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## PROGRAM-HC-Programmer\_User Manual

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### Summary

#### HC-Programmer Program Software

- Support for Win 7, Win 8, Win 10, Win 11
- Support loading and saving files in \*.hex, \*.bin, \*.hcf(FLASH), \*.hc(OTP-MTP), \*.hpf(ARM)
- Support programmer file and burner binding function.
- Support the function of limiting the number of downloads of program files
- Support online firmware upgrade for burner and emulators
- Support online readout of program yields
- Support bilingual switching between English and Chinese
- Support program chip, project file encryption

#### HC-Programmer Hardware

- Adopts USB2.0 interface, ready to plug and play
- Supports the full range of Holychip chips
- Supports offline and on-line program
- Supports check null, program, and verification functions
- Supports rolling code program
- Supports program-in limit

HC-Programmer Product Physical Drawing

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# 1 Hardware Connection

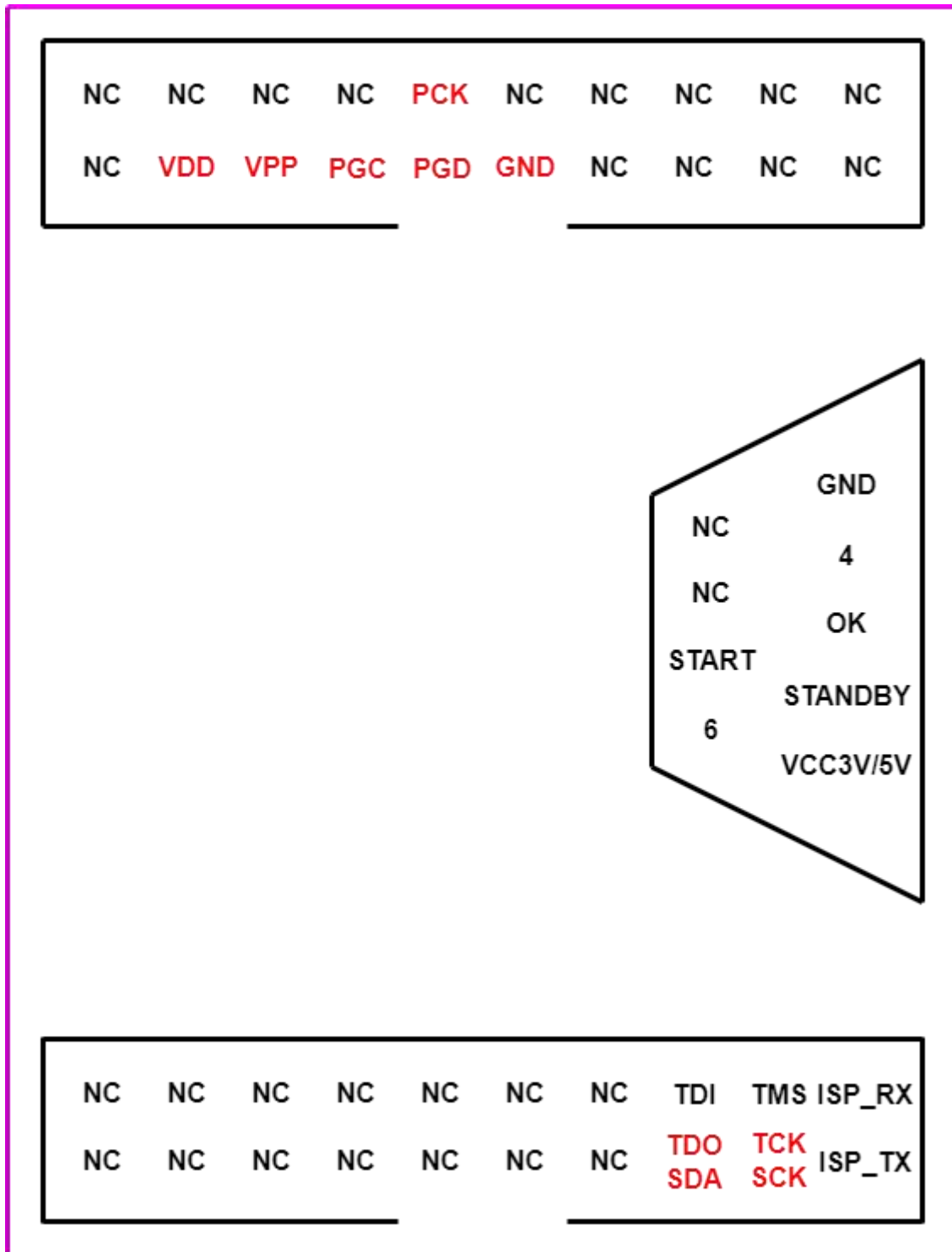


Figure 2-1 HC-Programmer Hardware Pin Diagram

## Accessories:

A shielded USB Type A male to USB Type B male cable

One 15V DC power adapter

### Program Pins:

OTP Series: VDD, VPP, PGC, PGD, GND, PCK.

MTP Series: VDD, VPP, PGC, PGD, GND.

FLASH Series JTAG emulation burn pins: VDD, GND, TCK, TDO, TMS, TDI.

FLASH Series SWD emulation burn pins: VDD, GND, SCK, SDA.

ISP Program Pins: VDD, GND, TX, RX.

Machine Pins: NG,BUS,START,GND,OK,STANDBY,VCC3V5V.

## 2 Software Installation

Please refer to the [TL0201\\_HC-Programmer TL0201\\_HC-Programmer\\_Installation\\_Manual](#) ".

## 3 Description of the software interface

This section describes the menus of HC-Programmer and the function of each option of the interface, so that users can quickly understand the basic functions of HC-Programmer.

