

KF32 Series

ChipON PRO User Manual V1.0

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1 Introduction

ChipON PRO KF32 Designed By Shanghai ChipON Micro-Electronic Co.,Ltd, It's use to program chip of KungFu32 series specifically. It can work with only chip or board who own chip(Linked Chip relational interface To Programmer). The software can be used for Earse, Search Empty, Program, Verify, Read, Batch Program Online, Offline Code For Offline program, The Software Also support to update Firmware of Programmer.

2 Software Install

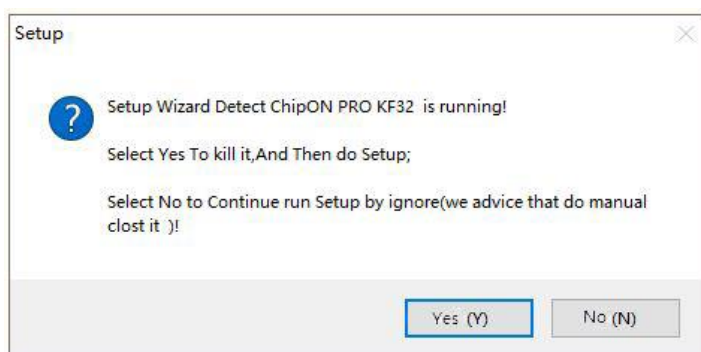
This part introduces the setup of sofeware who contain driver.

2.1 Program Software Insatll

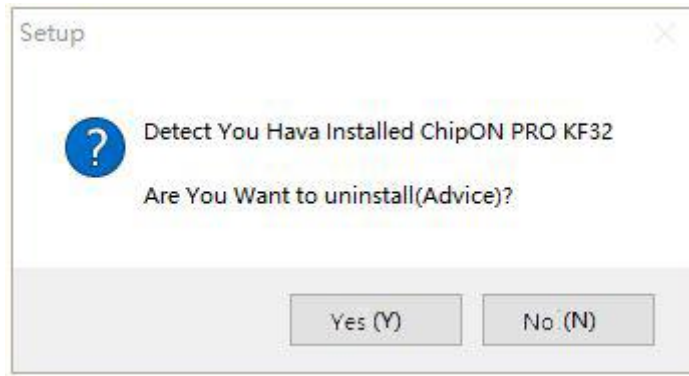
Download and Extract the package and you will get the file of “ChipON PRO KF32 VX. X. X. exe” .

Please Double click it and Enter the Install UI. follow the steps below , untill install finish.You can creat Shortcut to Desktop by option.

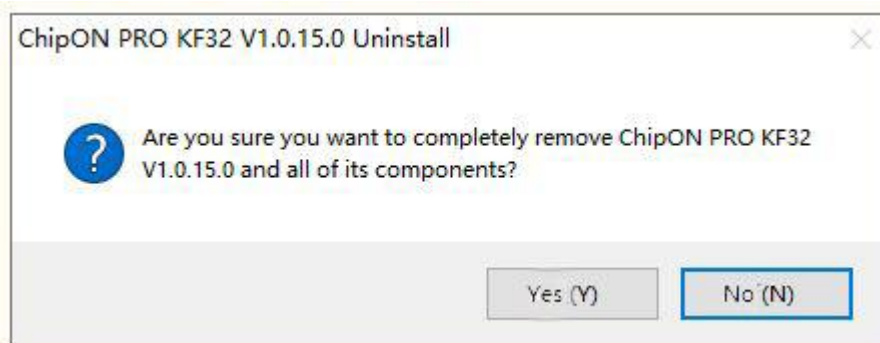
- ❖ If the history installed software is running, show kill wizard.



- ❖ If already install this version or history, Follow the wizard to uninstall it.



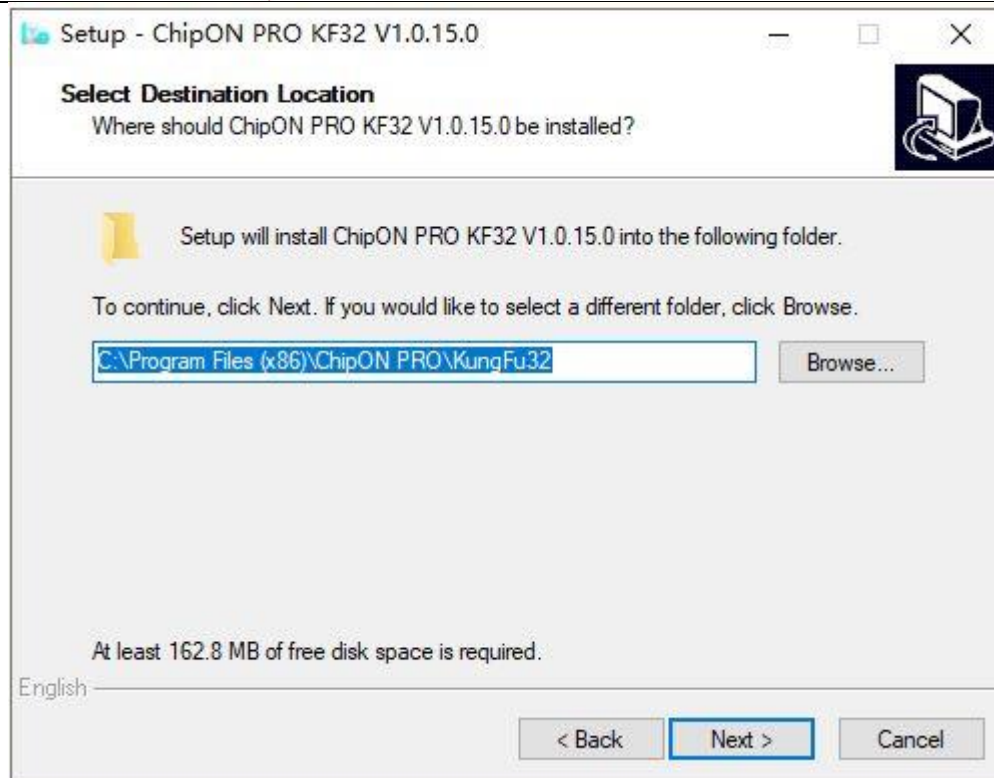
When you click Yes, Same to Uninstall, Please Confirm it.



