 2	Program	O Auto Detect prog	gram	O External(Targe	et board)
	Socket 3	⊡ Verify			Use ResetPin	
Code	Socket 4	Security Option	Option			
Data			Customer passwor	d	Power on time:	Default
	All Memory		Old: 00-00-00-0	<u> </u>	5 ms v	Auto Scar
	E2PROM	BootROM			Writer Port	SWE
	Code-Sectors	Sector select	New: 00-00-00-0	0-00-00	-	
	Chip Options	Control Option 💽 Customize	e	Pass	/Fail/Limit: 0/0/0	
				Pass	/Fail/Limit: 0/0/0	
024-11-11 17	:33:45] Chip Config	uration. Code:28.0K E2PROM			/Fail/Limit: 0/0/0	-C
024-11-11 17 024-11-11 17	:33:45] Chip Config :33:45] Select Chip	uration. Code:28.0K E2PROM : SH79F328	:4.0K ^ Sock			C
024-11-11 17 024-11-11 17 024-11-11 17	:33:45] Chip Config :33:45] Select Chip	uration. Code:28.0K E2PROM : SH79F328 06C) connected! Firmware Versi	:4.0K ^ Sock	et 1		C
024-11-11 17 024-11-11 17 024-11-11 17 024-11-11 17 024-11-11 17	:33:45] Chip Config :33:45] Select Chip :33:45] Writer (Pro	uration. Code:28.0K E2PROM : SH79F328 D6C) connected! Firmware Versi d devices: Pro06C	:4.0K • Sock	et 1	0%	C
024-11-11 17 024-11-11 17 024-11-11 17 024-11-11 17 024-11-11 17	:33:45] Chip Config :33:45] Select Chip :33:45] Writer (Prof :33:45] Auto detect	uration. Code:28.0K E2PROM : SH79F328 D6C) connected! Firmware Versi d devices: Pro06C	:4.0K • Sock	et 1	0%	
024-11-11 17 024-11-11 17 024-11-11 17	:33:45] Chip Config :33:45] Select Chip :33:45] Writer (Prof :33:45] Auto detect	uration. Code:28.0K E2PROM : SH79F328 D6C) connected! Firmware Versi d devices: Pro06C	:4.0K Sock	et 1	0%	

Figure 5.2.4.a 'Writer Port' setting

### 5.2.5 Configure 'Use RESETpin'

If the user needs to use the RESET pin to enter the programming mode, they can check "Use RESETpin ".



👢 SinoWealth Prog	rammer - Advance M	ode			-	- 🗆 X
Mode Language	Operation Help					🗊 Sino Wealth
Blank	Read	Verify	Auto	Downlo	ad	Upgrade FW
Load Project     Save Project     Code     Code     Data	Socket Setting Socket 1 Socket 2 Socket 3 Socket 4 All Memory E2PROM Code-Sectors	Auto Program Option Erase Program Verify Security Option BootROM Sector select	O Auto Dete Match ma Customer pa	Key to program ct program chine	Power Source S <ul> <li>3.3V</li> <li>External(Targ</li> <li>Use ResetPi</li> <li>Power on time:</li> <li>5 ms</li> <li>Writer Port</li> </ul>	5V get board)
	Chip Options	Control Option 💽 Customize	e	Pas	s/Fail/Limit: 0/0/0	
Program Report			1.014			$\frown$
[2024-11-11 17:	33:45] Select Chip:	ration. Code:28.0K E2PROM SH79F328 6C) connected! Firmware Versi		Socket 1	0%	$-\bigcirc$
[2024-11-11 17:	33:45] Auto detecto 33:45] Switch to: Pr	devices: Pro06C		Socket 2	0%	$-\bigcirc$
				Socket 3	0%	$-\bigcirc$
<			>	Socket 4	0%	-

Figure 5.2.5.a 'Use RESETpin ' setting

### 5.2.6 Configure the flash block to be programmed

The area to be programmed corresponds to the block in the target MCU flash. Users should check and configure according to their actual needs.



	Operation Help				SI SI	no Wealt
Blank	Read	Verify	Auto	Download		ograde FV
Load Project	Socket Setting	Auto Program Option	Writer Setting		Power Source Select	
Save Project	Socket 1	Erase	● Use Start-K	ey to program	● 3.3V ○ 5V	
	Socket 2	Program	O Auto Detect	t program	O External(Target bo	oard)
Code	Socket 3	Verify	Match mac	hine	Use ResetPin	
	Socket 4 Security Option		Match mach	line	Power on time:	Default
Te Data	All Memory		Customer pas	sword	5 ms v A	uto Scar
	E2PROM BootROM		Old: 00-00	-00-00-00	Writer Port: SWI	-
	Code-Sectors	Sector select	New: 00-00	-00-00-00	Writer Port. Swi	- `
	Chip Options	Control Option 💽 Custom	ize	Pass	/Fail/Limit 0/0/0	
rogram Report 2024-11-11 17:	33:45] Chip Config	uration. Code:28.0K E2PRO	M:4.0K	Socket 1	0%	C
0004 11 11 17.	33:45] Select Chip:					
		d devices: Pro06C		Socket 2	0%	C
2024-11-11 17:	33:45 Auto detect					
2024-11-11 17: 2024-11-11 17:	33:45] Auto detecto 33:45] Switch to: Pr	ro06C				
2024-11-11 17: 2024-11-11 17:		ro06C		Socket 3	0%	C
2024-11-11 17: 2024-11-11 17:		ro06C	ſ	Socket 3	0%	С

Figure 5.2.6.a Configure the flash block to be programmed

#### 5.2.7 Custom Security

Optional configuration items. Please note that you can only set the 'Custom Password' after checking the 'Security' option under the 'Auto Program Option' column.