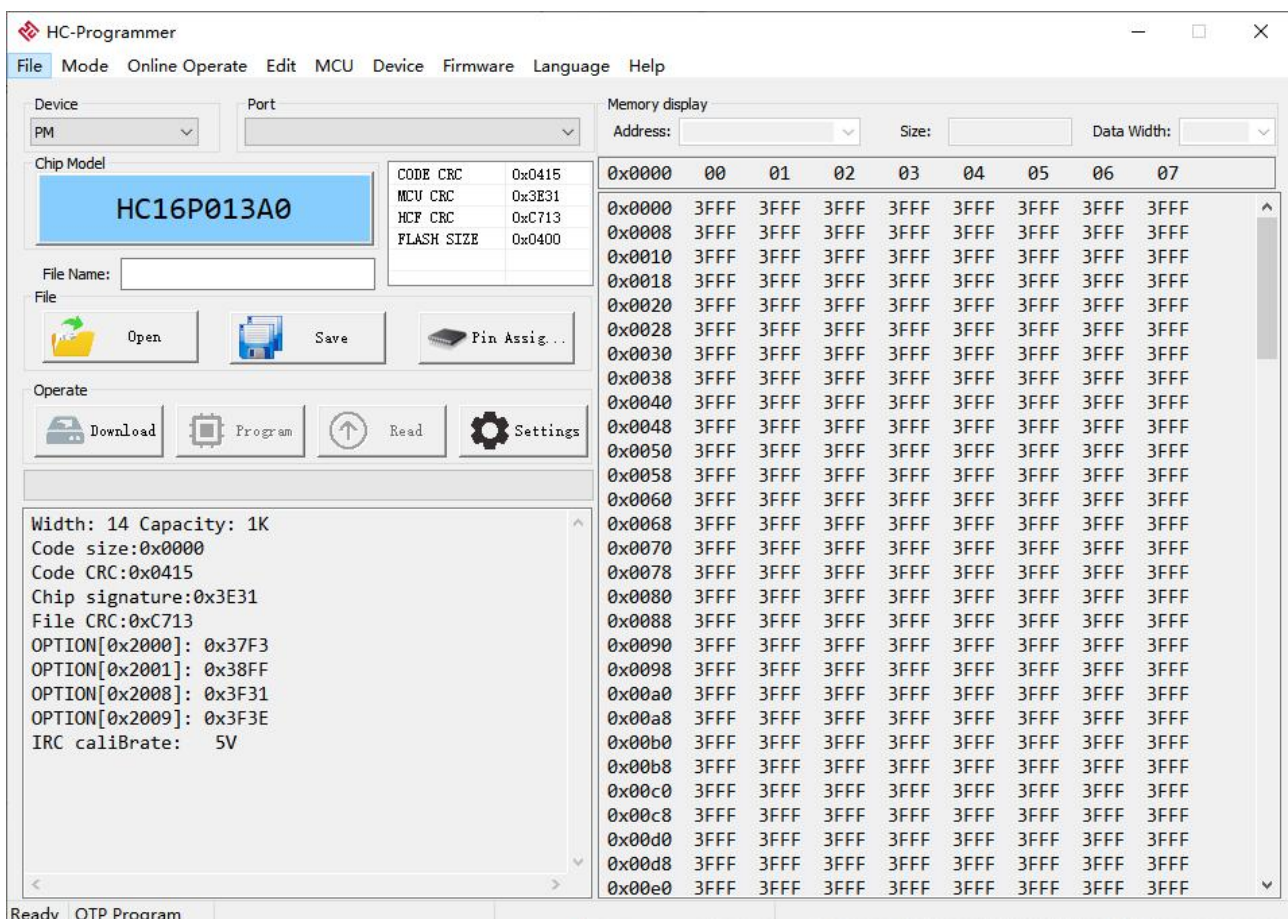


Figure 3-1 HC-Programmer Sofare Main Interface

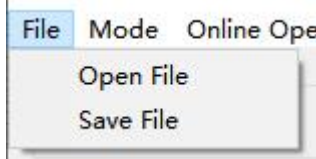
## 3.1 Menu

The menu includes: File, Mode, Online Operation, Edit, MCU, Device, Firmware, Language, Help.

File Mode Online Operate Edit MCU Device Firmware Language Help

### 3.1.1 Documentation

Clicking on the menu File brings up the following options:

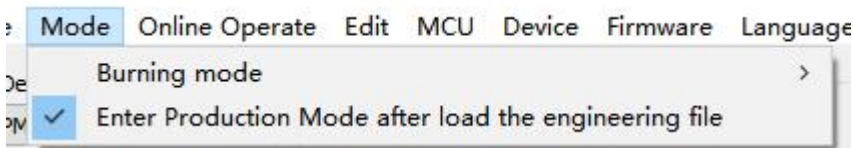


**Open file:** can open to get the data and configuration saved in hpf, hcf, hc project file, can also open to get hex, bin file data selection to CODE or EEPROM.

**Save File:** You can save the current data and configuration as a project file, or save the CODE data as a hex or bin file.

### 3.1.2 Mode

Clicking Menu Mode brings up the following options:



**Burning Mode:** You can select the desired program mode, including SWD/JTAG mode, ISP mode, production mode, repair mode, and so on.

SWD/JTAG mode: FLASH series chips can be switched to SWD/JTAG burning mode, OTP-MTP, ARM series chips can only use SWD two-wire burning mode.

ISP Mode: FLASH series chips can be switched to ISP burning mode, this mode is not selectable for OTP-MTP and ARM series chips. This option menu defines whether to enter ISP burning mode or not.

Production Mode: In this mode, you can only burn offline, other functions such as burn settings will not be configurable, and the CODE data content in the data display area on the right side will all be displayed with "\*", encrypted files will automatically enter production mode when opened.

Repair Mode: OTP-MTP series chips open this function, you need to enter the password to enter this function.

Burning Mode	Support chip series
SWD/JTAG mode	FLASH/OTP/MTP/ARM
ISP Mode	FLASH
Production Mode	FLASH/OTP-MTP/ARM
Repair Mode	OTP/MTP

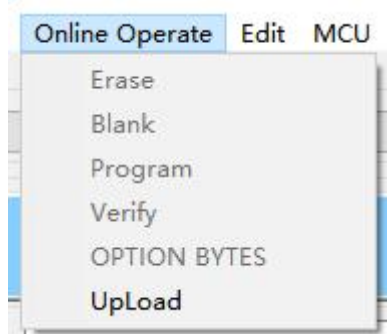
Chart 3.1.2-1 Programming mode supports chip series

**Enter Production Mode after load the engineering file:** After this option is checked, the host computer will

directly enter the mass production mode after loading the project file.

### 3.1.3 Online operation

Clicking on the menu Online Operations brings up the following options:



**Erase:** Only for ARM series chips and FLASH series chips emulation. The internal data of the chip will be erased immediately after clicking.

**Blank:** Only for FLASH series chip burning. Check whether the data of FLASH chip is empty immediately after clicking the button.

**Program:** only for ARM series chips. Tap it to program and verify ARM series chips immediately.

**Verify:** Used for the emulation of FLASH series chips. The data verification of FLASH series chips is carried out immediately after clicking.

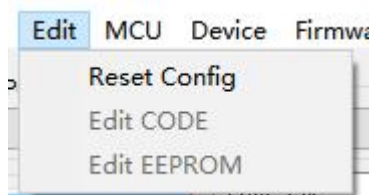
**OPTION BYTES:** only for ARM series chips. After clicking, the ARM series chip OPTION will be read immediately, the current OPTION selection box will pop up after the reading is successful, and the OPTION will be downloaded to the chip after resetting.

Online operation	Support chip series
Erase	FLASH/ARM
Blank	FLASH
Program	ARM
Verify	FLASH
OPTION BYTES	ARM

Chart 3.1.3-1 On-line operation supports the chip series

### 3.1.4 Edit

Clicking on Menu Edit brings up the following options



**Reset Config:** Restore the data and configuration to the initial state when selected.

**Edit CODE:** The Edit Data dialog box pops up, and you can fill the CODE area with data.

**Edit EEPROM:** The Edit Data dialog box pops up to fill the EEPROM area with data.

### 3.1.5 MCU

Clicking on the menu chip brings up the following options



**Offline Program ISP Firmware:** Check the box to burn ISP firmware offline.

**Clear Password:** Checking this box will erase the chip password during offline programing.

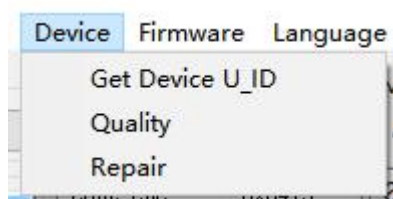
**Clear ISP:** Checking this box will clear ISP of the chip firmware during offline programing.

MCU	Support chip series
Offline Program ISP Firmware	FLASH
Clear Password	FLASH/MTP
Clear ISP	FLASH

Chart 3.1.5-1 MCU supports the chip series

### 3.1.6 Device

Clicking on the menu device brings up the following options



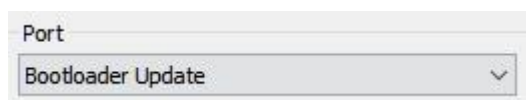
**Get Device U\_ID:** Queries the U\_ID of the currently selected device, and the query result is displayed in the status display area.

**Quality:** This function is limited to OTP-MTP series chips, reads the program times and PASS times saved by the program device, and displays the acquired yield (PASS times/total times) in the status display area.