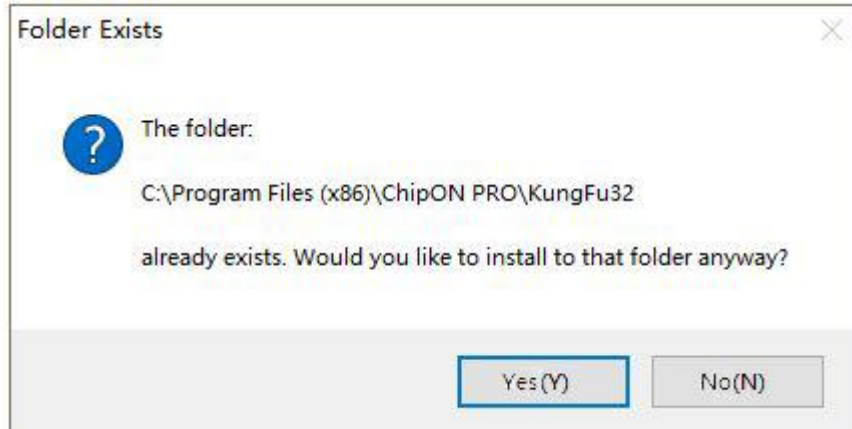
❖ First page of installation



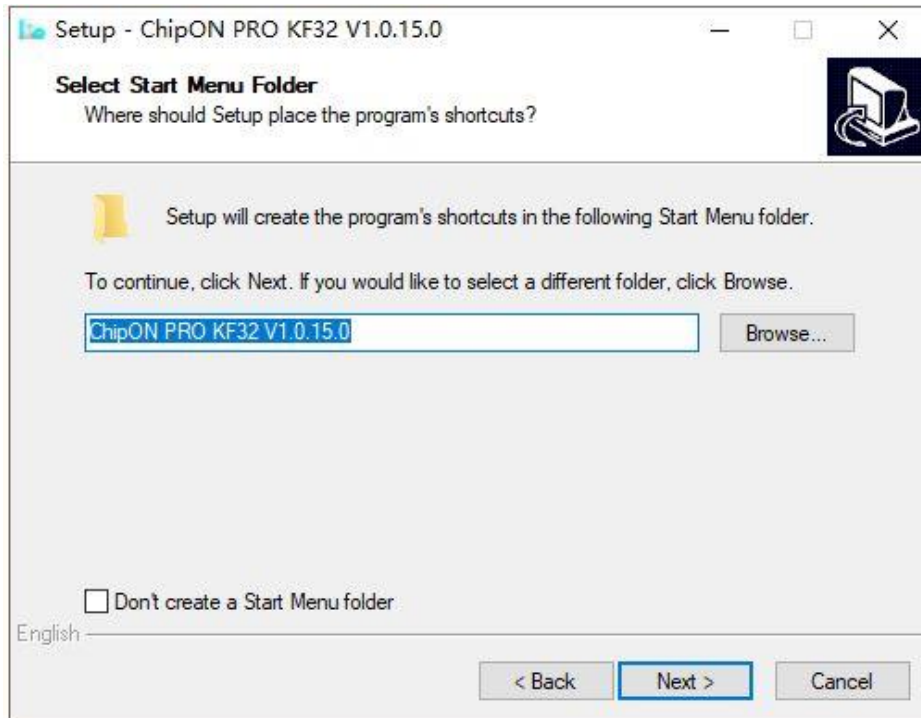
❖ Click next to contionu:



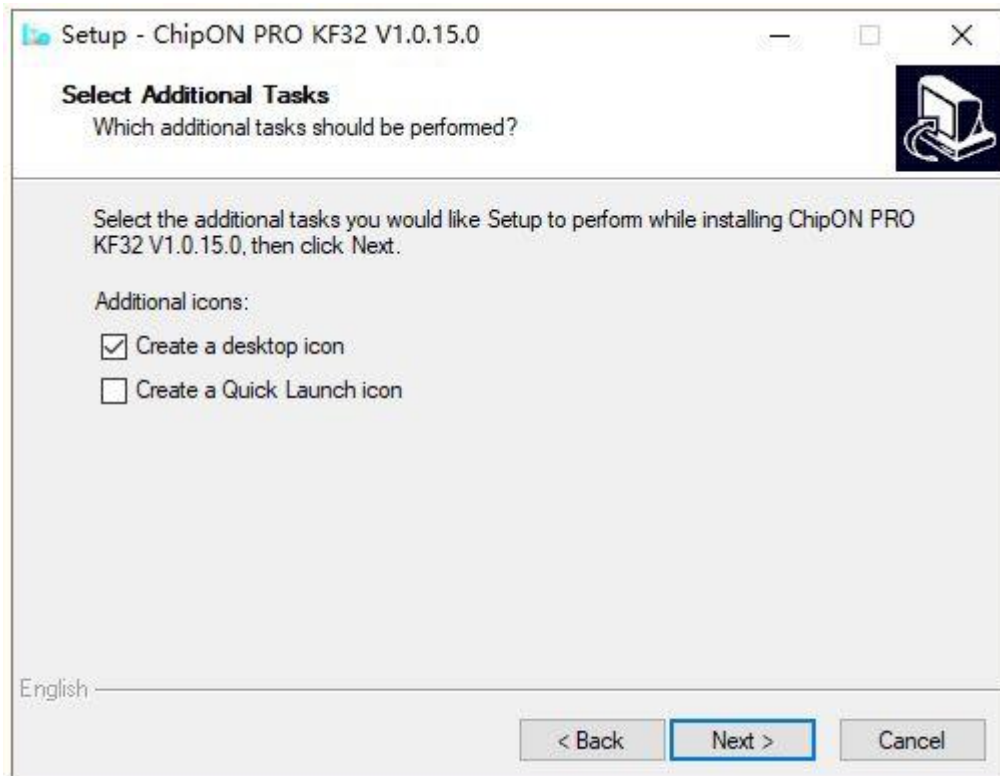
- ❖ Use default path, Or Select you path by click button “Browse” , And then click Next, but if the path is already exist, show confirm message.



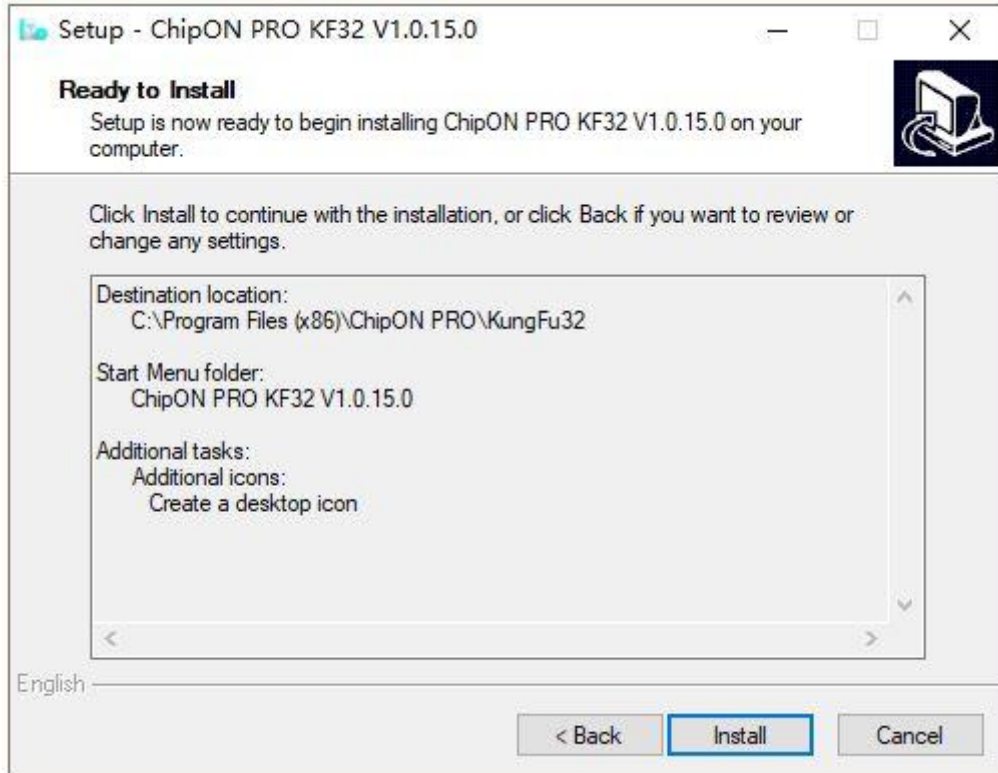
- ❖ Start Menu wizard page, default and click Next:



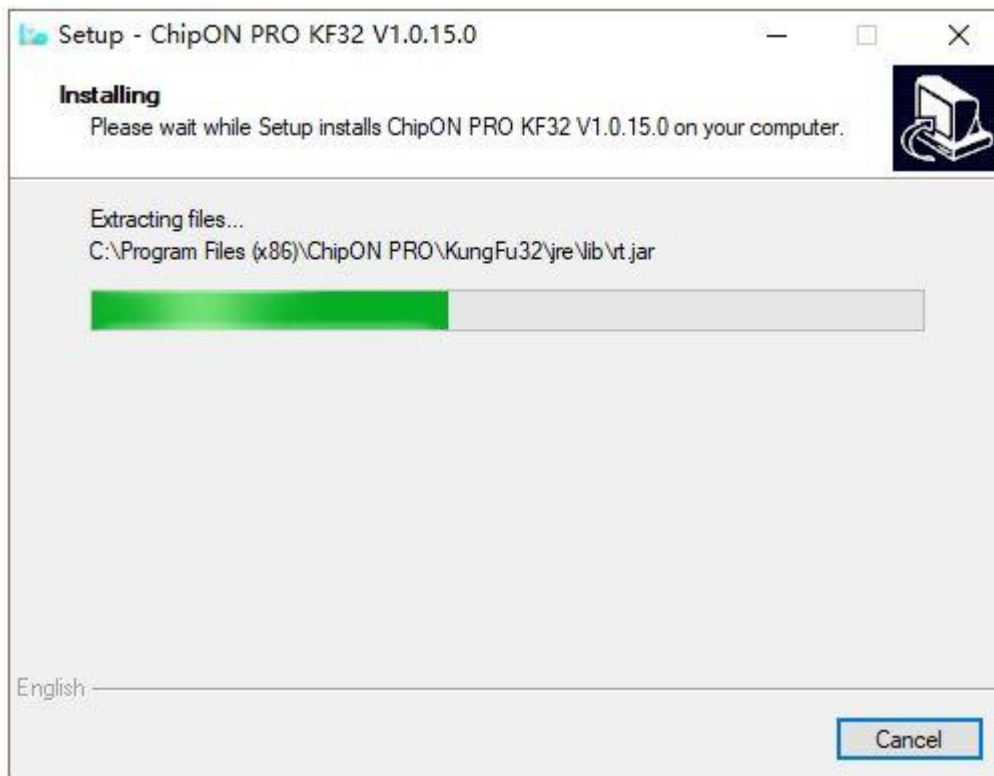
- ❖ Task option page, Default Creat Shortcut To Desktop, Click next to continue:



- ❖ Show Install Task Page, Click Install To continue:



❖ Wait Install Finish:



❖ Install Finish, wizard page Of option to run, On first time, wo advise

to select run Certificate setup and driver setup, otherwise you can only select run software or not. If you find this install fail with driver, see description about Driver Setup followed .



2.2 Programmer Driver Setup

When first install, select install Certificate and Driver, Follow the wizard, The Certificate and Driver will be install to PC. But Not Select Or Find any error, you can goto the install path, and open the path of “KFLink\USBDriver”. Right click and Select run file whit administrators to install flollow:

“1 Install Certificate(Admin).bat”

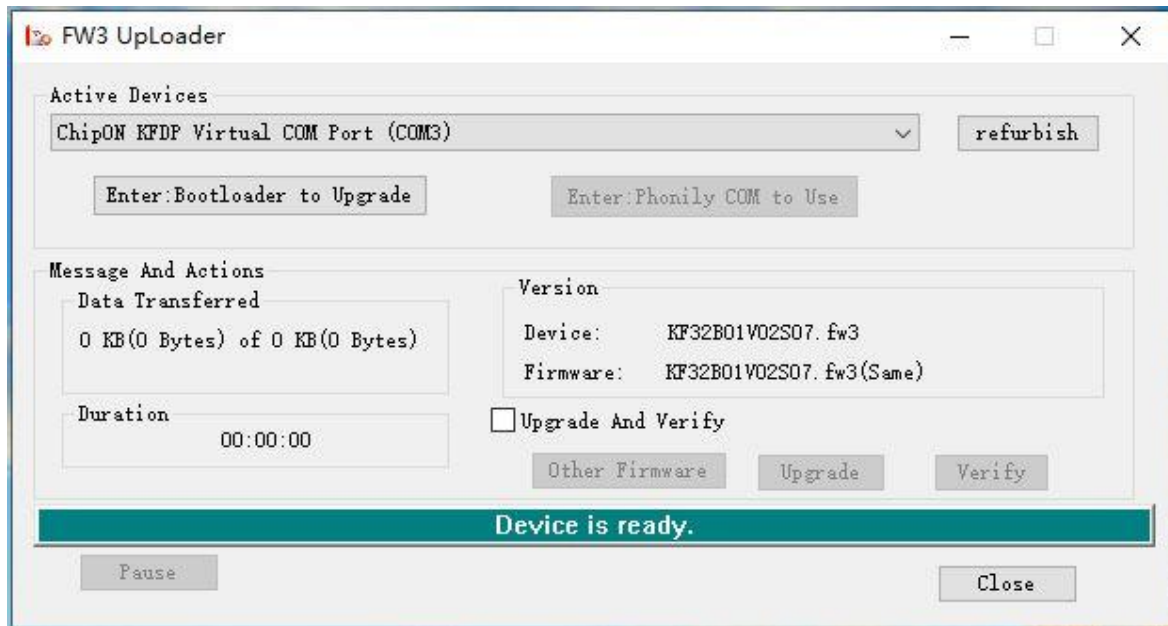
“2 Install Driver.bat”

The programmer is know as “ChipON KFDP Virtual COM Port” which storts under Port(COM&LPT) in Device Managera of Computer Management. but if it works in firmware mode, It is know as “ChipON KFDP GenericUSB” under Universal Serial Bus devices.

