

## Abstract

### OTP Program Software

- Support for Win XP, win 7, win 8, win 10
- Support the loading of files in \*. HC, \*. Pro, \*. Hex, \*. Bin
- Support saving files in \*. HC, \*. Hex, \*. Bin
- Support the binding function of program files and burners
- Support program file download limit function
- Support online upgrade function
- Support online read program yield function

### OTP Program Hardware HC-PM18-V5

- It adopts USB2.0 interface, plug and play
- Support full range of holychip OTP chips
- Support offline program and machine program
- Support air search, program, verification functions
- Support offline reading of chip signature code
- Support rolling code program
- Support program times limit



HC-PM18-V5

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# 1 Software Installation

Please refer to 《TL0001\_Driver Install Manual》 and 《TL0101\_OTP PROGRAM\_HC-ICD-V4\_Install Manual》 .

# 2 Hardware Connection

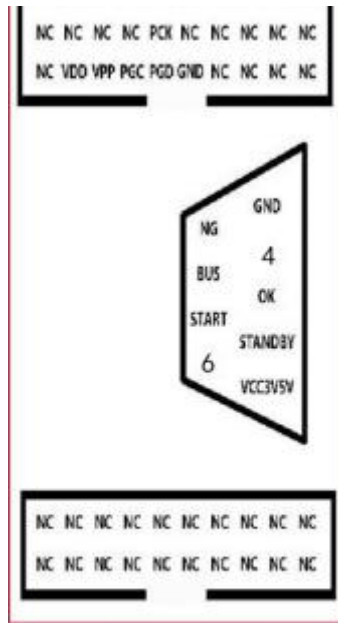


Figure 2-1 HC-PM18-V5 pin configuration diagram

Accessories:

A shielded USB A male to USB B male data cable

One 15V DC power adapter

Program PIN:

VDD, VPP, PGC, PGD, GND, PCK。

Machine PIN:

NG,BUS,START,GND,OK,STANDBY,VCC3V5V

# 3 Factory Mode

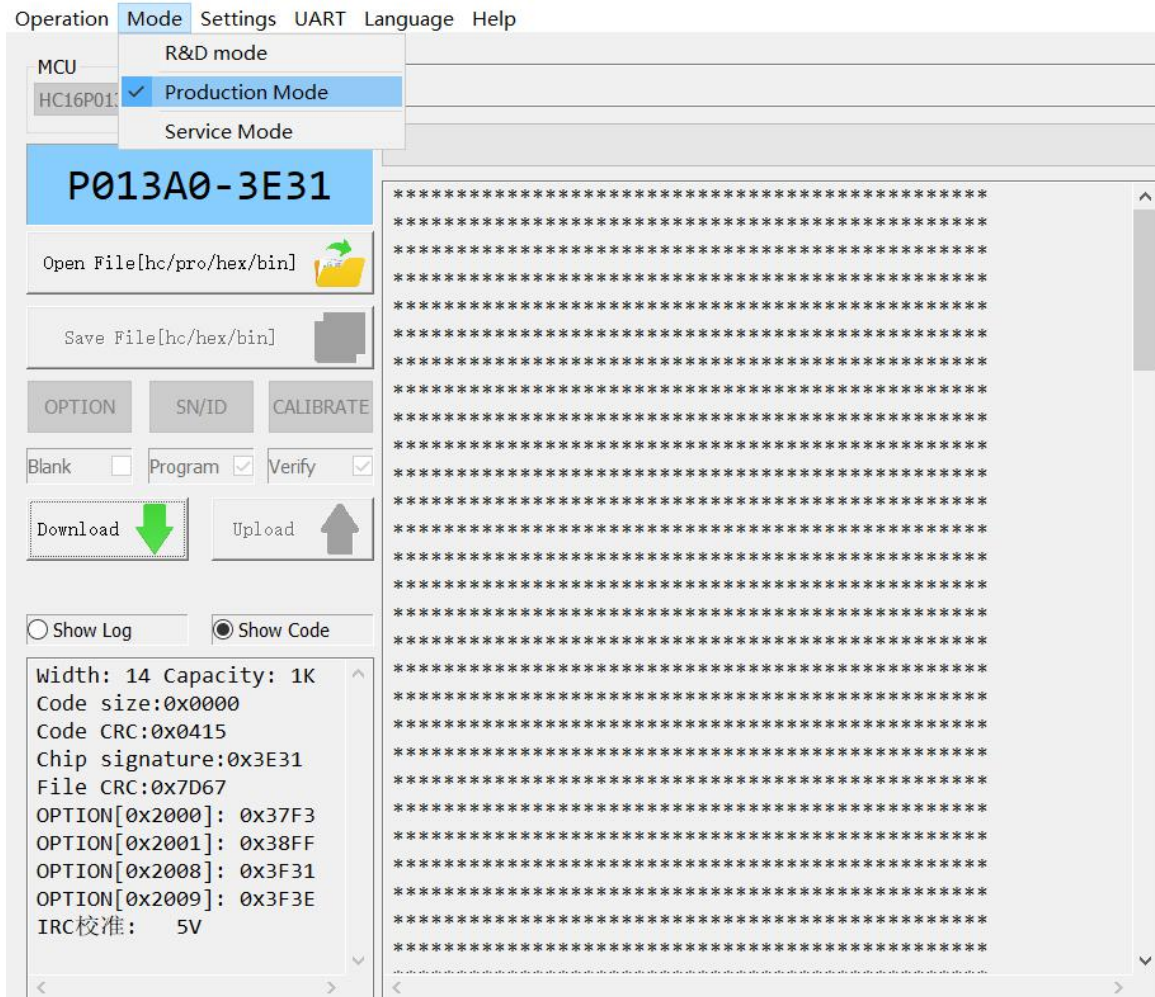


Figure 3-1 main interface of factory mode software

### 3.1 Open Program File



Figure 3.1-1 click "open file [HC / Pro / hex / bin] to load the configured burn file

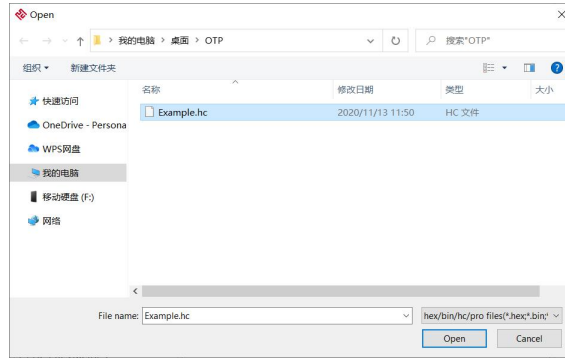


Figure 3.1-2 open the file dialog box, select the burn file to load, and click the "open" button

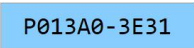


Figure 3.1-3 confirm chip model and chip signature code

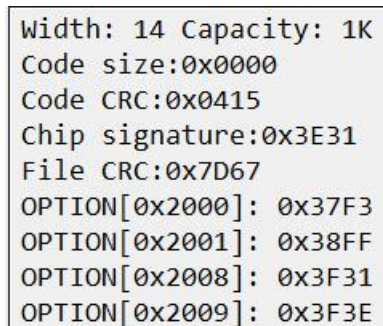


Figure 3.1-4 view the program file information

### 3.2 Download Program Files

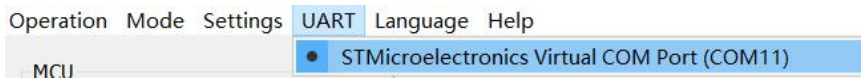


Figure 3.2-1 HC-PM18-V5 is connected to the computer through USB cable.

Select confirm device port in the "port" menu bar



Figure 3.2-2 click the "download" button in the main interface of software to start downloading program files