	1			Ewd
Blank	Read	Verify	Auto Dov	vnload Upgrade F
Load Projec	Socket Setting	Auto Program Option	Writer Setting	Power Source Select
Save Projec	Socket 1	Erase	Use Start-Key to program	● 3.3V ○ 5V
Save Projec	Socket 2	Program	O Auto Detect program	O External(Target board)
0.1	Socket 3	☑ Verify		Use ResetPin
Code	Socket 4	Security Option	Match machine	
Data			Customer password	Deldat
	All Memory	BootROM	Old: 00-00-00-00-00	5 ms v Auto Sca
	Code-Sectors		New: 00-00-00-00-00-00	Writer Port SWE
	Code-Sectors	Sector select	New. 00-00-00-00-00	
	Chip Options	Control Option Custor	mize	Pass/Fail/Limit: 0/0/0
ogram Report	7:22:451 Chin Config	uration Code:28 0K E2DD		
024-11-11 1	7:33:45] Chip Config 7:33:45] Select Chip:	uration. Code:28.0K E2PR	OM:4.0K ^ Socket 1	0%
024-11-11 1 024-11-11 1	7:33:45] Select Chip:			0%
)24-11-11 1 )24-11-11 1 )24-11-11 1 )24-11-11 1	7:33:45] Select Chip: 7:33:45] Writer (Pro 7:33:45] Auto detect	: SH79F328 06C) connected! Firmware Vo d devices: Pro06C		0%
)24-11-11 1 )24-11-11 1 )24-11-11 1 )24-11-11 1	7:33:45] Select Chip: 7:33:45] Writer (Pro	: SH79F328 06C) connected! Firmware Vo d devices: Pro06C	ersion: 2.20	
)24-11-11 1 )24-11-11 1 )24-11-11 1 )24-11-11 1	7:33:45] Select Chip: 7:33:45] Writer (Pro 7:33:45] Auto detect	: SH79F328 06C) connected! Firmware Vo d devices: Pro06C	ersion: 2.20	
)24-11-11 1 )24-11-11 1 )24-11-11 1 )24-11-11 1	7:33:45] Select Chip: 7:33:45] Writer (Pro 7:33:45] Auto detect	: SH79F328 06C) connected! Firmware Vo d devices: Pro06C	ersion: 2.20	0%

Figure 5.2.7.a Configure 'Custom Security'

### 5.2.8 Configure customer information

Optional configuration items. Set customer identification code (CID), serial number (SN), and programming limit information.



	Operation Help					🌎 Sino Wealt
× Blank	Read	Veri	fy	Auto	Download	Upgrade FW
Load Project	CID		S/N		Others	Program Limit:
Save Project	Value: 0x0000	0000	Value: 0x00	000000	Agent ID	1000
J Save Project	Format HEX 、	Step: +0	Format HEX	✓ Step: +0	More	
Code	Anti Transshipmer	t Code			Check befor	e burning:
na Data	Burn Mode	Normal 🗸 🗸	Source: SCAN	$\sim$	Code Che	ecksum
		Ant	icode len: 1 🗸 ~	32 ~	S/N	, ckoum
	Chip Options	Control Option	😴 Customize		Pass/Fail/Limit: 0 /	1 / 1000
Program Report	26:16] Chip Config	uration. Code:28.0	K E2PROM:4.0K	↑ Socket 1	0%	$\cap$
2024-11-13 09:	26:16] Select Chip:					
2024-11-13 09:						$\sim$
2024-11-13 09: 2024-11-13 09:	26:16] Writer (Proc 26:16] Auto detecte		mware Version: 2.2	20 Socket 2	0%	
2024-11-13 09: 2024-11-13 09: 2024-11-13 09:	26:16] Writer (Pro	d devices: Pro06C	mware Version: 2.2		0%	C
2024-11-13 09: 2024-11-13 09: 2024-11-13 09:	26:16] Writer (Proc 26:16] Auto detect	d devices: Pro06C	mware Version: 2.2		0%	— <u>C</u>
2024-11-13 09: 2024-11-13 09: 2024-11-13 09:	26:16] Writer (Proc 26:16] Auto detect	d devices: Pro06C	mware Version: 2.2	Socket 2		

Figure 5.2.8.a Configure customer information

#### 5.2.9 Loading Code and Loading Data

Optional configuration items. Set customer identification code (CID), serial number (SN), and programming limit information.

#### Loading through 'Load Project'

It can support loading hex or bin files. For 32-bit ARM core MCU, the hex file loaded here can support multiple blocks, such as a hex file that includes both Main block, Customer block, and E2PROM block codes.



Blank       Read       Verify       Auto       Download       Upgrade File         Image: Code       Image: Code <t< th=""><th>- 🗆 ×</th></t<>	- 🗆 ×						
Mode Language	Operation Help	)					≶ Sino Wealth
	1 Rea	ad X	erify	Auto	D 🛃	ownload	Upgrade FW
Load Project		his PC → Desktop → ProWriter Test	ٽ ~	Search ProWriter Test		Onin	^
💾 Save Project	Organize 👻 New fold	ler					
	<ul> <li>OneDrive</li> </ul>	Name	Date modified	Туре	Size		
Code	OneDrive - Perso	🎱 test.hex	5/24/2023 10:40 /	AM HEX File	65		
Code	Code          • Open            • Open						
Dete Data					-		
	Downloads					ability large mode	
						ability large mode	~
							>
							,
						Pase/Fail/Limit: 0	/1/1000
						r usar un en ne. o	
Program Report	- OS (F:)						
	Network Y	<	Suppo	rts hex and bin fil	e formats >	0%	$\bigcirc$
	Eiler	name: test.hex	~	Project files(*.nopf;*.c	opf;*.hex;* ~	0 %	(
				Open	Cancel		$\bigcirc$
			0		5 red -		$\bigcirc$
			G	5	OCKET Z	0%	
2024-11-13 09:2	26:16] Switch to	C Pro06C					$\bigcirc$
							$\bigcirc$
				s	ocket 3	0%	
							$\bigcirc$
				~			$\bigcirc$
<				> S	ocket 4	0%	
							$\bigcirc$

Figure 5.2.9.a Loading through 'Load Project'

#### Loading through 'Load Code' or 'Load Data' Directly

Load the code or data to be programmed. Please refer to Chapter 4.4 of this article for details.