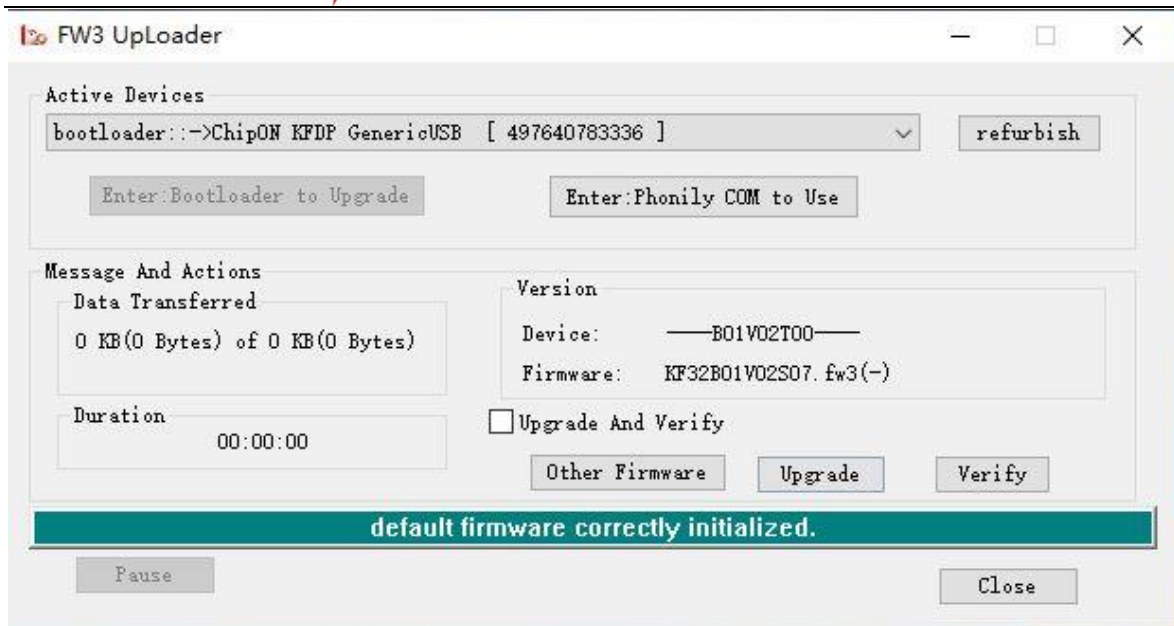
2.3 Firmware Update

Driver And Firmware is Store In the Install Path ChipON PRO KF32.

- On Path “KFLink”, There is Firmware and other server file, the app file is “FW3 UpLoaderEN.exe”, You can run it or run from menu of ChipON PRO KF32.



The application of firmware update find all effective set in combox, As know The work mode of select set, You can click “Enter:Bootloader to Upgrade”, then the set will be reconnected, And worked in bootloader mode. You can select another firmware or use firmware of auto associated with software, click “refurbish” button, and wait the end of undate. The message followed course and result will be show in UI. You can select another firmware, but who must match the set by version which is show in format of BxxVxx. You can also click button “Verify” to check if the firmware in set is matched the firmware file.



After update finished, You need to click button “Enter:Phonily COM to Use”, then the set will be reconnected, And worked in mode of ChipON KFDP Virtual COM Port, Now close this firmware application ,and you can run software of ChipON Pro to program with the set who have new firmware.

2.4 Run the software

- From Start Menu: Start --ALL--ChipON PRO KF32 VX.X.X--ChipON PRO KF32 VX.X.X, Click it .
- If you creat Shortcut to Desktop by wizard. Please double click it.



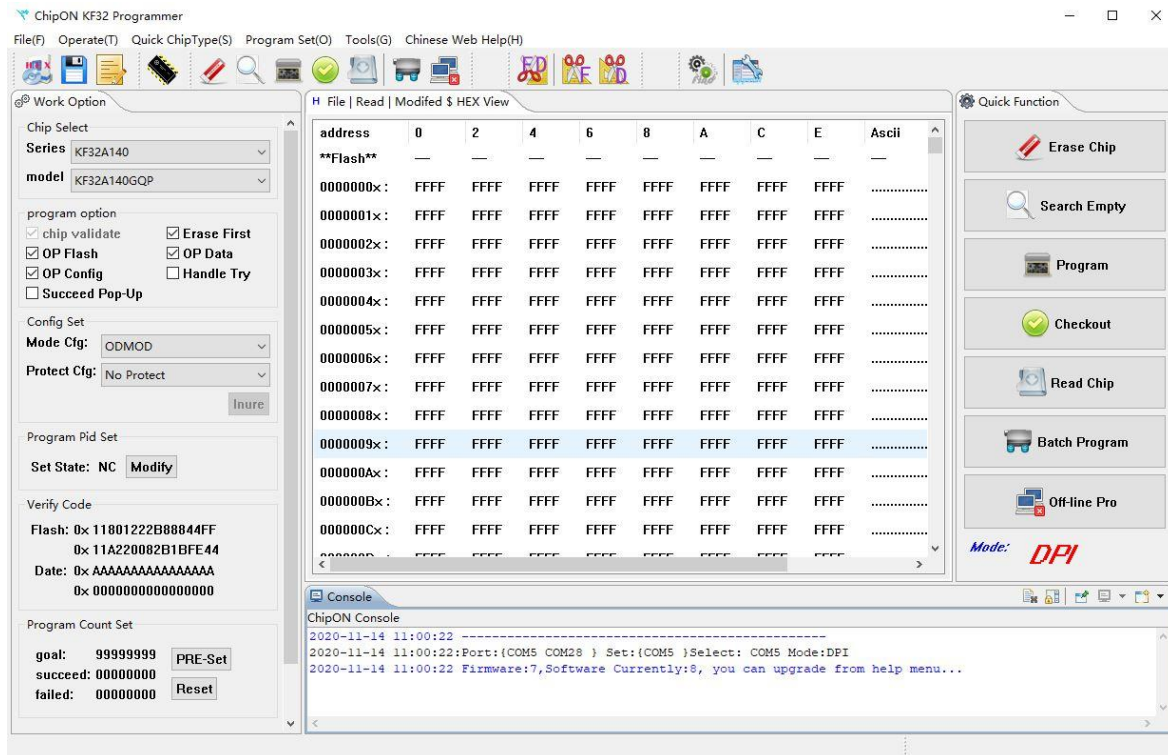
note: it' s a colligation of launch which contain ChipON IDE and PRO, Both KF8 and KF32 Series.

- Open the Path Of Install,double click file of “chiponprogram32.exe” .



chiponprogram32.exe
Setup Installed
ChipON

- After launch finish, the main page is show followed. Main function contain Select chip, Load hex file, Chip Earse, Search Empty, Program, Read and Checkout. Also support online batch program and down hex to programmer for offline program.



3 Function Introduce


The software of this ChipON Pro KF32 is used to program the chip, which only support load binary code such like hex file.