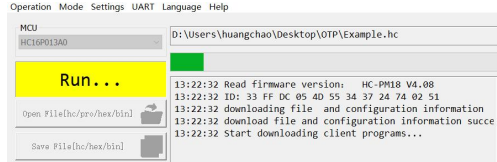


Figure 3.2-3 please wait patiently during download of program files

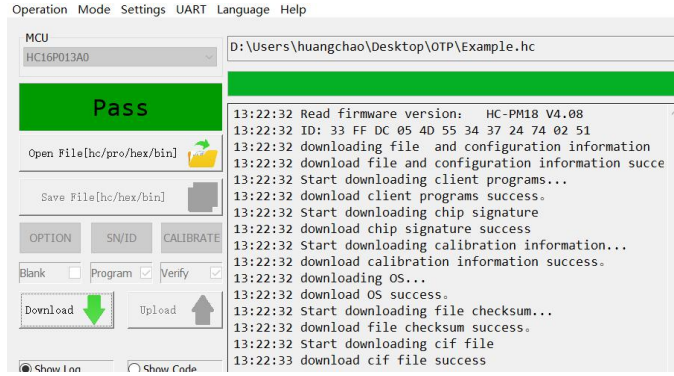


Figure 3.2-4 successful download of burn in file

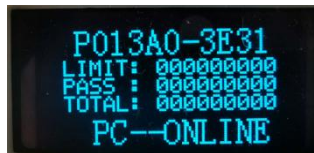


Figure 3.2-5 HC-PM18-V5 display screen confirms chip model and chip characteristic code

### 3.3 Manual Program

1 Refer to "2 hardware connection", connect hc-pm18-v5 with the program pin of OTP chip through DuPont wire or directly through the burn adapter board.

2. power on hc-pm18-v5 through 15V DC power adapter.

3 Press the white key on the front of hc-pm18-v5, waiting for the program to complete.

4 The recording is successful. The LED indicator is green, the buzzer will sound, and the display will display "pass".

3 The program failed, LED indicator light is red, buzzer will sound twice, and the display screen will display the program error prompt information.

Display	Meaning	Problem
PASS	Burn success	
Self Check Err.0	Self test error	No program downloaded or circuit self test failed.
CP Err.1	Placement error	No chip is placed or the chip is damaged.
BlankCheck Err.2	Error in empty checking	The chip is not empty.
Pro Code Err.3	Burn error	Code burn failed.
Verify Err.4	Verification error	Verify failed.
Calibrate Err.5	Calibration error	Calibration failed or was too different from the previous calibration result.
Pro OPTION Err.6	Configuration error	Configuration word burn or verification failed.
OS Err.7	Open short circuit error	The chip pin is short circuited or the package selection is wrong.
Rolling Err.8	Error in rolling code	Code roll data overflow.
READ_FLASH Err.9	Hardware error	Failed to load burn file.
CHIP_ID Err.C	CHIP_ID error	Chip model check failed.
OPER_NUM Err.F	Burn limit error	The number of times the burn limit is exceeded.
Power Err.P	Power error	No 15V power supply is connected, or the power supply check circuit is wrong.

Table 3.3-1 HC-PM18-V5 program error prompt information

### 3.4 Read MCU CRC

Press and hold the burn key continuously, then power on the burner (15V). After the buzzer calls twice, the digital tube displays "func.0", and then release the burn key.

After putting on the chip, press the burn key again, and the digital tube will display the chip signature code. If the chip is empty, it will display as "FFFF".

### 3.5 Machine Program

Burn signal	Effective level	Burner interface	Jinchuang chart machine	Meiliko machine station	Lush 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 comparison table of program pins of hc-pm18-v5 common machine. Refer to table pin diagram of 2 hardware connection for other machines