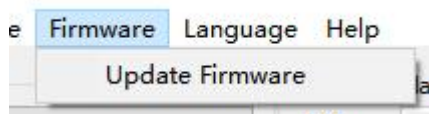
**Maintenance:**

### 3.1.7 Firmware

Preparation for firmware update: Press and hold the button on the burner/emulator, when the port displays Bootloader Update, it means that the lower computer has entered the firmware update state



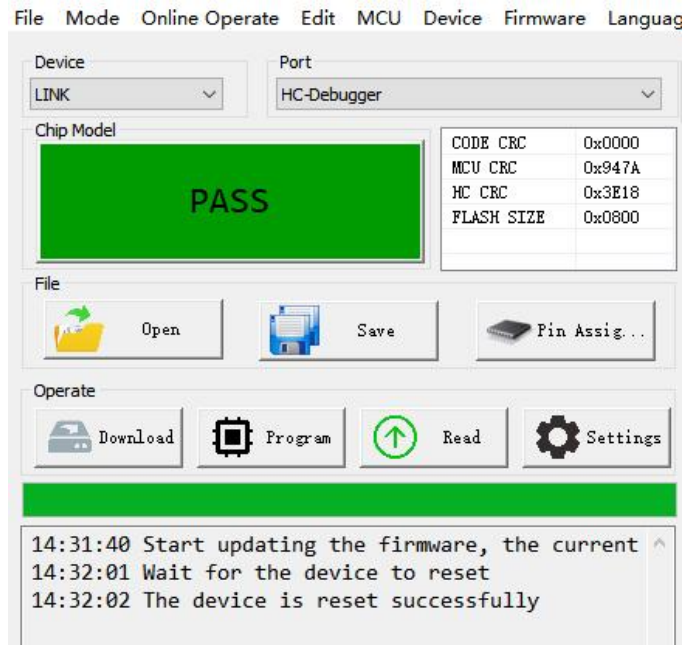
Clicking on the menu firmware brings up the following options



**Update Firmware:** Updates the firmware of the currently selected device.

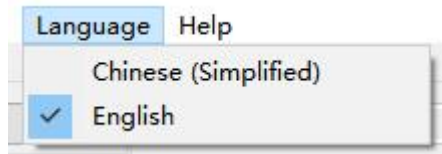


After clicking Update Firmware, wait for the firmware to update, and when the firmware update is complete, the device resets. Port Select the port number that returns to normal



### 3.1.8 Language

Clicking on the menu language brings up the following options

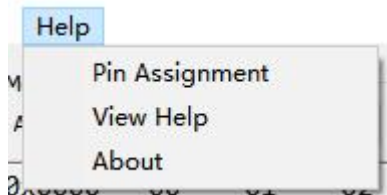


**Chinese(Simplified):** Switch the language to Simplified Chinese.

**English:** Switch the language to English.

### 3.1.9 Help

Clicking on the menu Help brings up the following options

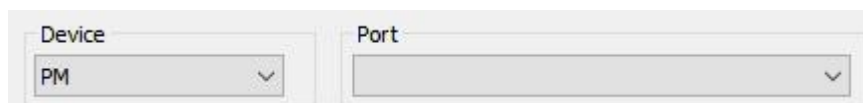


**Pin Assignment:** Displays the pin map of the currently selected chip.

**View help:** Opens the help file.

**About:** pops up the version information of the application.

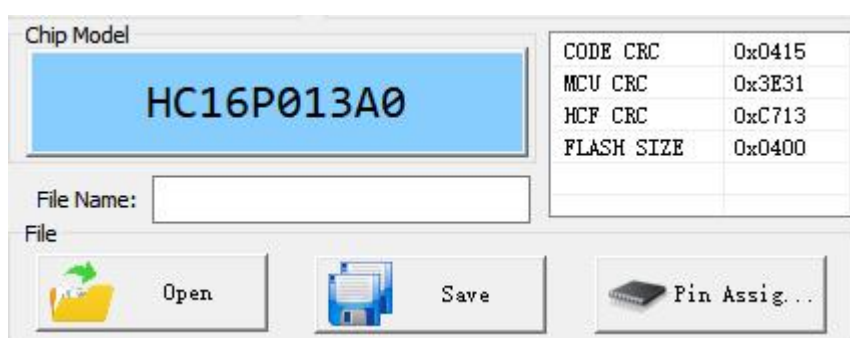
## 3.2 Equipment setup



**Device Selection:** Select to use HC-Programmer or LINK for communication, the drop-down menu is configured as HC-Programmer and LINK, initially it shows HC-Programmer.

**Port Selection:** Select the physical port of the inserted HC-Programmer or LINK's device for communication.

## 3.3 Chip Selection and File Operation



**Chip Model:** Click the blue area to bring up the chip model selection dialog box.

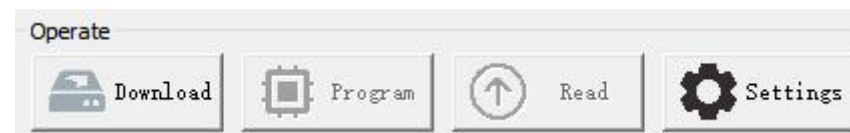
**Checksum value display area:** Displayed in the upper right corner of this area, different contents are displayed depending on the type of chip selected.

**Open:** It can be opened to get the data and configuration saved in hpf, hcf, hc project files, or opened to get hex, bin file data selection to CODE or EEPROM.

**Save:** You can save the current data and configuration as a project file, or save the CODE data as a hex or bin file.

**Pin Assignment:** Displays the pin map of the currently selected chip.

## 3.4 Programing Main Functions



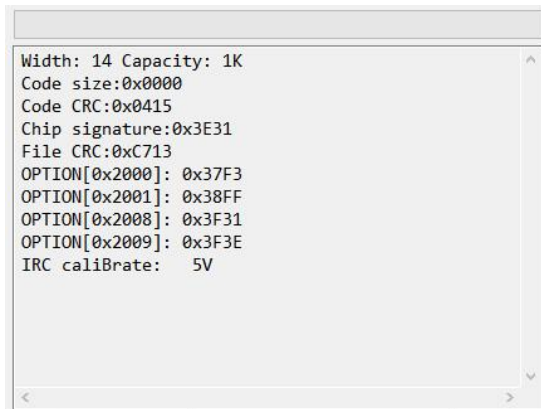
**Download:** After clicking the Download button, the current data and configuration will be downloaded to the programmer.

**Program:** After clicking the Program button, the current data and configuration will be programmed to the chip, only LINK supports online programming.

**Read:** Read the data in the chip into the computer and display it in the data display area.

**Settings:** Set the parameters of programing, including basic settings, OPTION settings, programing settings, rolling code settings and programing limit settings.

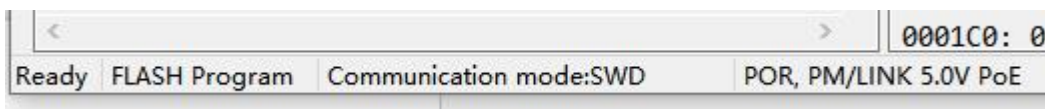
### 3.5 Status display area



**Progress Bar:** When the programmer is connected normally, the progress of programing is displayed in real time when the programing command is executed.

**Information display text box:** displays information about the current loading file/programing/reading/process.

### 3.6 Status column



**Status column:**Display of the current selected chip series, communication mode (FLASH display only), reset power supply mode (FLASH/ARM display)

### 3.7 Data Display Area

Memory display								
Address:			Size:			Data Width:		
0x0000	00	01	02	03	04	05	06	07
0x0000	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x0008	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x0010	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x0018	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x0020	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x0028	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x0030	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x0038	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x0040	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x0048	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x0050	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x0058	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x0060	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x0068	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x0070	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x0078	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x0080	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x0088	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x0090	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x0098	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x00a0	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x00a8	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x00b0	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x00b8	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x00c0	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x00c8	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x00d0	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x00d8	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x00e0	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF
0x00e8	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF	3FFF

**Data Area:** Displays the currently loaded or read CODE/EEPROM/OPTION data.

## 4.SWD/JTAG mode

This section describes the operation flow of the HC-Programmer's SWD/JTAG mode that supports the configuration of OPTION, code rolling, program protection, and other functions.