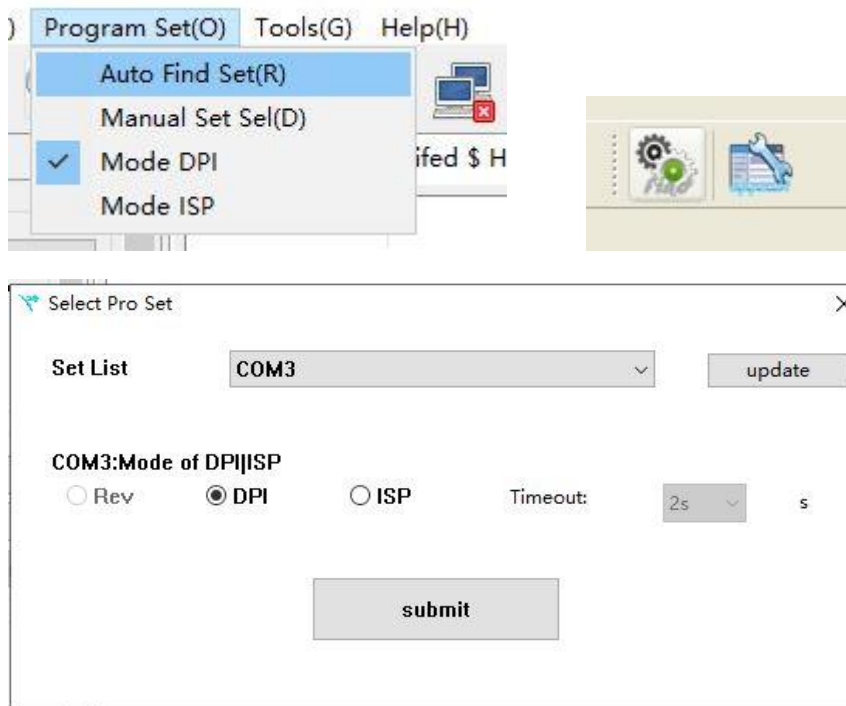
Based on the different encryption modes of chip, if you want a specific requirement like multiple development by different provider, please design specific software yourself, but also you can tell us to help design the application.

All funciton will print message in console, with them you can judge that

whether the operation is finish correct.

3.1 Select and Identify Programmer Device

Normal, you can refurbish and identify programmer throw “auto find set” function, which you can find it by select Program Set and then select Auto Find Set in menu, also you can click the icon  from toolbar to use this function. The result will be printed in console.




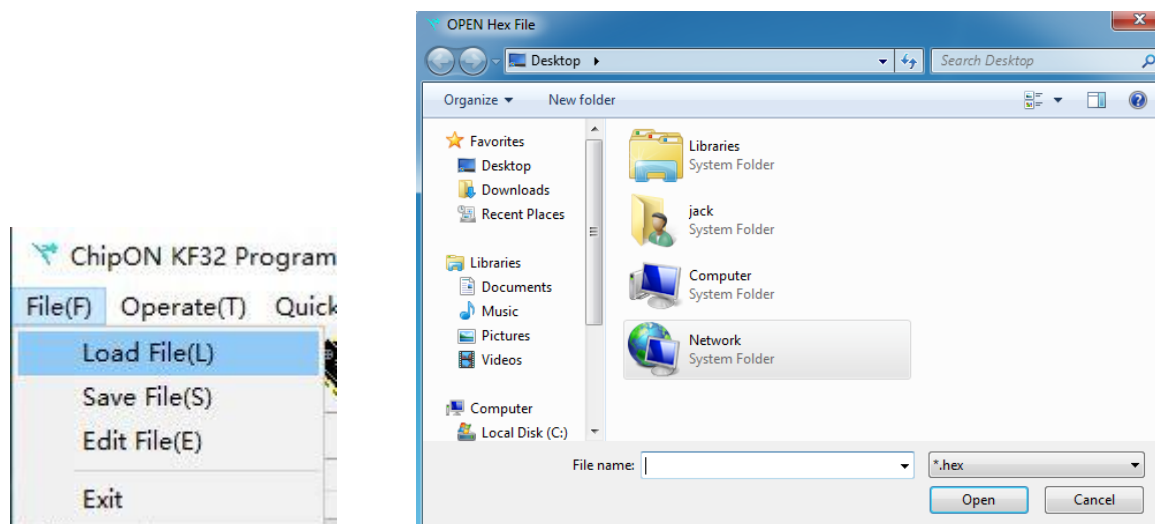
If there is more than one set can be used, and the “auto find set” function result is not your prolepsis, you can use Manual Set Sel function to designate it. You can click update button to refurbish and select set by Set list, then you can click submit button to make sure you select, the result is printed in console.

The software is designed to have different mode to program chip, the mode of DPI is that programmer program chip with pin of program/debug, and the mode of ISP is that programmer program chip with pin of usart0, also one pin for enable is used. If you want, you can switch the mode throw the menu of Program Set, but also in this Manual Set Sel dialog where the Timeout config is

effective only by mode of ISP.

3.2 Load Hex Code File


Select File and Load File from menu or Click the icon  from toolbar to open Load File Dialog.

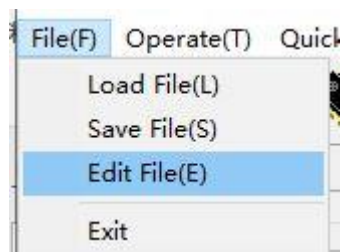


Select the right hex file, double-click it to load or select the HEX file, and then click Open button to load. As the result, the hex file contents will be display in HEX View.

3.3 Edit Buffer

This function usual is used testing or filling the unused program space.

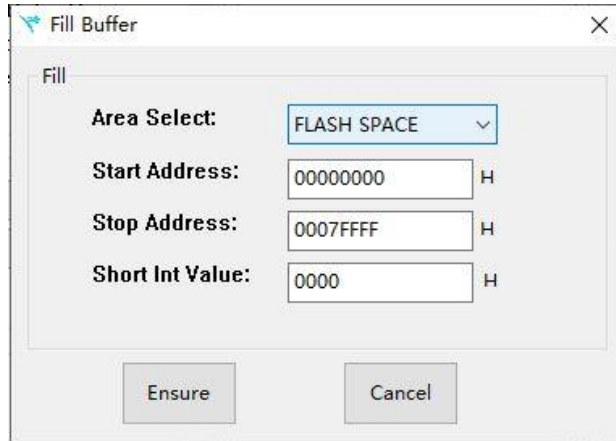
You can change the content both in Flash Memory or Date Memory After you load the Hex file. Click the icon  from toolbar or Select Edit File from Menu of File.



As the display of dialog, you can click combo of area selection to select Flash SPACE or DATA SPACE. And then modify the Start Address, Stop Address

and Value. Note that the input must be set in hexadecimal.

Please click “Ensure” button to do change and exit, but also you can click “Cancel” button to exit only.



There is another way to modify the content of Flash or Date, but that you can only change one content once. You can double click on the value which you want to change, and then input a new value in input text. After your input finish, you can click left key of mouse on another position or click enter key of keyboard to do this modify.