# 4 R&D Mode

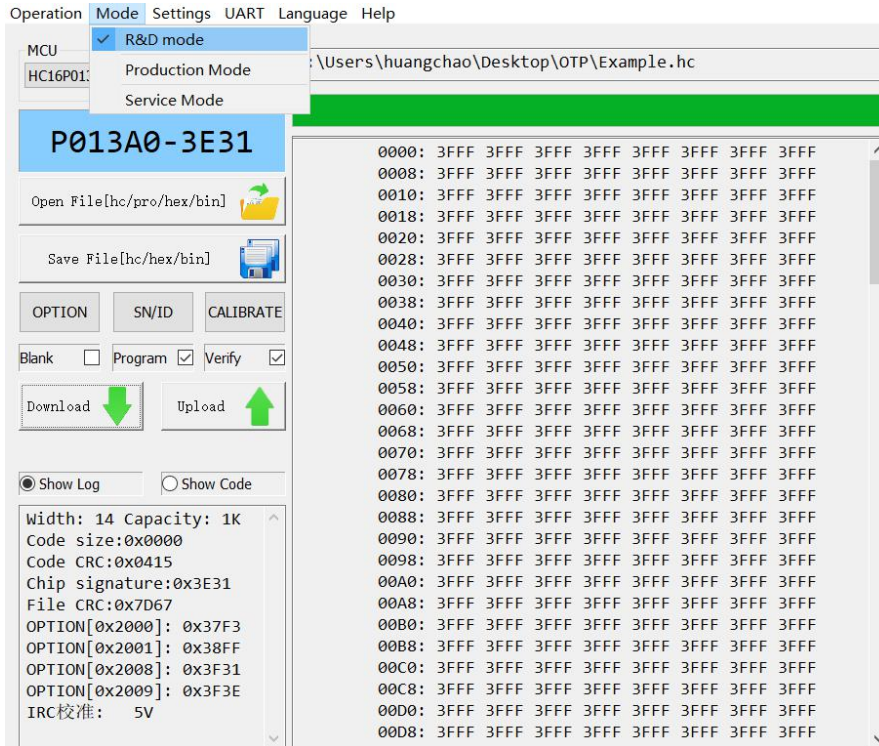


Figure 4-1 main interface of R&D mode software

## 4.1 Select MCU

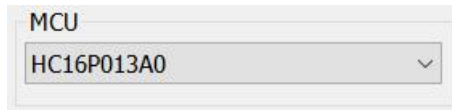


Figure 4.1-1 selection of chip mode

## 4.2 Open File



Figure 4.2-1 open file [hc/pro/hex/bin]

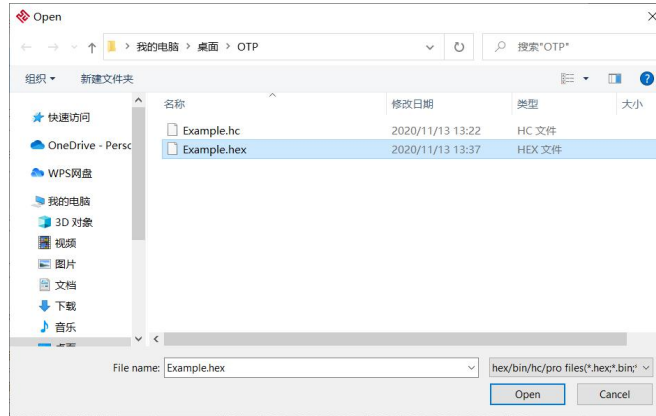


Figure 4.2-2 file opening dialog box, select the target generated by HC ide software \*. Hex file

```
Width: 14 Capacity: 1K
Code size:0x0000
Code CRC:0x0415
Chip signature:0x3E31
File CRC:0x7D67
OPTION[0x2000]: 0x37F3
OPTION[0x2001]: 0x38FF
OPTION[0x2008]: 0x3F31
OPTION[0x2009]: 0x3F3E
```

Figure 4.2-3 the information prompt window confirms whether the code check sum is code in the output window compiled with HC ide software\_Whether CRC is consistent

### 4.3 Configure OPTION

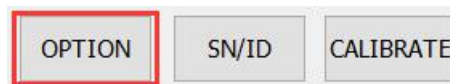


Figure 4.3-1 click the "option" button to open the option configuration dialog box

OPTION_ITEM	OPTION_VALUE
BOR电压	2.4V
时钟模式	4T
输入管脚施密特	屏蔽施密特
输出管脚读入	读端口
兼容MCU	F-MCU
高频内部RC频率	8MHZ
加密功能使能	不加密
外部复位使能	屏蔽, 做输入
WDT功能使能	禁止WDT
封装	6PIN

Figure 4.3-2 option configuration dialog box, configure option according to chip data manual

## 4.4 Configure Roll Code

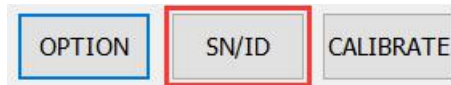


Figure 4.4-1 click the "roll code" button in the main interface to select whether to configure the roll code according to the actual needs

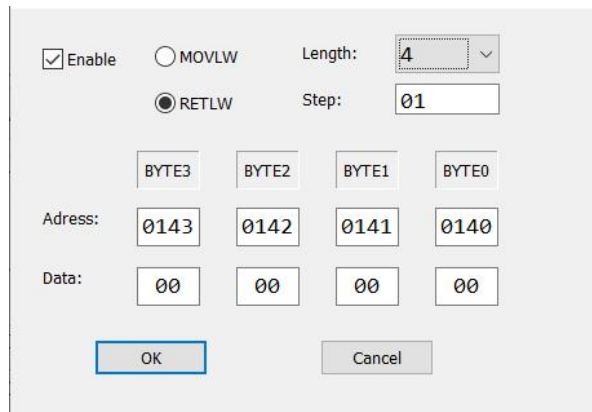


Figure 4.4-2 the roll code configuration dialog box, which configures enable, movlw, retlw, length, span, address, data