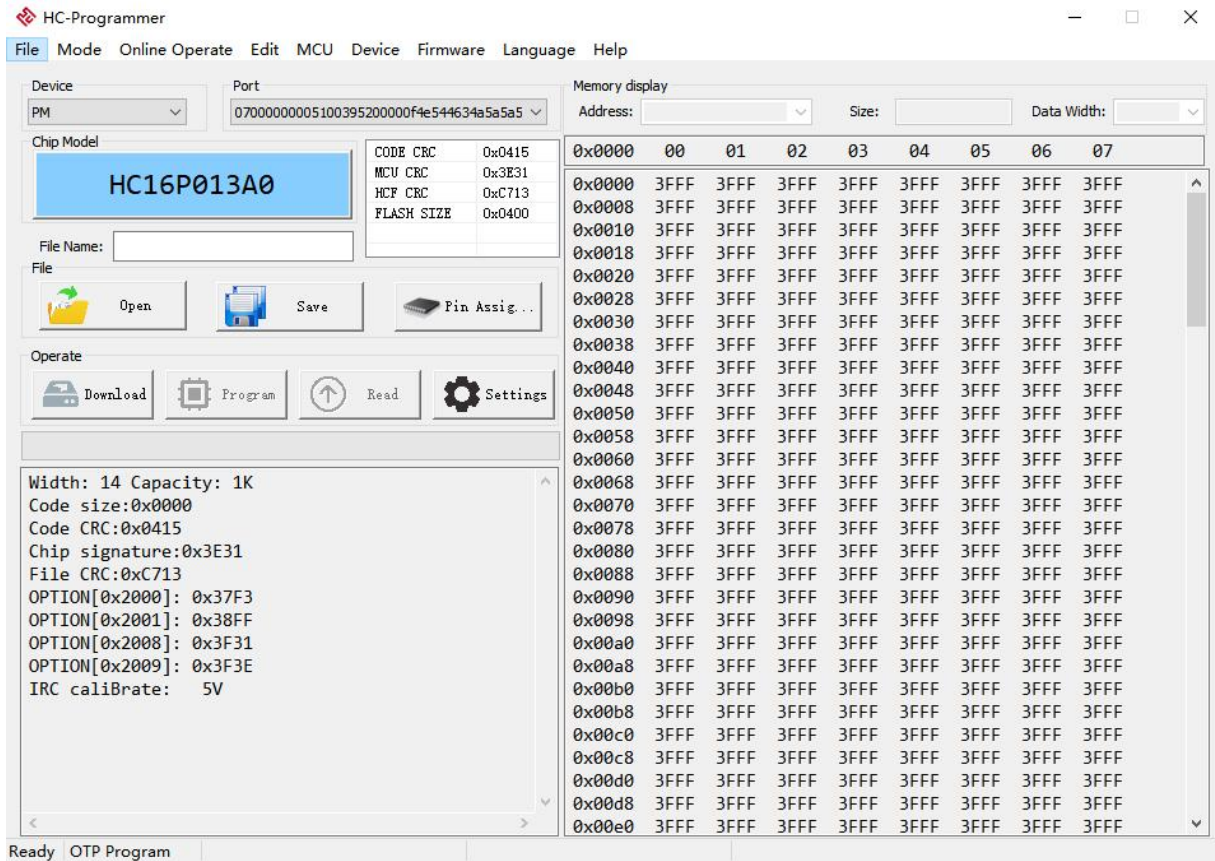
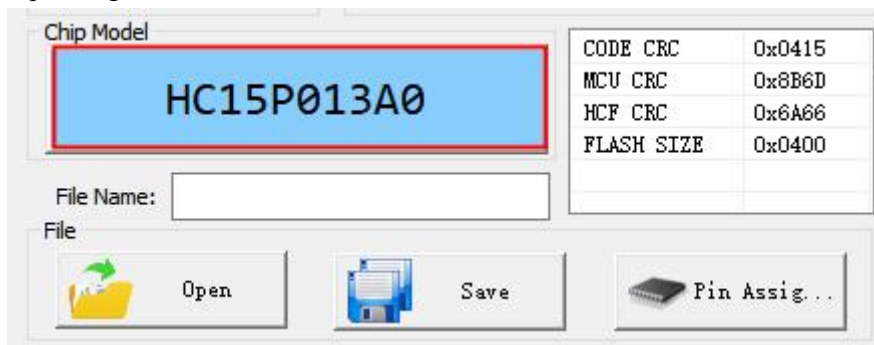


Figure 4-1 SWD/JTAG mode software main interface

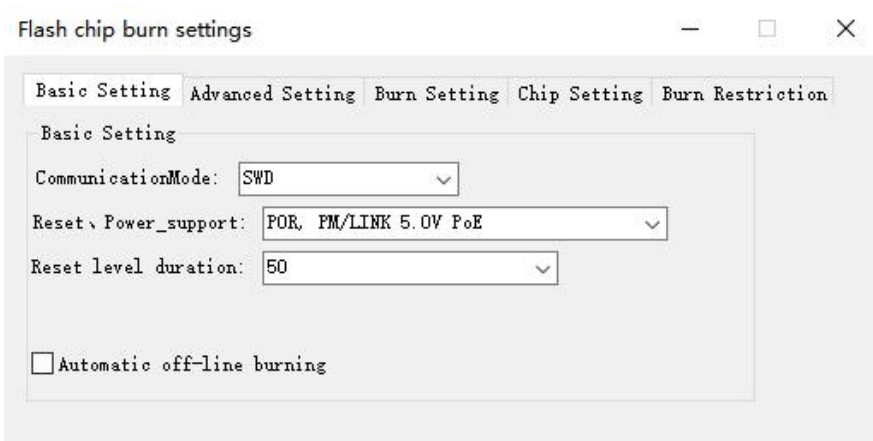
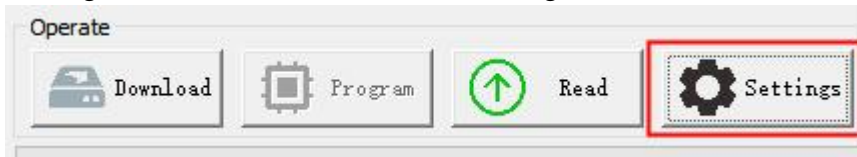
### 4.1 Selecting the Chip Model

step1:Click the blue area of chip selection and file operation to bring up the chip model selection dialog box, select the corresponding model.



## 4.2 FLASH Chip Setup

Burning the main functional area click on Settings



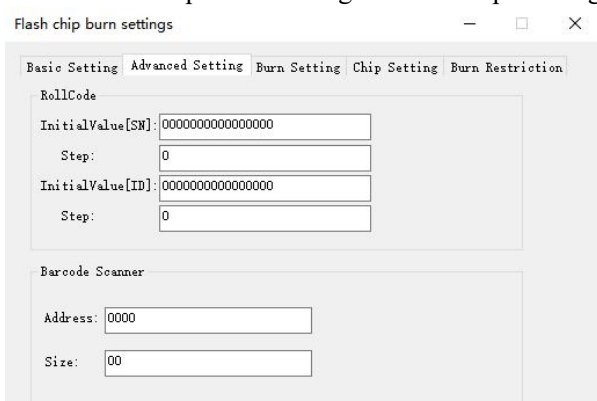
### 4.2.1 Basic settings

Communication Mode: Select the communication method of the burner.

Reset power support: Select the mode of chip reset and power supply.

Reset Level duration: selects how long the reset level lasts during reset.

Automatic off-line burning: When this option is checked, the burner will automatically burn the chip when it is detected and stop after burning until the chip is recognized again after it is not detected.



### 4.2.2 Advanced settings

RollingCode:

Initial value [SN]: sets the starting value (in hexadecimal) of the roll code SN\_DATA.

Step: Sets the step value (in decimal) of the roll code SN\_DATA.

Initial value [ID]: Sets the starting value (in hexadecimal) of the roll code ID\_DATA.

Step: Sets the step value (in decimal) of the roll code ID\_DATA.

Barcode Scanner:

Address: Set the address where the scanned content of the scanning gun is stored.

Size: Set the size of the content scanned by the scanning gun.

### 4.2.3 Burn Settings

Flash chip burn settings

Basic Setting Advanced Setting **Burn Setting** Chip Setting Burn Restriction

**Burn Setting**

☒ Erase ☐ Blank ☒ Program ☒ calibration ☐ Power on after aut  
☒ OPTION ☐ EEPROM

**Erase Setting**

Δ	Page	Address
<input checked="" type="checkbox"/> 0	00-15	0x0000-0x3FFF
<input checked="" type="checkbox"/> 1	00	0x0000-0x03FF
<input checked="" type="checkbox"/> 2	01	0x0400-0x07FF
<input checked="" type="checkbox"/> 3	02	0x0800-0x0BFF
<input checked="" type="checkbox"/> 4	03	0x0C00-0x0FFF
<input checked="" type="checkbox"/> 5	04	0x1000-0x13FF
<input checked="" type="checkbox"/> 6	05	0x1400-0x17FF
<input checked="" type="checkbox"/> 7	06	0x1800-0x1BFF
<input checked="" type="checkbox"/> 8	07	0x1C00-0x1FFF

Burn Settings:

Erase: Select whether to erase during the burn process.