		Norify	<b>.</b>	1 л	EW1	
Blank	T Read	Verify	Auto	Downloa	ad Upgra	de FV
Load Project	Socket Setting	Auto Program Option	Writer Setting	,	Power Source Select	
	Socket 1	⊡ Erase	Use Start-	Key to program	● 3.3V ○ 5V	
Save Project	Socket 2	Program	O Auto Dete		O External(Target board	)
	Socket 3	Verify			Use ResetPin	
Code	Socket 4	Security Option	Match machine			
Ter Data		Bloecanty option	Customer pa	seword	Power on time: Def	ault
	All Memory			0.00000000	5 ms v Auto	Scan
	E2PROM	BootROM	Old: 00-0	0-00-00-00	Writer Port SWE	
	Code-Sectors	Sector select	New: 00-0	0-00-00-00	White Pole	
	Chip Options	Control Option 💽 Customi	ze	Pass/	Fail/Limit: 0 / 1 / 1000	
rogram Report 2024-11-13 09	:26:16] Chip Config	uration. Code:28.0K E2PRO	M:4.0K	Socket 1	0%	$\frown$
	:26:16] Select Chip				(	
		06C) connected! Firmware Ver	sion: 2.20			$\tilde{}$
	:26:16] Auto detect :26:16] Switch to: P			Socket 2	0%	
	:49:05] Auto detect				```````````````````````````````````````	$\leq$
	:49:05] Switch to: P			Socket 3	0%	
	118 111 111				(	

Figure 5.2.9.b Programming examples\_ 'Code' & 'Data'

### 5.2.10 Automatic programming settings

Configure specific operations during the programming process (such as 'erase', 'program', 'verify', and 'security'). Please refer to Chapter 4.2.4 of this article for details.



ode Language	Operation Help				6	Sino Wealth
Blank	Read	Verify	Auto	Downloa	d FW1	Upgrade FW
Load Project     Save Project     Code     Data	Socket Setting Socket 1 Socket 2 Socket 3 Socket 4 All Memory E2PROM Code-Sectors	Auto Program Option  Erase Program Verify Security Option BootROM Sector select	O Auto Dete	Key to program ct program chine	Power Source Sel	V et board)
	Chip Options	Control Option 💽 Custo	mize	Pass/F	ail/Limit: 0 / 1 / 1000	
2024-11-13 09:	26:16] Select Chip:	uration. Code:28.0K E2PR SH79F328 06C) connected! Firmware V		Socket 1	0%	-C
2024-11-13 09: 2024-11-13 09:	26:16] Auto detecte 26:16] Switch to: P	d devices: Pro06C ro06C		Socket 2	0%	$-\mathbb{C}$
	49:05] Auto detect 49:05] Switch to: P			Socket 3	0%	-C
			>	Socket 4	0%	$\cap$

Figure 5.2.10.a Configuration of programming steps and code encryption

#### 5.2.11 Download parameters

Download the programming configuration parameter information to the programmer. Please refer to Chapter 4.2.5 of this article for details.



de Language	Operation Help			Sino Wealth
Blank	Read	Verify	Auto Downl	oad Ew12 Upgrade FW
Load Project	Socket Setting ☑ Socket 1	Auto Program Option	Writer Setting	Power Source Select
Save Project	Socket 2	Program	<ul> <li>Use Start-Key to program</li> <li>Auto Detect program</li> </ul>	External(Target board)
Code	□ Socket 3     ☑ Verify       □ Socket 4     ☑ Security     Option		Match machine	Use ResetPin
Data			Customer password Old: 00-00-00-00-00	Power on time: Default 5 ms v Auto Scan
	E2PROM	BootROM Sector select	New: 00-00-00-00-00-00	Writer Port: SWE ~
	Chip Options	Control Option 💽 Customi	ze Pas	s/Fail/Limit: 0 / 1 / 1000
rogram Report	26:161 Chip Config	uration. Code:28.0K E2PRO	M:4.0K A Socket 1	0%
024-11-13 09	26:16] Select Chip:			
024-11-13 09	:26:16] Auto detecte :26:16] Switch to: P	d devices: Pro06C	Socket 2	C
	:49:05] Auto detect :49:05] Switch to: P		Socket 3	0%

Figure 5.2.11.a Download parameters

#### 5.2.12 Execute programming

The programming methods can be divided into two types: 'online programming' and 'offline programming'.

#### **Online programming**

Online mode refers to the burner being connected to the upper computer through USB. When in online mode, the ProWriter UI will display information related to the programmer.



	Operation Help			Sino Wealt
Blank	Read K	erify Auto	Download	Upgrade FV
Load Project	Chip select SH79F32	8 Option Name	Value	
Save Project	Code Option : 80000000 C1B Code Checksum : 033D-0000	OP_WMT:	P5.2 used as I/O pin shortest warm up time	
Code	CRC16-CCITT :70F8 CRC8-MAXIM :00	OP_SCMEN: OP_OSCRFB:	Disable SCM 500K	
na Data	Data Checksum : 0000 IC Version Mark : 0000	OP_LVREN: OP_LVRLE:	Enable LVR function 2.1V LVR Level 4	
	Writer: Pro06C V Auto [ FW Version:V2.20 [2024-08-21 10:3	OP_P33-P30:	SCM is valid in warm u Port3[7:4] sink ability la Port3[3:0] sink ability la	ge mode
	Chip Options Control Option	Customize	Pass/F	ail/Limit: 0 / 1 / 1000
<sup>o</sup> rogram Report	Chip Options Control Option	😭 Customize	Pass/F	ail/Limit 0 / 1 / 1000
[2024-11-13 09:	26:16] Chip Configuration. Code:28		A Socket 1	ai//Limit 0/1/1000
2024-11-13 09: 2024-11-13 09:	26:16] Chip Configuration. Code:28 26:16] Select Chip: SH79F328	3.0K E2PROM:4.0K	_	$\sim$
[2024-11-13 09: [2024-11-13 09: [2024-11-13 09:	26:16] Chip Configuration. Code:28 26:16] Select Chip: SH79F328 26:16] Writer (Pro06C) connected! I	3.0K E2PROM:4.0K Firmware Version: 2.20	A Socket 1	0%
[2024-11-13 09: [2024-11-13 09: [2024-11-13 09:	26:16] Chip Configuration. Code:28 26:16] Select Chip: SH79F328 26:16] Writer (Pro06C) connected! I 26:16] Auto detectd devices: Pro06	3.0K E2PROM:4.0K Firmware Version: 2.20	_	$\sim$
2024-11-13 09: 2024-11-13 09: 2024-11-13 09: 2024-11-13 09: 2024-11-13 09:	26:16] Chip Configuration. Code:28 26:16] Select Chip: SH79F328 26:16] Writer (Pro06C) connected! I 26:16] Auto detectd devices: Pro06 26:16] Switch to: Pro06C	3.0K E2PROM:4.0K Firmware Version: 2.20	A Socket 1	0%
2024-11-13 09: 2024-11-13 09: 2024-11-13 09: 2024-11-13 09: 2024-11-13 09: 2024-11-13 09: 2024-11-13 09:	26:16] Chip Configuration. Code:28 26:16] Select Chip: SH79F328 26:16] Writer (Pro06C) connected! I 26:16] Auto detectd devices: Pro06	3.0K E2PROM:4.0K Firmware Version: 2.20	A Socket 1	0%
2024-11-13 09: 2024-11-13 09: 2024-11-13 09: 2024-11-13 09: 2024-11-13 09: 2024-11-13 09: 2024-11-13 09:	26:16] Chip Configuration. Code:28 26:16] Select Chip: SH79F328 26:16] Writer (Pro06C) connected! I 26:16] Auto detectd devices: Pro06 26:16] Switch to: Pro06C 49:05] Auto detectd devices: Pro06	3.0K E2PROM:4.0K Firmware Version: 2.20	Socket 1     Socket 2	0% C