C language "retlw" mode reads the reference code of rolling code data:

```
#define ROLL_ADDR 0x000140
typedef unsigned char BYTE;
typedef unsigned short WORD;
typedef unsigned long DWORD;
// __code __at(ROLL_ADDR) DWORD ROM_Data = 0x99bbddf; // only for HC ide simulation
BYTE g_byData = 0x00;
WORD g_wData = 0x0000;
DWORD g_dwData = 0x00000000;
G_byData = *(__code BYTE*)ROLL_ADDR;
G_wData = *(__code WORD*)ROLL_ADDR;
G_dwData = *(__code DWORD*)ROLL_ADDR;
g_wData = *(__code WORD*)ROLL_ADDR;
g_dwData = *(__code DWORD*)ROLL_ADDR;
```

## 4.5 Configure Calibration

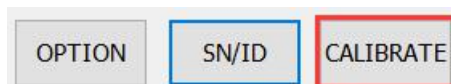


Figure 4.5-1 click "calibration" button in the main interface to select whether to calibrate according to actual requirements

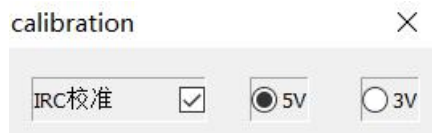


Figure 4.5-2 configuration calibration dialog box

## 4.6 Program Protection

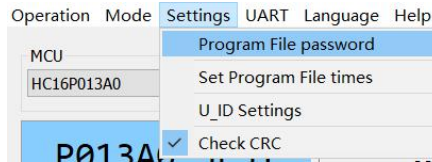


Figure 4.6-1 setting menu bar select whether to set burn protection

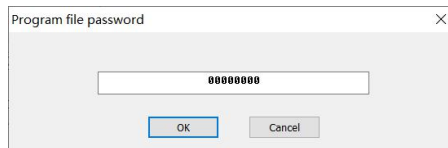


Figure 4.6-2 setting dialog box of "program file password". After setting password, this password is required when loading this burn record again to switch to R & D mode

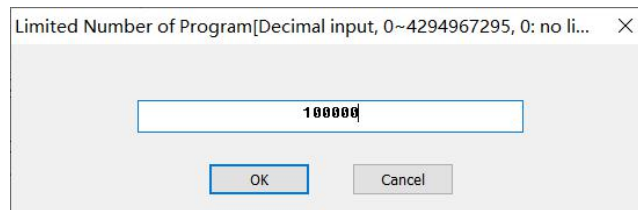


Figure 4.6-3 setting dialog box of "burn limit times", manual program / machine program will limit the number of program after setting

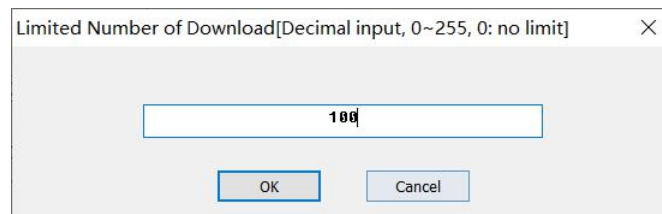


Figure 4.6-4 "download limit times" setting dialog box, which will limit the download times when downloading program files after setting