Blank: Select to check if the chip data is empty during the burning process.

Program: Select whether or not to burn in the burn process.

Calibration: Select whether to perform calibration during the burning process.

Power on after aut: Selects whether or not to run automatically after power-up.

OPTION: Set whether or not to operate on the OPTION area while burning (open selection in ISP mode only).

EEPROM: Set whether or not to operate the EEPROM area during burn.

Erase Setting: You can choose to erase the chip on a page-by-page basis. (When the erase page is not fully selected, the chip settings cannot be modified)

### 4.2.4 Chip Settings

Flash chip burn settings

Basic Setting Advanced Setting Burn Setting **Chip Setting** Burn Restriction

Δ	OPTION_ITEM	OPTION_VALUE
1	ERST_EN	外部RST输入
2	WAIT_TS	8ms
3	BOEVS	2.4V
4	BOREN	BOR使能
5	EWCFG	0x0000

Chip password Settings

Old Password: 00000000

New Password: 00000000

IAP/ICP

Δ	IAP_BP	IAP_EWP	ICP_BP	ICP_EWP	Address
<input type="checkbox"/> 0		00-15			0x0000-0x3FFF
<input type="checkbox"/> 1		00-03			0x0000-0x0FFF
<input type="checkbox"/> 2		04-07			0x1000-0x1FFF
<input type="checkbox"/> 3		08-11			0x2000-0x2FFF
<input type="checkbox"/> 4		12-15			0x3000-0x3FFF

OPTION Setting: Set the OPTION function parameters of the chip.



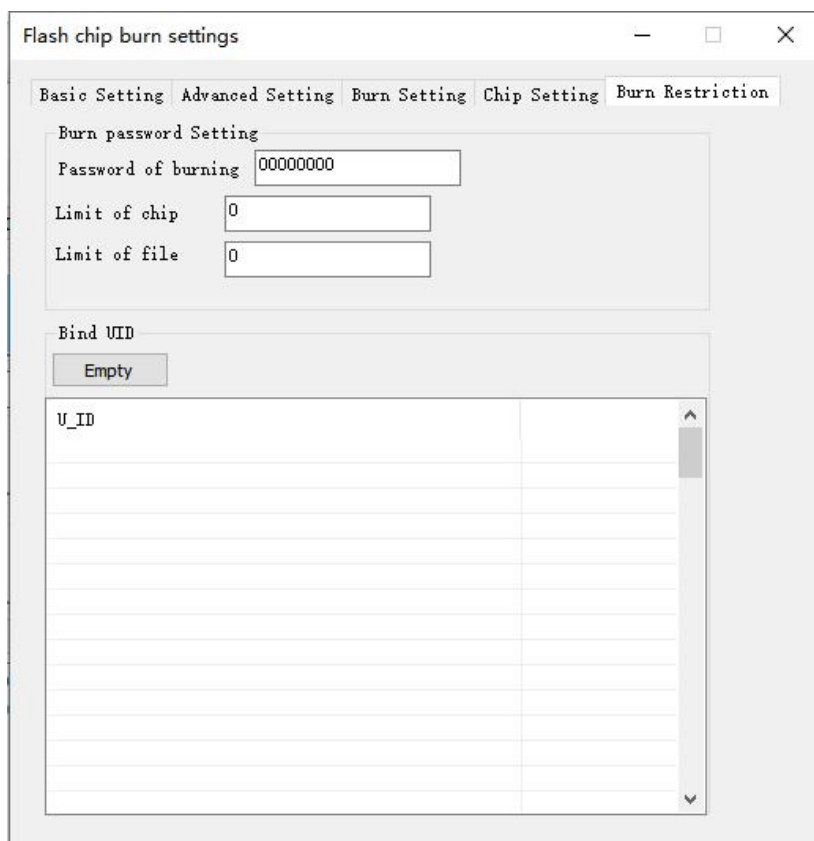
Chip Password Setting: Set whether the chip burning is encrypted or not, after encrypted reading, you need to input the correct password to verify.

Old password: You need to confirm the original password of the chip when setting the chip password.

New Password: Set a new password for the chip.

IAP/ICP: Set the chip IAP/ICP protection.

## 4.2.5 Burning Restriction



Burn Restriction:

Password of burning: Set the password for burning the project file.

Chip Burning Limit: Set the limit of the number of times the project file can be burned, more than the number of times it can not be burned and report an error.

File download limit: set the limit of the number of times the project file can be downloaded, more than the number of times it can not be downloaded and report errors.

Bind UID: Set the burner U\_ID to which the burner file is bound.

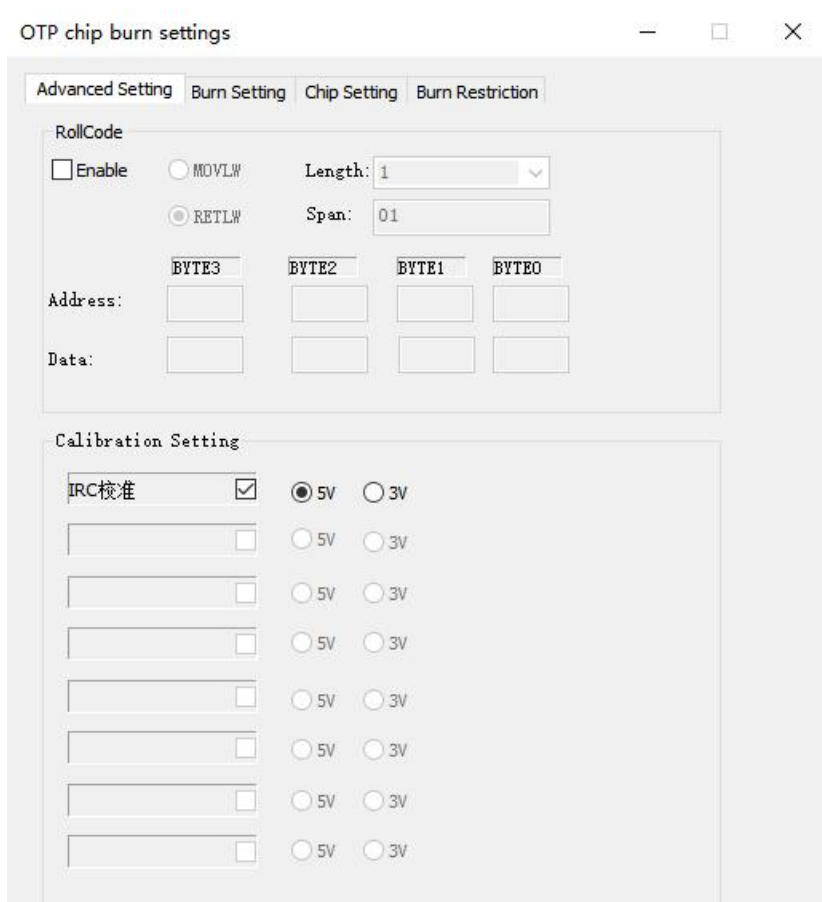
## 4.3 OTP Chip Setup

Burning the main functional area click on Settings





### 4.3.1 Advanced settings

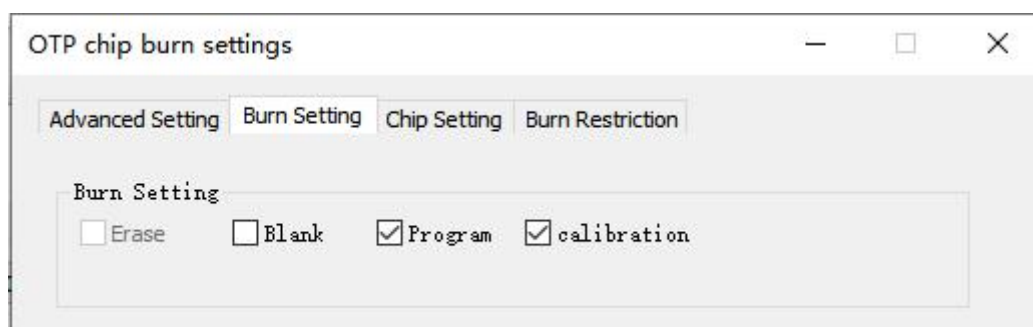


The screenshot shows the 'OTP chip burn settings' dialog box with the 'Advanced Setting' tab selected. The 'RollCode' section has an 'Enable' checkbox, two radio buttons for 'MOVLW' and 'RETLW', a 'Length' dropdown set to '1', and a 'Span' input set to '01'. Below these are four input fields for 'Address' (labeled BYTE3, BYTE2, BYTE1, BYTE0) and four for 'Data'. The 'Calibration Setting' section has a checked 'IRC校准' checkbox and a series of radio buttons for voltage selection (5V and 3V) for multiple channels.