Figure 5.2.12.a Programmer Device info display

In online mode, after connecting the programmer to the chip to be programmed, click 'Auto' to achieve 'online programming'.



	grammer - Advance N	lode		-	
ode Language	Operation Help			•	Sino Wealth
Blank	Read	Verify	Auto	Download	Upgrade FW
Load Project	Socket Setting	Auto Program Option	Writer Setting	Power Source Se	lect
Denie Denie at	Socket 1	Erase	Use Start-Key to progr	am (03.3V ()5	v
Save Project	Socket 2	Program	O Auto Detect program	O External(Targe	et board)
	Socket 3	✓ Verify	C I		
ODE Code	Socket 4		Match machine	Use ResetPin	
ere Data	Socket 4	Security Option		Power on time:	Default
ete Data	All Memory		Customer password	5 ms v	Auto Scan
	E2PROM	BootROM	Old: 00-00-00-00-0		The second secon
	Code-Sectors	Sector select	New: 00-00-00-00-00-0		SWE ~
	Chip Options	Control Option 💽 Customiz	ze	Pass/Fail/Limit 0/1/1000	i
Program Report					_
[2024-11-13 09:	26:16] Chip Config	uration. Code:28.0K E2PROM	A:4.0K ^ Socket 1	0%	$\bigcap$
	26:16] Select Chip:				
		06C) connected! Firmware Vers	sion: 2.20 Socket 2		$\cap$
	26:16] Auto detect		Socket 2	U %	_ (
	49:05] Auto detecto				$\sim$
A REAL PROPERTY AND A REAL PROPERTY AND A	49:05] Switch to: P		Socket 3	0%	(
			~		$\cap$
<			Socket 4	0%	

Figure 5.2.12.b Programming in online mode

#### offline programming

Disconnect the USB, power on the programmer again, and the programmer automatically enters the 'offline programming' mode.

At this time, according to the different configurations of the 'Writer Setting' option during the 'Download', there will be two situations:

- Checked 'Auto Detect program': Once the programmer detects that a new chip has been connected, it will automatically start programming.
- Checked 'Use Start-Key to program': When the programmer detects that a new chip has been connected, it will not directly start programming. It will only start programming when the "Start Key" is pressed.



I SinoWealth Prog	rammer - Advance M	lode				-	
Mode Language	Operation Help					•	🔊 Sino Wealth
Blank	Read	× iii Ver	ify	Auto	Downlo	ad Ew1	Upgrade FW
Load Project     Save Project     Code     Code     Data	Socket Setting Socket 1 Socket 2 Socket 3 Socket 4 All Memory E2PROM Code-Sectors	BootROM	Dption	O Auto Deter Match mad Customer par Old: 00-0	Key to program of program chine	Power Source Se ● 3.3V O S ● External(Targ □ Use ResetPin Power on time: 5 ms ✓ Writer Port	5V Jet board)
	Chip Options	Control Option	🚼 Customize		Pass	Fail/Limit: 0 / 1 / 100	)
[2024-11-13 09:2	26:16] Chip Config 26:16] Select Chip	SH79F328			Socket 1	0%	$-\bigcirc$
[2024-11-13 09:2 [2024-11-13 09:2 [2024-11-13 09:2	26:16] Writer (Prof 26:16] Auto detect 26:16] Switch to: P 49:05] Auto detect 49:05] Switch to: P	d devices: Pro06C ro06C d devices: Pro06C		n: 2.20	Socket 2 Socket 3	0%	
<		58005)Z		>	Socket 4	0%	

Figure 5.2.12.c Programming in offline mode



#### Chapter 6 Example of creating a nopf file

### 6.1 Configure parameters

#### 6.1.1 Chip Name Configuration

de Language	Operation Help	2					🌎 Sino Wealt
Blank	1 Rea	ad E	Verify	Auto		Download	EW1 Upgrade FV
Load Project	Chip select	(1) <b>SH79F</b> 3			Value		
Save Project	Code Option Code Checksur		B Chip Selection	F	25.2 used as	e I/O nin	×
Code	CRC16-CCITT CRC8-MAXIM Data Checksun	:70F8 :00 n :0000	Chip List Search:			Display Option (	2) Sbit Flash
a Data	IC Version Mark	: 0000	SH79F328 SH79F3281		^		
		006C ~ Auto	SH79F3283 SH79F3283A				>
	Chip Option	s 🚼 Control Optio	SH79F3284 SH79F3285 SH79F328A SH79F329	(3)			
rogram Report			SH79F329A SH79F64				
024-11-11 17: 024-11-11 17: 024-11-11 17:	33:45] Select Cl 33:45] Writer (P	Pro06C) connected ectd devices: Pro0	SH79F6413 SH79F642 SH79F6421			ROM Size: 2867. E2PROM Size: 4 Supported Writer Pro06B Pro06C (5) SinoLink SinoLinkPro SinoLinkPlus	096 x 8 s:
			SH79F6442		~		

Figure 6.1.1.a Chip Name Configuration

- (2)Area is the flash type selection area.
- (3)Area displays all currently supported MCU types. If there are no required types, please update to the latest version of ProWriter software.
- (4) Area displays the ROM and E2PROM sizes of the currently selected MCU.
- (5) Area displays all programmer that support the current chip.