3.4 Options Setting of Program

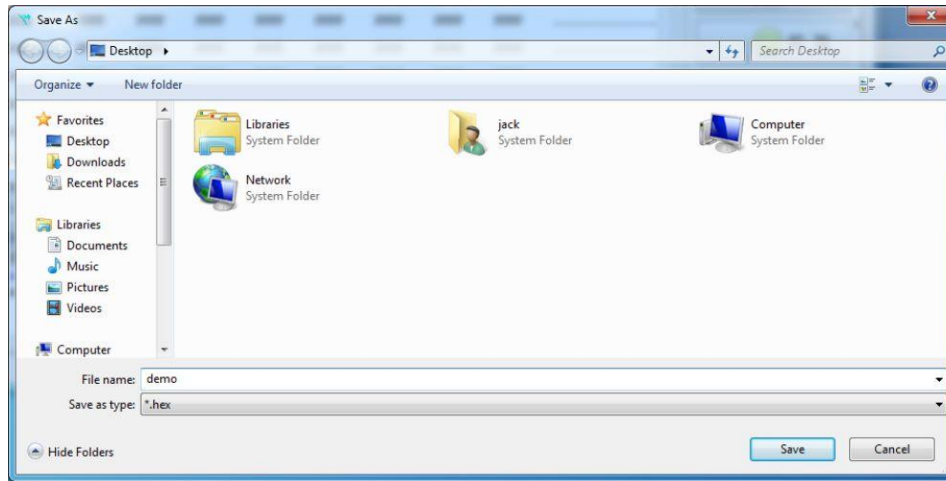
Normally, the options are suitable for all functions of online operation. For example, if uncheck the **Op Flash** button, the operation such as Search Empty, program, read and checkout will ignore the part of Flash memory.

The option of Handle Try is designed to adapt to board, when power on by programmer but raise slowly because of that with bigish capacitance, Try to find proper time to communicate with chip.



3.5 Save File

You can click the icon  from toolbar or select File ,and then select Save File from menu ,that will open a save file dialog.



Select the path to save the HEX file and input HEX file name, and then click the Save button. HEX file with user defined name and located in the destination folder will be created. If you select cancel, it will exit save.

3.6 Batch Program

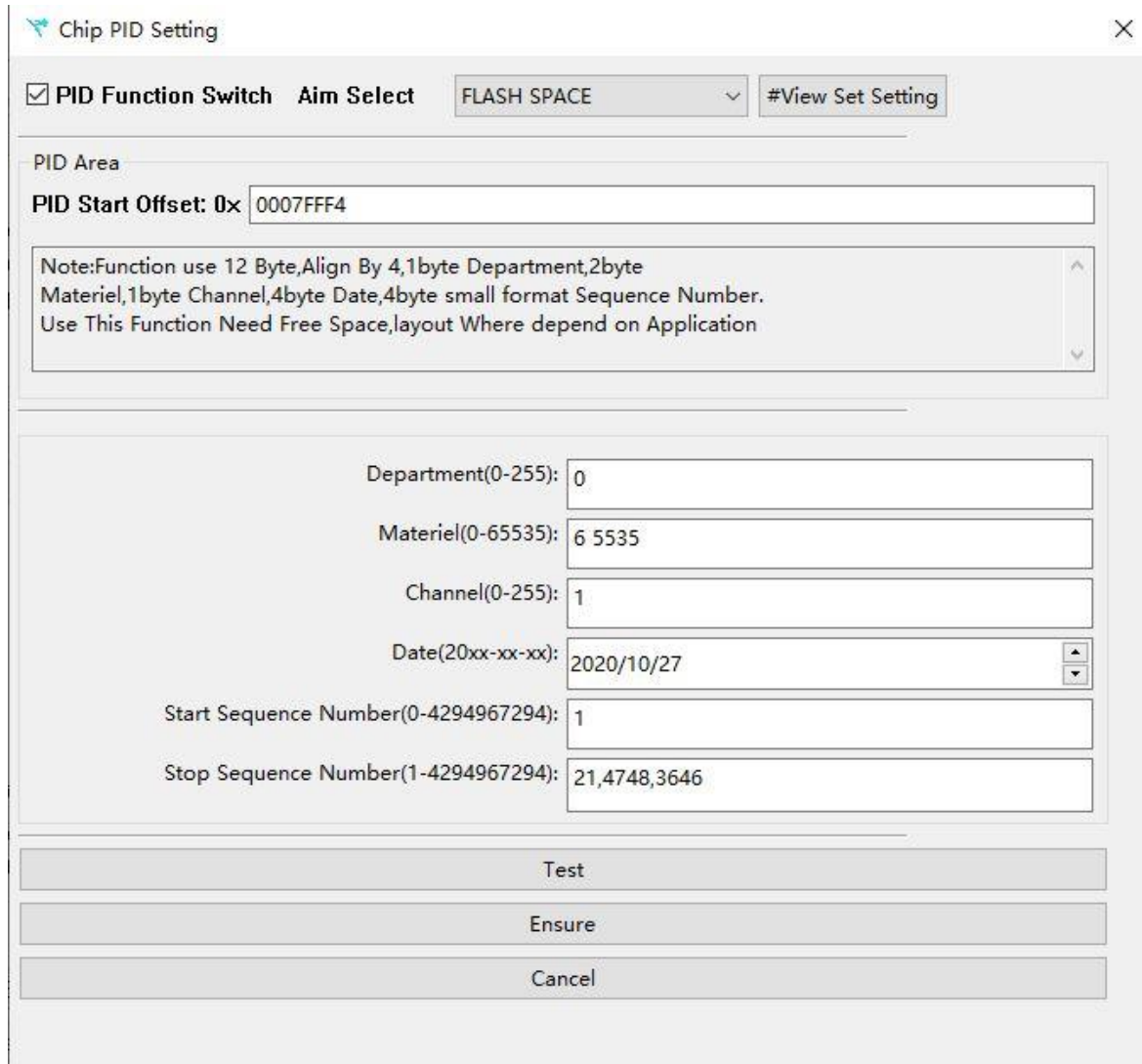
Click Batch Program button from shortcut toolbar in software right to open a batch program progress bar window. In the meantime, it prompts you to place the chip and starts program after detecting the chip. It will prompt you to take away the chip after finishing chip program.

You can click Stop button to cancel batch program until chip program finish.

3.7 PID Program Increase Setting

The Function is designed to use free area to save several data which can be used to backward product, or server input for algorithms. Look as the display of UI, the function use 12 bytes space address and save difference sequence number.

As Know well, with the function, the code in Chip is different with hex file content, That is means it can not be checkout by sig arithmetic. but rightly Materiel Message or other message can be use as one character of code.



Note1: Clike Test and Ensure button with PID function enabel, PID message will Change Hex object ,And The result will isochronous display In Editer Area. Once Program Result is OK, The Sequence Number will Add 1. If at Online mode, The increase result also will isochronous display In Editer Area.

Note2: The button ##View Set Setting will get PID Offline Set data from programmer and show in this dialog, but start sequence number is the value who will be write in Chip, That is means it can be one new start.