RollCode: Set whether OTP chip rolling code is enabled or not, after enabling, you can select rolling code length, span, address and initial value.

Calibration Setting: Set whether or not to calibrate during the chip burning process.

### 4.3.2 Burn Settings



The screenshot shows the 'OTP chip burn settings' dialog box with the 'Burn Setting' tab selected. The 'Burn Setting' section contains four checkboxes: 'Erase' (unchecked), 'Blank' (unchecked), 'Program' (checked), and 'calibration' (checked).

Erase: Select whether to erase during the burn process.

Blank: Select to check if the chip data is empty during the burning process.

Program: Select whether or not to burn in the burn process.

Calibration: Select whether to perform calibration during the burning process.

### 4.3.3 Chip Settings

OPTION_ITEM	OPTION_VALUE
BOB电压	1.8V
WDT功能使能	禁止WDT
加密功能使能	不加密
高频内部RC频率	8MHz
输入管脚施密特	禁止施密特
WDT溢出时间	TWDT: 57.6ms
系统启动时钟选择	高频启动
内部高频RC频率选择16M	非16MHz, 由高频内部RC决定
Package	任意封装

OPTION Setting: Set the OPTION function parameters of the chip.

OTP chip burn settings

Advanced Setting Burn Setting Chip Setting Burn Restriction

Burn password Setting

Password of burning 00000000

Limit of chip 0

Limit of file 0

Bind UID

Empty

U\_ID

### 4.3.4 Burning Limitations

Burn password setting:

Password of burning: Set the password for burning the project file.

Limit of chip: Set the limit of the number of times the project file can be burned, more than the number of times it can not be burned and report an error.

Limit of file: set the limit of the number of times the project file can be downloaded, more than the number of times it can not be downloaded and report errors.

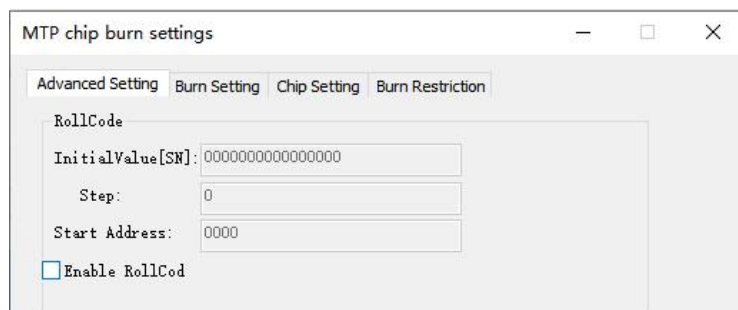
Bind UID: Set the burner U\_ID to which the burner file is bound.

## 4.4 MTP Chip Setup

Burning the main functional area click on Settings

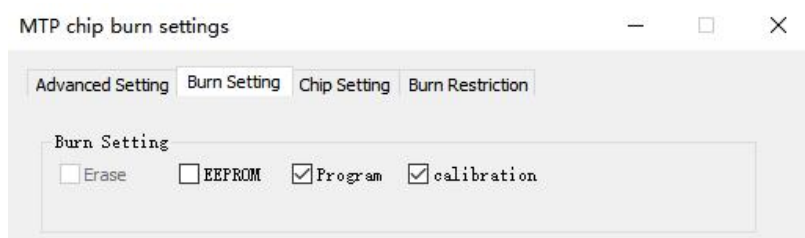


### 4.4.1 Advanced settings



RollCode: Set whether the rolling code of MTP chip is enabled or not, after enabling, you can select the initial value, Step and Start Address of rolling code.

### 4.4.2 Burn Settings



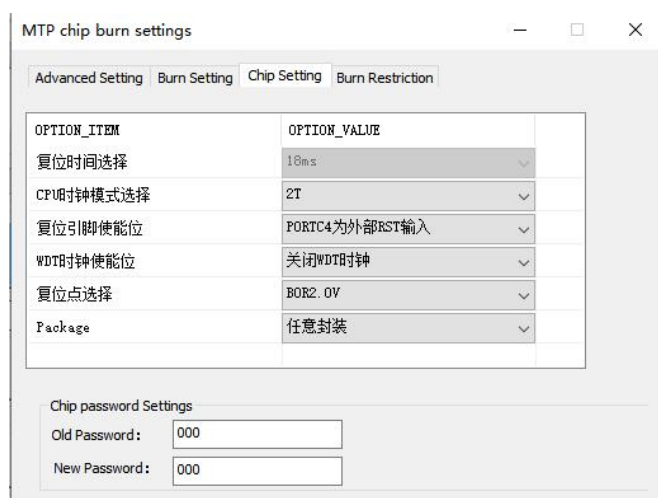
Erase: Select whether to erase during the burn process.

EEPROM: Set whether or not to operate the EEPROM area during burn.

Program: Select whether or not to burn in the burn process.

Calibration: Select whether to perform calibration during the burning process.

### 4.4.3 Chip Settings

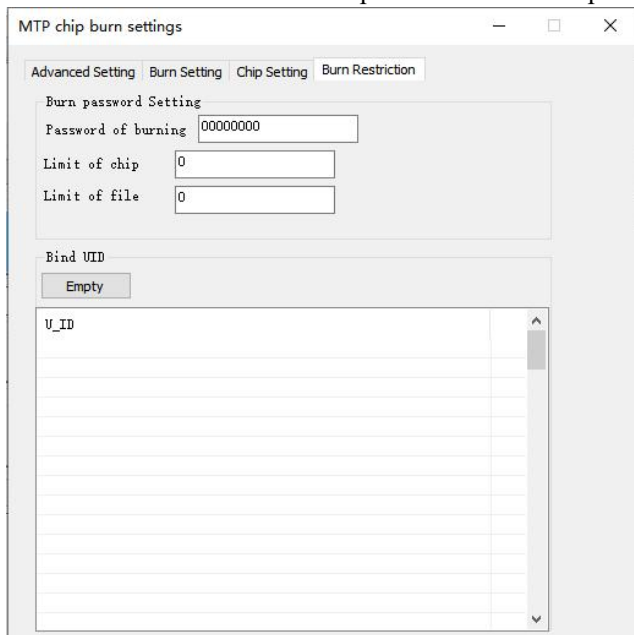


OPTION Setting: Set the OPTION function parameters of the chip.

Chip Password Setting: Set whether the chip burning is encrypted or not, after encrypted reading, you need to input the correct password to verify.

Original password: You need to confirm the original password of the chip when setting the chip password.

New Password: Set a new password for the chip.



#### 4.4.4 Burning Restriction

Burn password setting:

Password of burning: Set the password for burning the project file.