### 6.1.2 Channel (socket) setting

Pro06C supports up to 4 programming channels at the same time, and users can check it according to actual needs.

👃 SinoWealth Prog	rammer - Advance N	1ode		- 🗆 X
Mode Language	Operation Help			🄝 Sino Wealth
Blank	Read	Verify	Auto	Download FW
Load Project Save Project Code Data	Socket Setting Socket 1 Socket 2 Socket 3 Socket 4	Auto Program Option Program Verify Security Option BootROM Sector select	Writer Setting Use Start-Key to progr Auto Detect program Match machine Customer password Old: 00-00-00-00-00-00 New: 00-00-00-00-00	0 External(Target board) Cuse ResetPin Power on time: Default 5 ms  Auto Scan Writer Port: SWE
	Chip Options	Control Option 💽 Customize	e	Pass/Fail/Limit: 0 / 1 / 1000
[2024-11-13 09:: [2024-11-13 09:: [2024-11-13 09:: [2024-11-13 09:: [2024-11-13 09:: [2024-11-13 09::	26:16] Select Chip:	06C) connected! Firmware Versi d devices: Pro06C ro06C d devices: Pro06C		0%

Figure 6.1.2.a Socket setting

#### 6.1.3 Configure 'Power' and 'Power on time'

Configure the power supply for the MCU to be programmed during the programming process. The default value for 'Power on time' is 6ms.



🖡 SinoWealth Pro	grammer - Advance M	ode				
Mode Language	Operation Help				<b></b>	🕽 Sino Wealth
Blank	Read	Verify	Auto	Downlo	ad Fw1	Upgrade FW
Load Project Save Project Code Code Data	Socket Setting Socket 1 Socket 2 Socket 3 Socket 4 All Memory E2PROM Code-Sectors	Auto Program Option Erase Program Verify Security Option BootROM Sector select	O Auto Dete	Key to program ct program chine	Power Source Se	<b>SV</b> et board)
	Chip Options	Control Option 🔂 Custon	nize	Pass	/Fail/Limit: 0 / 1 / 1000	)
[2024-11-13 09 [2024-11-13 09 [2024-11-13 09 [2024-11-13 09 [2024-11-13 09	26:16] Select Chip:	6C) connected! Firmware Ve I devices: Pro06C ro06C I devices: Pro06C		Socket 1 Socket 2 Socket 3	0% 0%	
<			×	Socket 4	0%	$-\widecheck{O}$

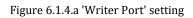
Figure 6.1.3.a 'Power' setting

### 6.1.4 Configure programming interface

The programming interfaces supported by different MCU models vary, and users can configure them according to their actual needs. Some chips only support one interface, so there is no need to configure it.



the Language	Operation Help	1				Sino Wealt
Blank	<b>1</b> Read	Verify	Auto	Downloa	id Ewil	Upgrade FW
Load Project	Socket Setting	Auto Program Option	Writer Setting		Power Source Se	elect
Save Project	Socket 1	Erase	● Use Start-K	ey to program	● 3.3V ○ 5	δV
Save Project	Socket 2	Program	O Auto Detec	tprogram	O External(Targ	et board)
	Socket 3	Verify			Use ResetPir	
Code	Socket 4	Security Option	Match macl	hine		
Ta Data			Customer pas	sword	Power on time:	Default
	All Memory			-00-00-00-00	6 ms 🗸 🗸	Auto Scan
	E2PROM	BootROM	Old: 00-00	-00-00-00-00	Writer Port	JTAG ~
	Code-Sectors	Code-Sectors Sector select		New: 00-00-00-00-00		
	Chip Options	Control Option 💽 Customi	ze	Pass/	Fail/Limit: 0 / 1 / 1000	D
	1 1 0	uration. Code:28.0K E2PROM	M:4.0K	Socket 1	0%	C
	26:16] Select Chip: 26:16] Writer (Prof	SH79F328 )6C) connected! Firmware Vers	sion: 2.20			$\cup$
	26:16] Auto detecto			Socket 2	0%	$\cap$
	26:16] Switch to: Pr		Г			-
2021 11 10 00.	49:05] Auto detecto	devices: Pro06C				
	49:05] Switch to: Pr	r006C	-	Socket 3	0%	(
2024-11-13 09:						$\cup$
2024-11-13 09:			~ '			



### 6.1.5 Configure 'Use RESETpin'

If the user needs to use the RESET pin to enter the programming mode, they can check "Use RESETpin ".



	Operation Help			Sino Wealt
Blank	Read	Verify	Auto	Download Ewilk Upgrade FV
Load Project	Socket Setting	Auto Program Option	Writer Setting	Power Source Select
Save Project	Socket 1	Erase	Use Start-Key to progr	ram ● 3.3V ○ 5V
Save Project	Socket 2	Program	O Auto Detect program	O External(Target board)
Code	□ Socket 3 □ Socket 4	✓ Verify ✓ Security Option	Match machine	Use ResetPin
Data	- SUCKEL4	Security Option		Power on time: Default
Data	All Memory		Customer password	6 ms 🗸 Auto Scar
	E2PROM	BootROM	Old: 00-00-00-00-0	
	Code-Sectors	Sector select	New: 00-00-00-00-00-0	Writer Port JTAG V
	Chip Options	Control Option 💽 Custom	ize	Pass/Fail/Limit: 0 / 1 / 1000
Program Report	Mar Aar			-
	1 1 0	ration. Code:28.0K E2PRO	M:4.0K ^ Socket 1	0%
	26:16] Select Chip:			
	26:16] Writer (Prou 26:16] Auto detecto	6C) connected! Firmware Ver	Socket 2	0%
	26:16] Switch to: Pr		Obtrot 2	(
2024-11-13 09:	49:05] Auto detecto	devices: Pro06C	1	0
2024-11-13 09:	49:05] Switch to: Pr	006C	Socket 3	0%
			<b>J</b>	

Figure 6.1.5.a 'Use RESETpin' setting

#### 6.1.6 Configure the flash block to be programmed

The area to be programmed corresponds to the block in the target MCU flash. Users should check and configure according to their actual needs.