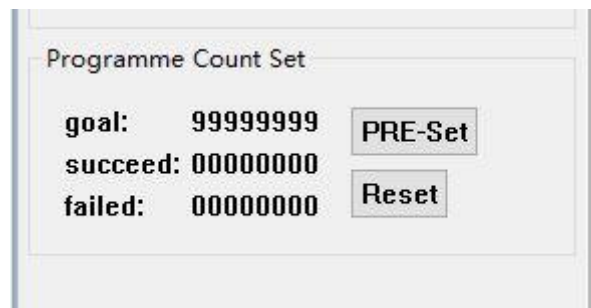
3.8 Online Programming

The steps of online programming follow:

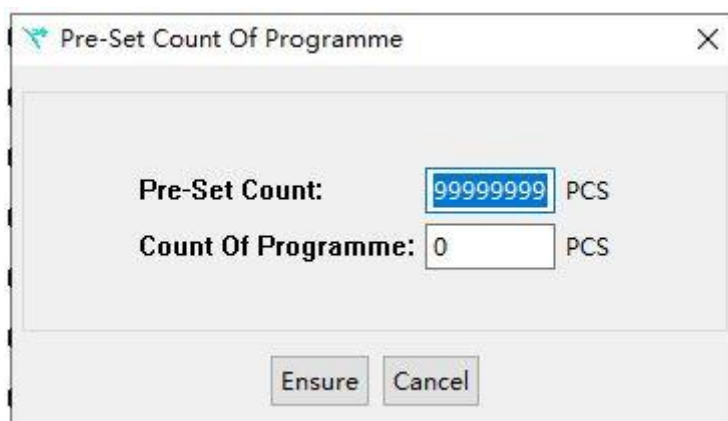
- Step 1: Connect the programmer hardware to the PC.
- Step 2: Start the programmer software (I.e. the PRO software).
- Step 3: Select the chip type.
- Step 4: Load the HEX file.
- Step 5: Set the programming options.
- Step 6: Place the chip in the programming seat.
- Step 7: Click **Program** button.
- Step 8: Take out the chip that is programmed.
- Step 9: Repeat the step 6~8 until all chips are programmed.

3.9 Programming Count Setting

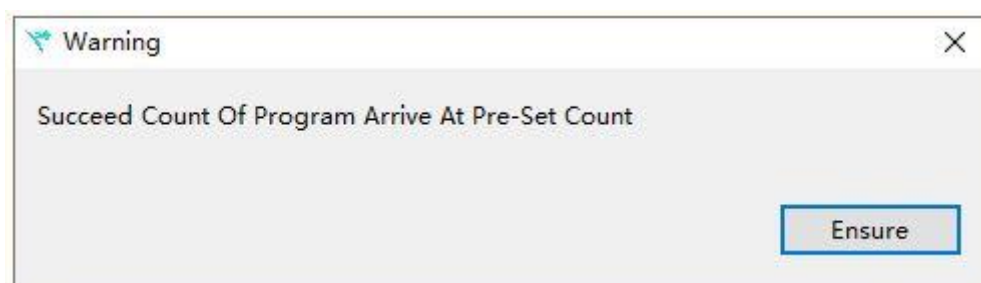
Click PRE-Set Button In “Programme Count Set” On Left View of “Work Option”.



In Wizard page, Input the “Pre-Set Count” of chips to be programmed and “Count of Programme” of chips has programmed. Then click “Ensure” button to inure.

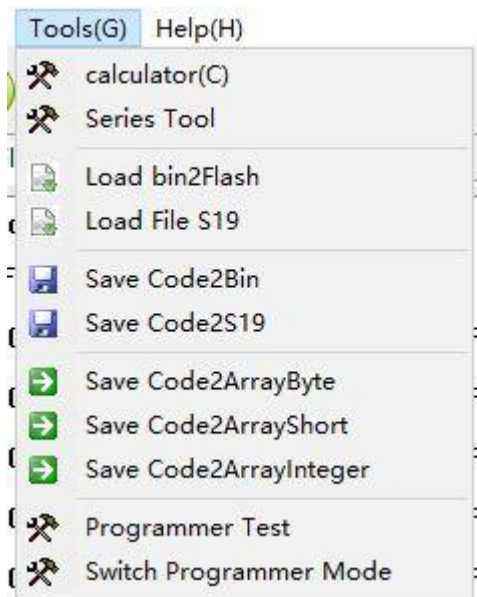


With Online Program Mode, When OK Count of Chip arrive to Pre-Set Count, Show Dialog as underside.



3.10 Other auxiliary functions

Some additional auxiliary functions are also provided by this PRO software, such as Calculator, Serial tool and Convert hex to bin.



In addition, this PRO software also owns the functions of programmer detection and programmer serial port switching (Note that the DAT means RX and the CLK means TX whit PC).

Click **Tool** from menu bar and select to use the functions above.

4 Offline-Program

Offline-Program is designed to program a mass of chip. It Transmit Hex Code To Programmer who can work self-governed, The Programmer do program alone chip Or Chip in the board. Follow the steps with description in underside.

4.1 Ready for Offline Program

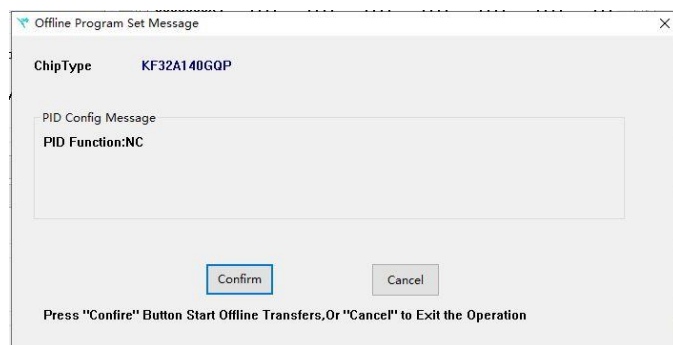
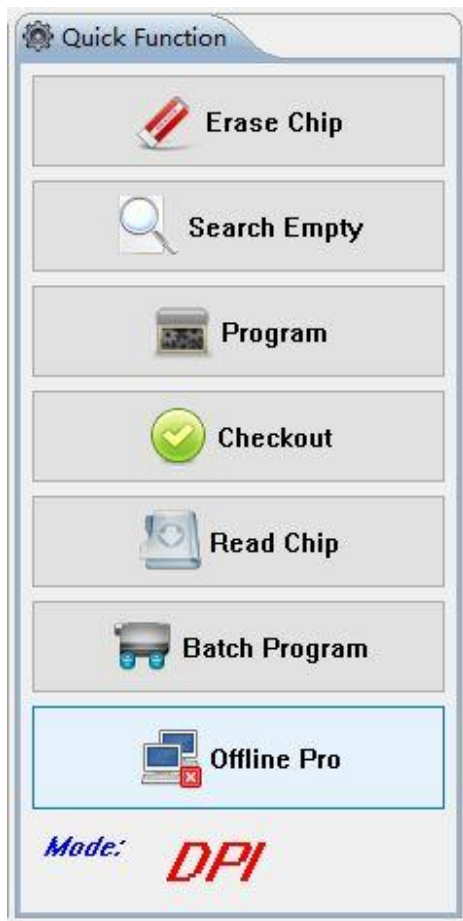
First Download Code To Programmer. Follow these steps to finish this operation:

- Step 1: Link programmer to PC by USB transmission line.
- Step 2: Start software, Make sure programmer is linked to software.
- Step 3: Select your chip name.
- Step 4: Load Code which is saved in hex file.
- Step 5: Config your options.

Step 6: If you need increase sequence function, please see above presentation.