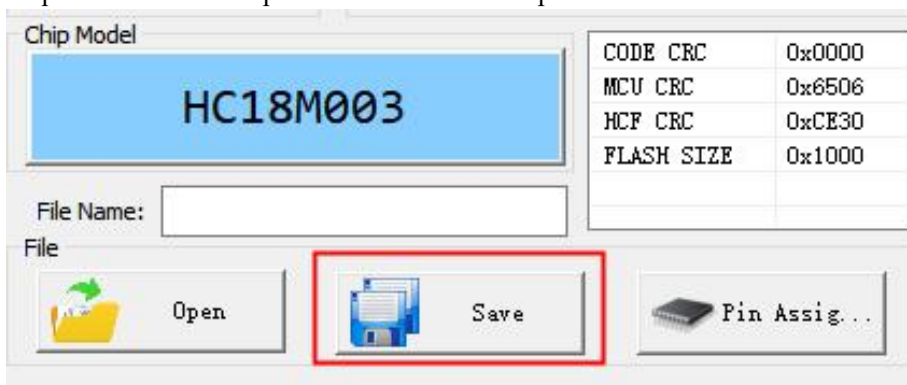
Limit of chip: Set the limit of the number of times the project file can be burned, more than the number of times it can not be burned and report an error.

Limit of file: Set the limit of the number of times the project file can be downloaded, more than the number of times it can not be downloaded and report errors.

Bind UID: Set the burner U\_ID to which the burner file is bound.

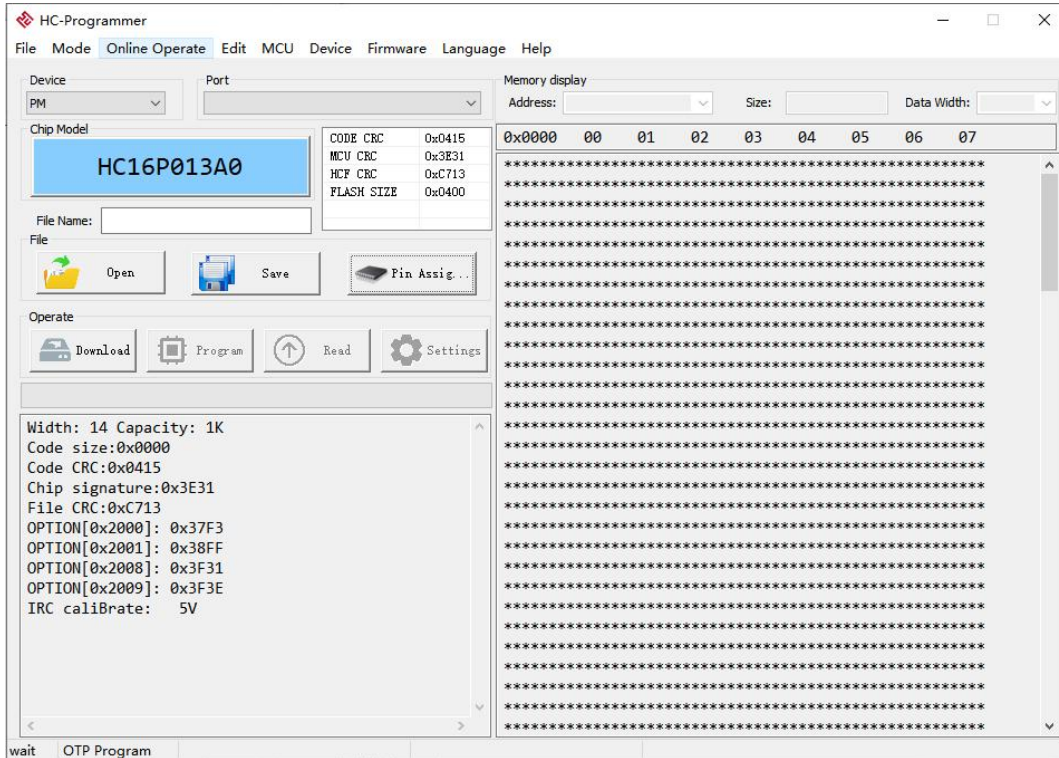
### 4.5 Preservation of documents

Step1: Click on the chip selection and file manipulation area to save it



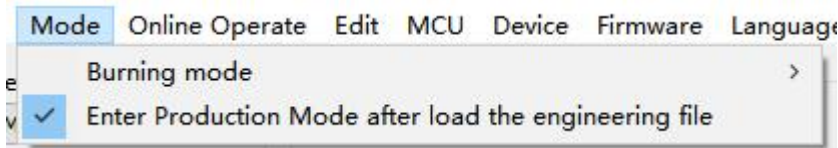
# 5 Production Mode

This section describes the HC-Programmer's production mode program process, combining the hardware and computer operation procedures.

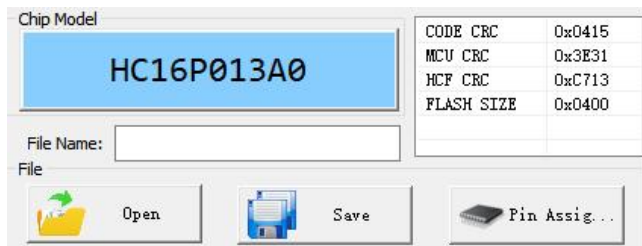


## 5.1 Opening The Program File

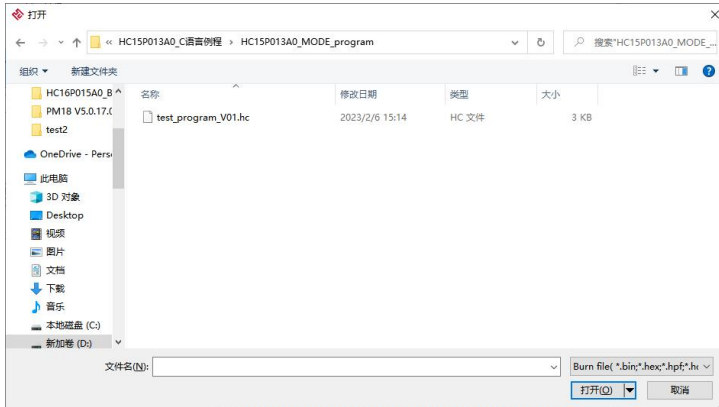
Step1: Click on the menu mode to make sure that you have checked the box to load the project file and then automatically enter the production mode.



Step2: Click Open in the Chip Selection and File Manipulation area.

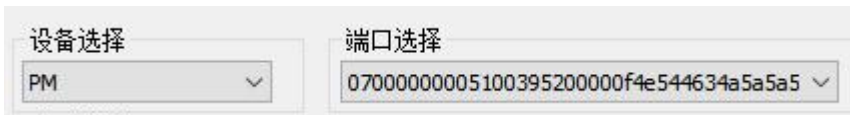


Step3: Open the file dialog box, select the program file you need to load, click the "Open" button.



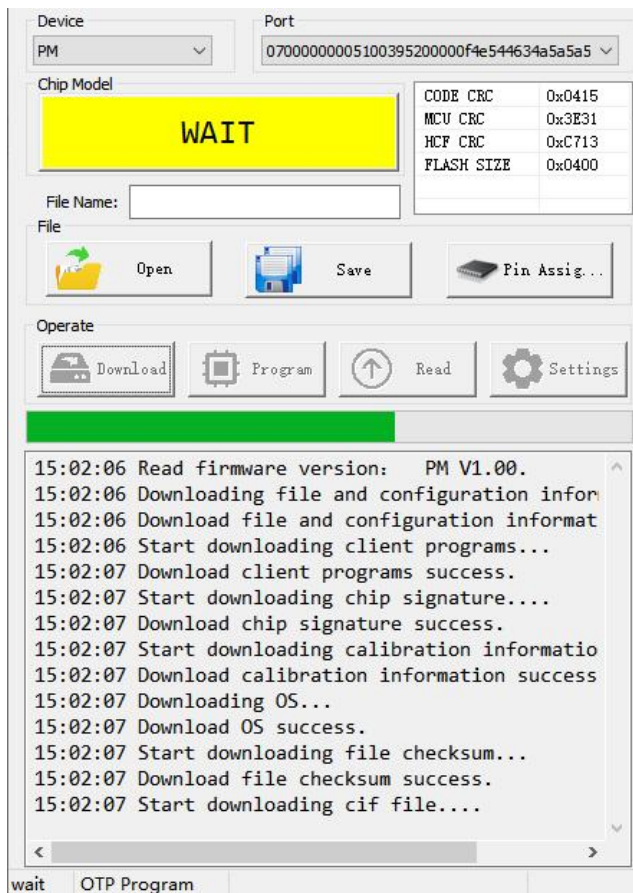
## 5.2 Downloading the program file

step1: HC-Programmer is connected to the computer via USB cable, and the port selection in the device setup area confirms device port .