Usually, users need to check 'All Memory'. If it involves programming 'user data', please also check 'E2PROM'.



de Language	Operation Help				•	🕽 Sino Wealtl
Blank	Read	Verify	Auto	Downloa	id Ewil	Upgrade FV
Load Project	Socket Setting	Auto Program Option	Writer Setting		Power Source Se	elect
	Socket 1	✓ Erase	Use Start-I	Key to program	● 3.3V ○!	5V
Save Project	Socket 2	Program	O Auto Deter		O External(Tarc	et board)
	Socket 3	⊡ Verify	0.1110.2.00			
Code	Socket4		Match machine		Use ResetPir	1
Data	Socket4	Security Option			Power on time:	Default
* Data	All Memory		Customer pas	ssword	6 ms v	Auto Scan
	E2PROM	BootROM	Old: 00-0	0-00-00-00-00		and the second se
C	Code-Sectors	Sector select	New: 00-0	0-00-00-00	Writer Port	JTAG v
	Chip Options	Control Option 💽 Custon	nize	Pass/		0
rogram Report	It i					~
		uration. Code:28.0K E2PRC	M:4.0K	Socket 1	0%	_(
	26:16] Select Chip: 26:16] Writer (Pro)	: SH79F328 )6C) connected! Firmware Ve	rsion: 2.20			$\cup$
	26:16] Auto detect		151011. 2.20	Socket 2	0%	$\cap$
	26:16] Switch to: P					-(
2024-11-13 09:	49:05] Auto detect	d devices: Pro06C				$\sim$
2024-11-13 09:	49:05] Switch to: P	ro06C		Socket 3	0%	(
						$\cup$
			~			

Figure 6.1.6.a Configure the flash area to be programmed

#### 6.1.7 Custom Security

Optional configuration items. Please note that you can only set the 'Custom Password' after checking the 'Security' option under the 'Auto Program Option' column.



SinoWealth Prog ode Language			le					- 🗆
Blank		Read	×	erify	Auto	Down	nload	Upgrade FW
Load Project     Save Project     Code     Data	Socket Set Socket 1 Socket 2 Socket 3 Socket 4 All Mem E2P Code-Se	2   2   4   PROM	Auto Program ( Program Verify Security BootROM Security	Option Option	<ul> <li>Auto Dete</li> <li>Match ma</li> <li>Customer pa</li> <li>Old: 00-0</li> </ul>	Key to program ct program chine	Power Source	) 5V Irget board) Pin
	Chip Op	otions 📘	Control Option	Customize		Pa	ss/Fail/Limit: 0 / 1 / 10	000
Program Report 2024-11-13 09: 2024-11-13 09: 2024-11-13 09: 2024-11-13 09: 2024-11-13 09:	26:16] Selec 26:16] Write 26:16] Auto	ct Chip: Sl er (Pro060 detectd d	H79F328 () connected! I evices: Pro06	Firmware Versio		Socket 1 Socket 2	<b>0%</b>	
2024-11-13 09: 2024-11-13 09:				С	~	Socket 3 Socket 4	0%	-Č

Figure 6.1.7.a Configure 'Custom Security'

### 6.1.8 Configure customer information

Optional configuration items. Set customer identification code (CID), serial number (SN), and programming limit information.



ode Langu	age Operation Help	•					ゔ Sino Wealt
× Bla	ik 🚺 Rea	nd 😫 🖌 Ver	ify	Auto	Download	FW4	Upgrade FV
Load Pro	ect		S/N		Ot	hers	Program Limit
Save Pro	Value: 0x00	000000	Value: 0x	0000000		Agent ID	1000
Juverio	Format HEX	✓ Step: +0	Format H	EX ~ Step:	+0	More	
Code	- Anti Transshipm	nent Code			Ch	eck before burni	ng:
Ter Data	Burn Mode	Normal ~	Source: SCAN	$1 \sim 10^{-1}$		Code Checksun	0
		Ant	icode len: 1 🗸	~ 32 ~		S/N	
						CID	
	Chip Options	s 🚼 Control Option	😧 Customize		Pass/Fa	l/Limit: 0 / 1 / 100	0
Program Rep 2024-11-1		figuration. Code:28.0	K E2PROM:4.0	K ^ s	ocket 1	0%	$\mathcal{C}$
	09:26:16] Select Ch	·					
		ro06C) connected! Fin actd devices: Pro06C	mware Version:		ocket 2	0%	$\cap$
	09:26:16] Switch to						-
	09:49:05] Auto dete						$\tilde{\mathbf{C}}$
2024-11-13 2024-11-13	00-40-051 Switch to	Pro06C		s	ocket 3	0%	(
2024-11-13 2024-11-13	09.49.00j Switch to						$\sim$
2024-11-1	03.43.03 Switch to			~			$\frown$

Figure 6.1.8.a Configure customer information

#### 6.1.9 Loading Code and Loading Data

Optional configuration items. Set customer identification code (CID), serial number (SN), and programming limit information.

#### Loading through 'Load Project'

It can support loading hex or bin files. For 32-bit ARM core MCU, the hex file loaded here can support multiple blocks, such as a hex file that includes both Main block, Customer block, and E2PROM block codes.