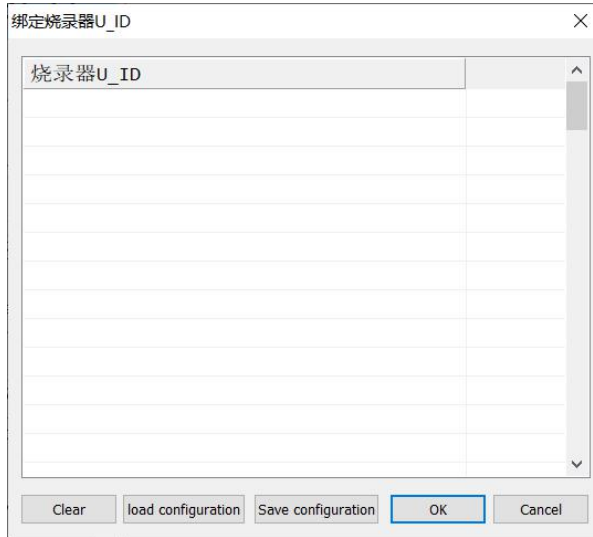


Figure 4.6-5 "binding burner u\_ID setting dialog box, after setting, program file can only be downloaded to the specified burner  
(connect hc-pm18-v5 before setting, and read and fill in U automatically after entering the setting dialog box\_ID)

### 4.7 Program Settings

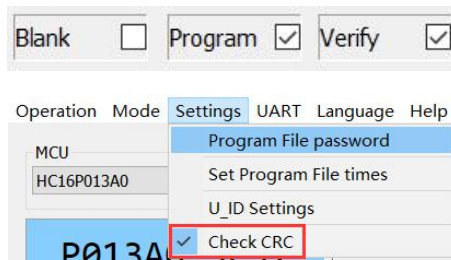


Figure 4.7-1 program settings interface

### 4.8 Save File



Figure 4.8-1 "save file [hc/hex/bin] button in main interface



Figure 4.8-2 save file dialog box, select save path, click Save (s) button to save program file to local disk

## 4.9 Download And Program

Please refer to "3.2 download program file", "3.3 manual program", "3.4 read chip characteristic code", "3.5 machine burn record".

# 5 Software&Firmware Update

## 5.1 Software update

The upper computer software will automatically connect the core holy official website every time it is opened. If the official network software is updated, the upper computer software will automatically pop up the software update prompt window, and the user can go to the core holy official website (http://www.holychip.cn) Download the latest software.

## 5.2 Firmware Update

When downloading program files in 3.2, the upper computer software will automatically check whether the firmware of the lower computer is the latest version. If the firmware does not match the upper computer software, the user will be prompted to update the firmware.

Before firmware update, please connect USB of hc-pm18-v5 to the computer. Refer to figure 3.2-1 to check whether the device port is selected correctly.

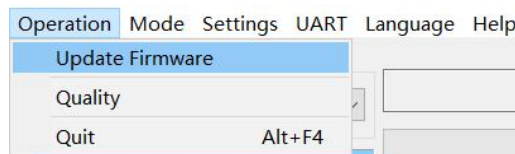


Figure 5-1 menu bar "operation", "update firmware"

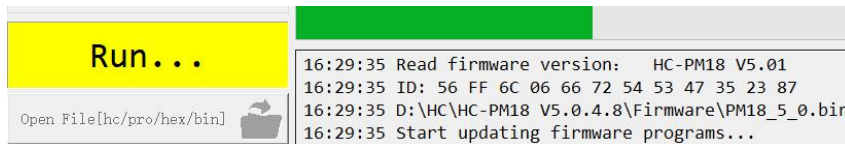


Figure 5-2 firmware update, running

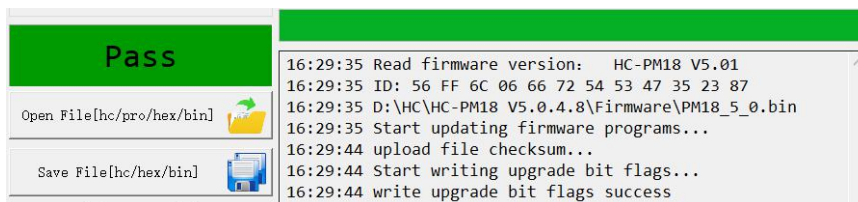


Figure 5-3 firmware update succeeded. Please wait patiently for hc-pm18-v5 hardware reset. After buzzer "drop" sounds, firmware update of the recorder is successful

## 6 Program Socket

1. The red wire in the wiring diagram indicates that the user needs to use 0 ohm resistance short circuit for the two pins connected with the red wire.
2. The user can also weld all pins on the adapter plate to arrange pins. When program different models, use jumper cap to short connect according to the schematic diagram.



## 7 Version Description

<b>edition</b>	<b>date</b>	<b>describe</b>
Ver1.00	2020/11/6	First edition

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