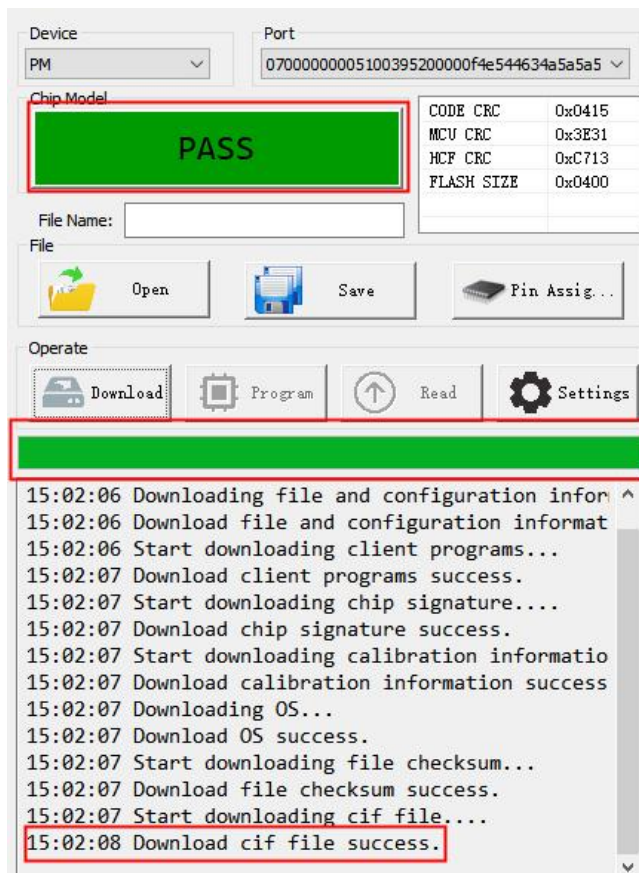
step2: Program the main functional area clicks to download

step3: The burning file is downloading, please wait patiently.

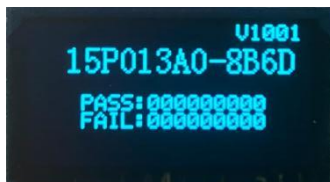




step4: The burn file is downloaded successfully.



Step5: HC-Programmer display to confirm the chip model and feature code



## 5.3 Manual burning

Step1: Refer to "2 Hardware Connection", connect the HC-Programmer to the program pins of the chip via DuPont cable, or directly via the program adapter board.

Step2: Power up the HC-Programmer via the 15V DC power adapter.

Step3: Press the white button on the front of the HC-Programmer and wait for the burning to complete.

Step4: Burn successfully, the LED indicator is green, the buzzer beeps once, and the display shows "PASS".

Step5: If burning fails, the LED will be red, the buzzer will beep twice, and the display will show the burning error message.

Demonstrate	Meaning	Concern
PASS	Program successfully.	
Self Check Err.0	Self-checking error	No program was downloaded, or the circuit self-test failed.
CP Err.1	Placement error	No chip has been placed, or the chip is damaged.
BlankCheck Err.2	Checking for errors	The chip is not an empty piece.

Pro Code Err.3	Program error	Code program failed.
Verify Err.4	Calibration error	Verify failed.
Calibrate Err.5	Calibration error	Calibration has failed, or the results are too different from the last calibration.
	+PCK Not Below	Poor chip VDD or PCK contact
Pro OPTION Err.6	Misconfiguration	Configuration word burn or checksum failure.
OS Err.7	Open short circuit error	Chip pin open short circuit, or package selection error.
Rolling Err.8	Rolling code error	Rolling code data overflow.
READ_FLASH Err.9	Hardware error	Failed to load burn file.
CHIP_ID Err.	CHIP_ID error	Chip type check failed.
OPER_NUM Err.	Burn Limit Error	Exceeds the burn limit number of times.
Power Err.	Power supply error	15V power supply is not connected, or the power check circuit is incorrect.

Table 3.3-1 HC-Programmer Hardware program Error message

## 5.4 Machine program

Burning Signal	active level	Burner Interface	Kintronics	MERIDIAN MACHINES	Rouge machine
VDD	3.3V\5V	PIN1	PIN1	PIN1	PIN9
GND	GND	PIN5	PIN2	PIN2	PIN5
BUSY	"H"	PIN8	PIN3	PIN5	PIN1
OK	"H"	PIN3	PIN4	PIN4	PIN3
NG	"H"	PIN9	PIN5	PIN3	PIN2
START	"L"	PIN7	PIN9	PIN9	PIN4

Table 3.5-1 HC-Programmer commonly used machine burning pin comparison table, other machines, please refer to the "2 Hardware Connection" machine pin diagram.



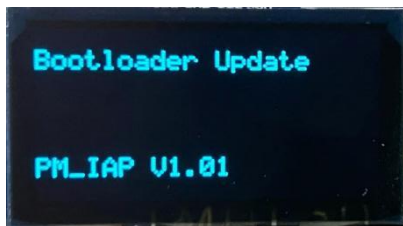
## 6 Software & Firmware Updates

### 6.1 Software updates

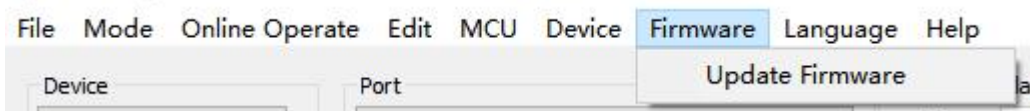
The software will automatically connect to the official website of CoreSage every time it is opened. If there is an update to the software on the official website, the software on the host computer will automatically pop up a prompt window for software update, and users can go to the official website of CoreSage (<http://www.holychip.cn>) Users can download the latest software from VeriSilicon's website ().

### 6.2 Firmware Updates

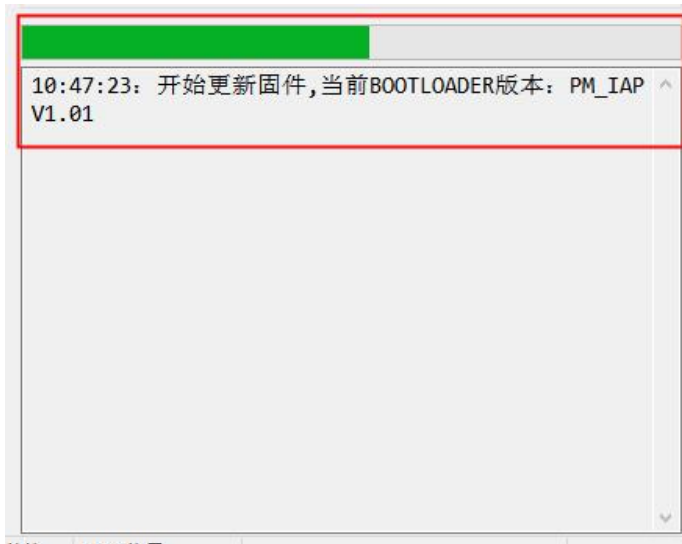
Step1: Press and hold the white button on the HC-Programmer burner while connecting the USB cable to the PC, the burner hardware will be displayed as below:



Step2: Click Firmware-Update Firmware in the menu bar.



Step3 Firmware update is in progress, please wait patiently.



Step4: Firmware update is successful, please wait patiently for HC-Programmer hardware reset, the buzzer "drop" after the burner firmware update is successful!



## 7 Imprint

releases	dates	descriptive
Ver1.00	2023/12/28	first edition

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