SinoWealth Prog	rammer - Advance Mode						_	
Mode Language	Operation Help						5	Sino Wealth
Blank	Read	Verify		Auto		)ownload	FW1	Upgrade FW
Load Project	↓ Open     ← → ~ ↑ → This PC → Deskte     Organize ~ New folder     OneDrive ^ Name	p > ProWriter Test	✓ ♂ Se	arch ProWriter Test		/O pin up time		^
CODE Code	OneDrive - Perso     This PC     J 30 Objects     Desktop     Downloads     Music     Pictures     Videos     So (C:)     Local Disk (D:)	the code file or data	5/24/2023 10:40 AM	HEX File		nction 4 warm up per ability large r ability large r	node	×
Program Report [2024-11-13 09:: [2024-11-13 09:: [2024-11-13 09:: [2024-11-13 09::	File name: test.hex	res: Profil6C		nex and bin fil oject files(*.nopf;*.c Open			0%	$\bigcirc$
	(6:16] Switch to: Pro06C			s •	ocket 3 ocket 4		0%	

Figure 6.1.9.a Loading through 'Load Project'

#### Loading through 'Code' or 'Data' Directly

Load the code or data to be programmed. Please refer to Chapter 4.4 of this article for details.



						) Sino Wealtl	
X Blank	Read	Verify	Auto	Downloa	ad	Upgrade FW	
Load Project	Socket Setting	Auto Program Option	Writer Setting		Power Source Se	lect	
	Socket 1	Erase	Use Start-	Use Start-Key to program		● 3.3V ○ 5V	
Save Project	Socket 2			ct program	O External(Target board)		
	Socket 3	Verify					
Code	Socket 4			chine	Use ResetPin		
Ter Data			Customer pa	coword	Power on time:	Default	
					5 ms ~	Auto Scan	
	E2PROM	ROM BootROM		0-00-00-00	Writer Port SWE		
	Code-Sectors Sector select		New: 00-0	0-00-00-00			
	Chip Options	Control Option 💽 Custon	nize	Pass/	Fail/Limit: 0 / 1 / 1000	1	
Program Report 2024-11-13 09	:26:16] Chip Config	uration. Code:28.0K E2PRC	DM:4.0K	Socket 1	0%	$\cap$	
2024-11-13 09	26:16] Select Chip	SH79F328			1.597.54	-	
		06C) connected! Firmware Ve	ersion: 2.20			$\tilde{\circ}$	
	:26:16] Auto detect :26:16] Switch to: P			Socket 2	0%	_ (	
	:49:05] Auto detect					$\sim$	
	:49:05] Switch to: P			Socket 3	0%	$\cap$	

Figure 6.1.9.b Programming examples\_ 'Code' & ' Data'

### 6.1.10 Automatic programming settings

Configure specific operations during the programming process (such as 'erase', 'program', 'verify', and 'security'). Please refer to Chapter 4.2.4 of this article for details.



de Language	Operation Help				¢	🕽 Sino Wealt
Blank	Read	Verify	Auto	Download	FW1	Upgrade FV
Load Project     Save Project     Code     Data	Socket Setting Socket 1 Socket 2 Socket 3 Socket 4 All Memory E2PROM Code-Sectors	Auto Program Option  Erase Program Verify Security Option BootROM Sector select	Writer Setting © Use Start-Ke O Auto Detect Match mach Customer pass Old: 00-00-0 New: 00-00-0	program ine word 00-00-00	Power Source Set         ③ 3.3V       ○ 5         ○ External(Targ         □ Use ResetPir         Power on time:         6 ms         Writer Port	5V jet board)
rogram Report	Chip Options	Control Option 💽 Customi	ze	Pass/Fa	ail/Limit: 0 / 1 / 1000	)
2024-11-13 09:	26:16] Chip Configu 26:16] Select Chip:	Ination. Code:28.0K E2PRO	M:4.0K ^ s	Socket 1	0%	-
2024-11-13 09: 2024-11-13 09: 2024-11-13 09:	26:16] Writer (Pro0 26:16] Auto detecto 26:16] Switch to: Pr	6C) connected! Firmware Ver I devices: Pro06C o06C		Socket 2	0%	-Č
	49:05] Auto detecto 49:05] Switch to: Pr		s	Socket 3	0%	-C
			<b>*</b>	Socket 4		$\tilde{c}$

Figure 6.1.10.a Configuration of programming steps and code encryption



#### 6.2 Save the project as a nopf file

Save the project to generate a nopf file. It can be divided into long-term valid version nopf files and limited time valid version nopf files. This article explains the generation of a 'long-term version nopf file'.

### 6.2.1 Generate long-term valid version nopf file

I SinoWealth	Programmer - Advance Mo	de			- 🗆 X
Mode Langua	age Operation Help				Sino Wealth
<b>Blan</b>	ik Read	Verify	Auto	Download	Upgrade FW
p Load Proje	ect Save			×	
Save Proje	ect Filename:	test1		.nopf ~	3V ○5V kternal(Target board)
Code	保存路径:	D:\		Select the save path	se ResetPin
Dete Data	Project Name:	test		Select the save buth	er on time: Default
Data	Version:	1.0			Auto Scan
	Company:	Sinowealth			r Port JTAG ~
	Author:	a1190	Specify the program	nmer by its SN	
	Password: Set encryption pass	word for nopf file	Assign Program	mer's S/N Read S/N	t 0/1/1000
Program Repo			25-A5-9B-53-4B-FE	3-BA-79-38	$\frown$
[2024-11-13 [2024-11-13		ode Hide Data	Validity pe	eriod Unlimited 🗸	
[2024-11-13 [2024-11-13	To prevent code of t	lata leakage,the generated	Ł	Unlimited 15-Minutes	Õ
[2024-11-13 [2024-11-13	09:2	OK	Car	30-Minutes 60-Minutes 90-Minutes	
	09:49:05] Switch to: Pro	06C		120-Minutes	
			~		
<			>	Socket 4	0%
					$\bigcirc$

Figure 6.2.1.a Generate long-term valid version nopf file

#### • Password

Customers can decide whether to set a 'password' based on their actual needs.

#### • Specify the SN of the programmer

Check 'Assign Programmer's SN' and fill in the serial number of the programmer that needs to be specified in the format.

#### • Hide Code

Users should choose whether to check 'Hide Code' according to their actual



needs.

#### Hide Data

Users should choose whether to check 'Hide Data' according to their actual needs.