Step 7: Click **【Offline Pro】** Button And Confirm, Transmit Hex Code To Programmer;

Step 8: Check Message in Console, Make Sure The transfers is right Finish.



4.2 Offline Program Course

After The Programmer have Hex Code Offline, You can do Offline-Program Flower These Steps:

Step 1: dial the mode to “offline”

Step 2: Place Chip.

Step 3: Press the Key to start program, Also can work under auto identify chip.

Step 4: After the program is end, you can replace another chip.

Step 5: Repeat step 2-4.

Led information:

- Enter the Offline Mode, Led “busy” Blink And then The programmer is Ready. Designed For Machine Interface, Default LED “FAIL” ON, This Means The LED signal also associated to Then signal Of “OK” , “NG” .
- When Start program, Led “busy” ON, After program finish, Led “busy” Off And then Result Led “Succeed” ON Means OK, Led “FAIL” ON Means NG.
- Enter Offline Mode, LED “Succeed /FAIL” Alternant Blink means No Offline code In Programmer, Once Do Down Offline code, There is No Show Along. So You Need Make Sure that The Offline Code which which is in Programmer Is You Want.
- Before work of program, If Result LED “FAIL” ON, An LED “BUSY” Blink With period of 1 second, It means you use increase function , and the resource is use up. if the period is 2 second, That means there is an error, such as start value less than stop value or save value in eeprom-chip fail. After the program finish, if LED “BUSY” Blink with the period above, it is the same means.

5 Other Explain

1、Enter Offline Mode, LED “BUSY” Blink, With “BUSY” Off, The Programmer is Ready. Designed For Machine Interface, Default LED “FAIL” ON, This Means The LED signal also associated to Then signal Of “OK” , “NG” .

2、Enter Offline Mode, LED “Succeed /FAIL” Alternant Blink means No Offline code In Programmer, Once Do Down Offline code, There is No Show Along. So You Need Sure That the Offline Code Which Is In Programmer Is You Want.

3、Manual or Atuo program Mode: press “Key” After Power On But Befor Mode Switch to Offline Mode. Keep press “Key” About 10s Until when LED “BUSY”

Blink. Then LED "BUSY" Blink All is Twice, Then Start Sign And Swicht Sign. Default By Download Offline Code, The Mode is Manual. You Need Press "Key" to Start Program In this Mode, Also Worked with Batch Machine Program. LED "BUSY" Blink Is Worked IN Auto program Mode, One Blink Means One time of Detect Chip.

4、 We advise do makesure that the firmware is latest befor use, You can use latest Software both ChipON PRO or ChipON IDE, And select firmware update From Help Menu. The software can download from ChipON website.

5、 Support program associated, The KEY, OK, NG signal All are valid ByLow-level, The High-level And Vdd voltage is 3.3V.

6 Auto Programmer Machine Program

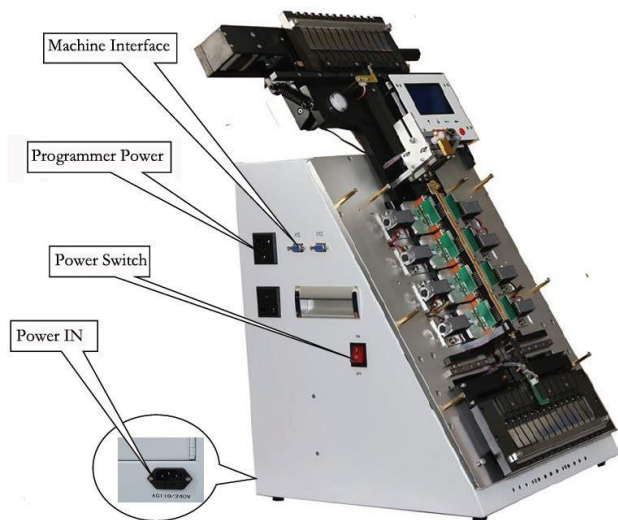
6.1 Programmer Interface

Provide batch program 5Wire auto Interface :

- 1、 Start Signal (KEY) , Low-Level Valid ;
- 2、 Result OK Signal (OK) , Low-Level Valid ;
- 3、 Result NG Signal (NG) , Low-Level Valid ;
- 4、 GND ,Level Groud ;
- 5、 VDD,Power Or High-Level (3.3V) ;
- 6、 GND, Level Groud ;



6.2 Factory Machine Interface



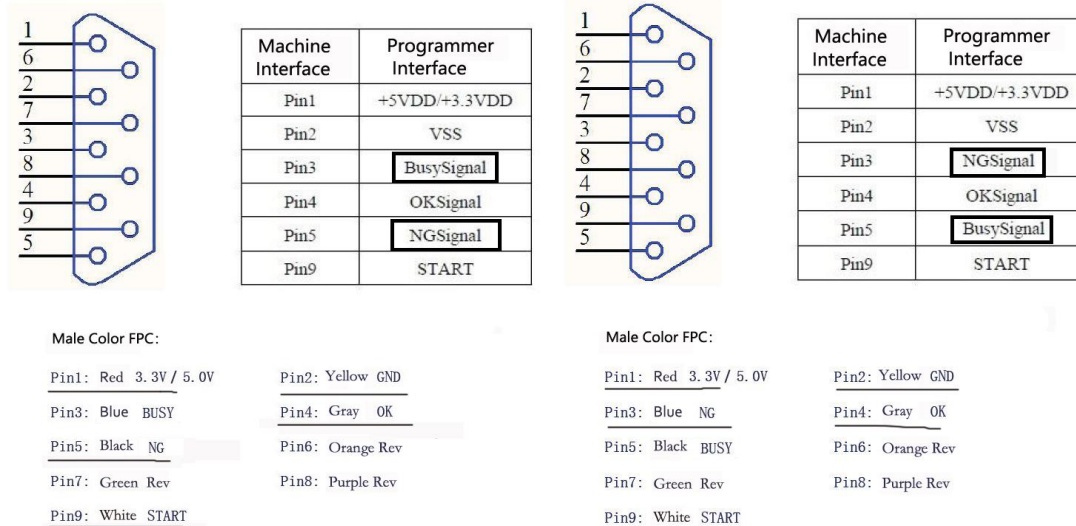


Figure1 factory interface1

Figure2 factory Interface2

Work Config : +Power、 – GND、 OK、 NG、 StarkKey , Config Low-Level Valid , As 0 or L.

BUSY Signal Config to X,As No Work.

6.3 Process Introduce

1、Work elements:Factory Machine Deal Chip Linked To the programmer, and send start key signal,Program detect the key low and do program,After program end, Programmer give result By Pin intefer and show the result by led(OK:bule,NG:red),Factory Machine detect result and transmitted chip to NG pipe or OK pige.

2、Low-Level Key Signal Need Time More then 110ms.

3、 Need appropriate machine parameter: like between chip down finish and begin send start key signal.

4、 Need specifically wire layout to reduce electronic disturb.

5、 Small disturb way Like: change GND between DAT Wire and CLK wire;Keep 5 wires layout parallel, Not use dishevelled 5wires. See: alternation DAT and GND wire At Head And Tail Of upont Line.