#### Note:

1. If the user needs the nopf file to have the "Program Limit" function, please create a limited time valid version of the nopf file.



### Chapter 7 Common Problems and Corresponding

### Solutions

- 1. Pro06C/Pro06B has been powered on and connected to the upper computer through a USB cable, but the ProWriter UI displays "No Writer":
- 1) Check if the USB cable connection is normal.
- Click on "Auto Detect", and if successful, the device name and firmware version information will be displayed.
- 3) Check if the hardware device driver is functioning properly.

#### 2. Program fail:

- 1) Check if the "Socket Setting", "PGM Interface", programming area, etc. are selected correctly.
- 2) Update ProWriter to the latest software version.
- 3) Check if the firmware of the programmer and the library files of the chip have been updated to the latest version.
- 4) Check if the "Power on time" parameter settings are appropriate. You can use the "Auto Scan" method to check. If the external capacitance of the VDD is large, it is recommended to manually modify the "Power on time" parameter for an attempt. After each attempt, it is necessary to manually short-circuit the VDD and GND to discharge.
- 5) Check if there is an external circuit on the IC programming pin. For resistors connected in series on the programming pin, pull-up resistors on the programming pin, or pull-down resistors on the programming pin, it is recommended to follow the maximum value in the "Application Reference" table. For other application circuits, it is recommended to disconnect the circuit before programming. If it cannot be disconnected, it is recommended to programming the chip first before welding.



Parameter		Symbo1	TIN.	TYP.	TAX.	Unit	Condition
<b>D</b>	SWE	R <sub>S</sub>	-	-	47	Ω	
Resistor connected in series	JTAG		-	-	100	Ω	
series	SWD		-	-	100	Ω	
	SWE		3.3	-	-	kΩ	
Pull-up resistor	JTAG	R <sub>PH</sub>	1	-	-	kΩ	
	SWD		1	-	-	kΩ	
	SWE	R <sub>PL</sub>	33	-	-	kΩ	
Pull-down resistor	JTAG		4.7	-	-	kΩ	
	SWD		4.7	-	-	kΩ	
VDD Capacitor		C <sub>VDD</sub>	-	-	1000	uF	
The duration of pressing Key		T <sub>KEY</sub>	200	-	-	mS	
The level of the Key		V <sub>KEY</sub>	GND	-	GND+0.6	v	Active at low level

Figure 7.2.a Application reference table

- 6) Check if there are high-power modules or other modules that may pull lower the VDD level on the board. If so, it is recommended to disconnect them before programming them.
- 7) If there is an external power supply on the board, the RST pin must be used for programming, and the "Use RESET pin enter mode" option on the software UI needs to be checked. For Pro06C/Pro06B, VDDx cannot be connected, otherwise it may damage the programmer. At this time, the detection connection function needs to be disabled (check "Turn off the chip connection detection function" in "Operation" → "Setting").

#### 3. Pro06C/Pro06B detection connection failure:

- If there is an external power supply on the board, the RST pin must be used for programming, and the "Use RESET pin enter mode" option on the software UI needs to be checked. For Pro06C/Pro06B, VDDx cannot be connected, otherwise it may damage the programmer. At this time, the detection connection function needs to be disabled (check "Turn off the chip connection detection function" in "Operation" → "Setting").
- Check if there is an external circuit on the IC programming pin, disconnect the external circuit, or shield the detection connection function.
- 3) If the "Auto Detect" method is checked for programming, when the probability of error is high, it is necessary to first check the wiring/thimble and other connectors, as shaking during contact can affect the programming. Therefore, it is usually recommended to check the "Wait for key press" method.

#### 4. Automatic programming machine matching problem:

 It is recommended to check the "Wait for key press" method for programming. Please refer to the "Application Reference" table for key signal requirements, as shown in Figure 7.2.a.



- 2) For multi-channel programming, it is recommended to connect all the selected channels before providing a unified start signal. Otherwise, when some channels program, the "key press" detection function will temporarily fail, and other channels cannot start programming.
- 3) Ensure that the START, BUSY, and OK signals are connected correctly, and check "Match machine" on the software UI.

#### 5. Although there is a prompt of "successful programming ", the Main area Code obtained from reading is actually inconsistent with the original programming value:

- 1) Is "Program" and "Verify" not checked.
- 2) Is the code area not checked (both "Whole flash code" and "Sectors of flash code" are not checked).
- Is' Sectors of flash code 'checked, but the sectors to be programmed are not checked in "Sector Option...".
- Is it encrypted? Such as sector encryption("B0/B1"), "Ultra Security", "Custom Security", "The low/high level of read protect", etc.

# 6. If the "Code Option", "Customer ID", and "Serial Number" cannot be programmed in, the following operations can be attempted:

- 1) Check if "Whole flash code (Include option.security.SN.ID)" is checked.
- The operation options such as "Erase" and "Program" in the "Auto Program Setting" option bar must be checked.
- 3) Code option, Customer ID, serial number, etc. are not zero.

#### 7. Error related to chip name selection:

- 1) Check whether the chip name selected on the software UI is consistent with the IC name to be operated on.
- 2) Check if the chip is encrypted.
- 3) Check if the wiring is correct.

#### 8. Software usage related issues:

- 1) If the required chip name cannot be found, please update the software to the latest version.
- If you are unable to load code or data about flash blocks such as data, OTP, Boot, etc., please check if the corresponding flash block is checked.
- 3) After loading opf/nopf, if you need to update E2/Code content, you can check "Allow changes to



EEPROM content operating options" or "Allow changes FLASH operation options" in "Operation" → "Setting".

- 4) For chips with a code option length of 8 bytes, ProWriter V3.0 and above must be used.
- 5) The software UI displays 4 digits of "code checksum", with the low two bytes of "0000-0000" indicating the code checksum and the high two bytes indicating the code option checksum.

# 9. Check the ProWriter software version and programmer firmware version:

- 1) View ProWriter software version information in the "Help"  $\rightarrow$  "About..." window.
- 2) View firmware version related information in the "Chip Options" sub UI of the software main UI.
- 3) For more information, please open "Help"  $\rightarrow$  "Help" for query.