Important information:

1.This instruction is suitable for RT809H programmer.

2.In order to connect the programmer more conveniently and faster,please connect the hardware after installing the software.

3.Please read the instruction carefully before using the programmer.

4.Please use the original USB data cable.

Copyright Statement

1.1 Brief

1.1.1 What is RT809F?

RT809F is a kind of cost-effective,reliable and fast universal programmer series,suitable for all the computers or laptops based on Pentium IV processors or the better processors.When working it can communicate with the USB2.0 fast port of computer directly,with driver program inside software,which makes installing operation more convenient.

1.1.2 Programmer Characteristic:

- Supporting Windows XP,Windows Vista,Windows 7,windows 8 and windows 10 ;
- with low-power consumption,can be used as VGA signal generator,easy to repair ;
- Support 24/25/93/95 series serial SPI Flash. EEPROM offline read and write.
- Support 26/27/28/29/30/39/49/50 series NOR Flash/ PROM read and write;
- Support TSOP48 and BGA footprint NAND Flash parameter automatic identification and offline reading;
- Support the mainstream device,including E/EPROM、MCU、EC、SPI NOR flash、parallel NOR flash、SPI NAND,etc ;

  NAND_AUTO can identify most of the NAND to read and write;
- I2C/ serial port ISP has strong function,compatible with most of the LCD chip scheme,can check the printing information on line and read and write on line;
- NOR/NAND chip,can read and write the EC chip of laptop on line or off line;
- Support the IT8/KB90/NPCE/NEC16 series of laptop mainboard’ s EC chip to read and write;
- High-speed USB port,USB driver with WHQL certification,the reading and writing speed can be as much as 25 MB/S;
- Full driver structure,free software upgrade,the universal socket to reduce the using cost for the user.

Attention:The chip with 32 pins or more need the PEB-1 expansion board together to do the writing.

1.1.3 Instruction Tissue

This instruction consists of three parts:
The part one is to introduce RT809H,including the system requirement,software and hardware installing,etc ;
The part two is the detailed instruction of software commands and each function;
The part three is appendix,including the user support and the wrong message.

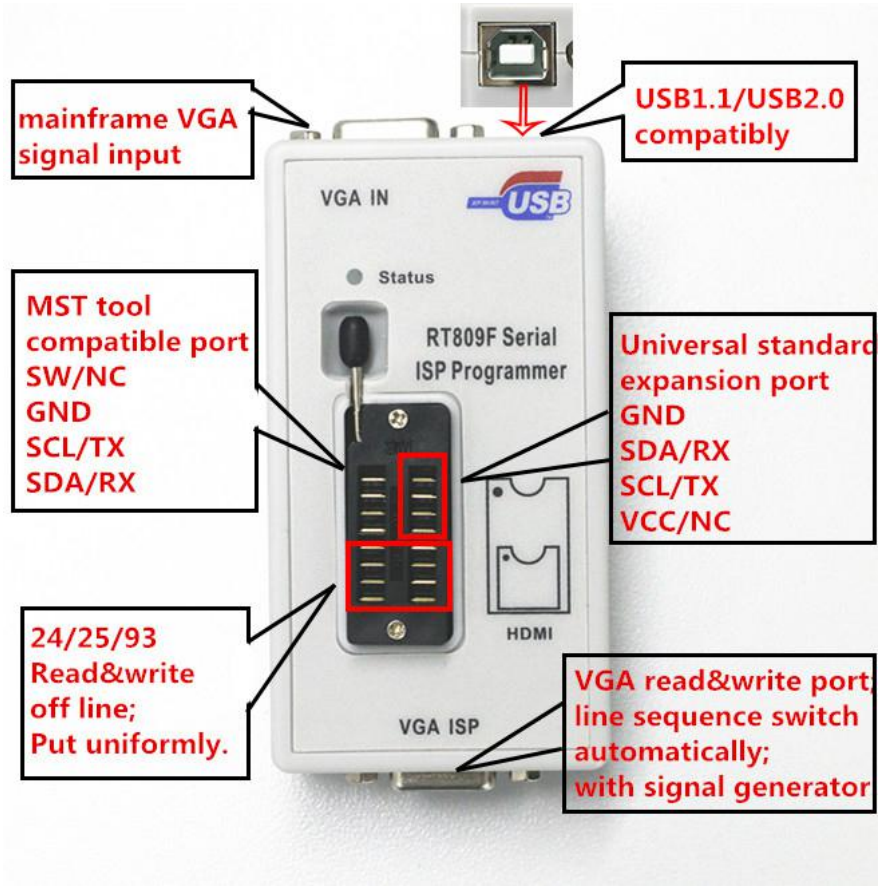
1.1.4 System Requirement

Minimum system configuration:

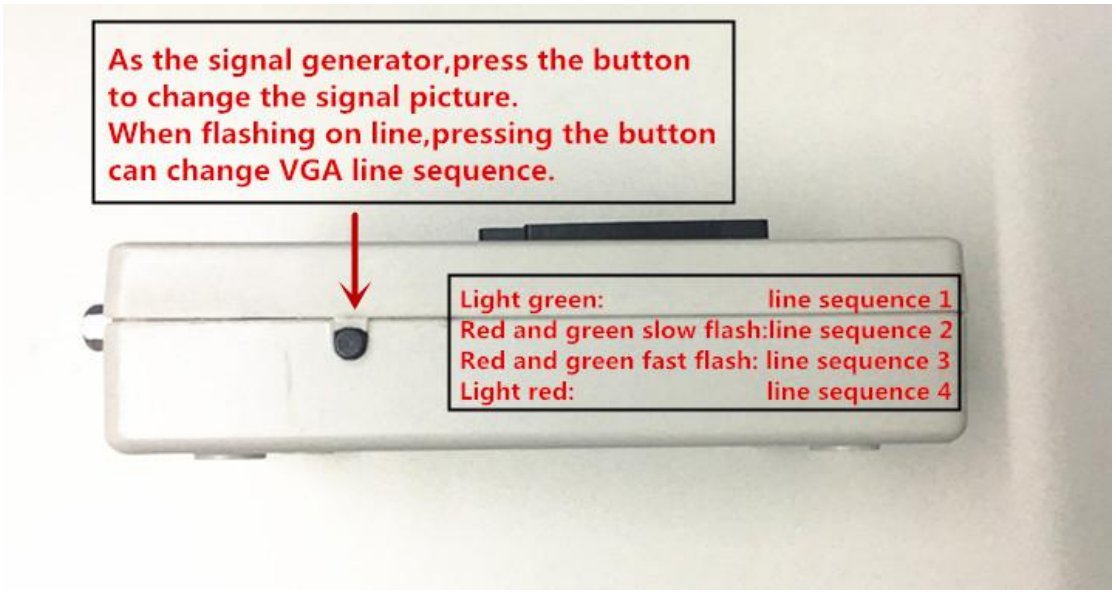
- Pentium IV and above compatibles,desktop or laptop computer,at least a universal serial main line port conform to USB2.0 high-speed standard.
- **Windows XP/Vista operating system.**
- The hard disk with at least 1G free space.

1.1.5 Programmer External Port Instruction

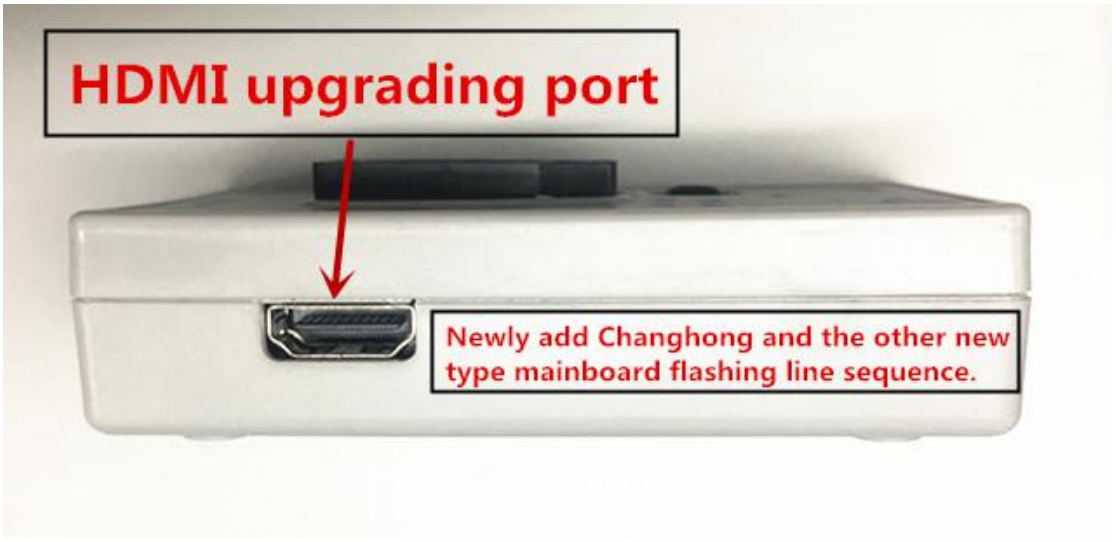
- **Front view**



- **Left lateral view**



- **Right lateral view**



- **Port instruction**

"VGA ISP" can be used as VGA signal output,be connected with the VGA port of the board when flashing.

"VGA IN" is the VGA signal input,can be connected with the computer graphics.
When unconnected,VGA ISP will output the VGA signal produced by itself;
When connected,VGA ISP output the computer graphics signal;

"HDMI" Digital high-definition interface" can connect with the HMDI port of the flashing board.

1.1.6 Programmer Packing

The standard packing:

- Programmer mainframe 1
- SOP simple soldering board 1
- USB2.0 high-speed cable 1
- VGA connecting line 1

Chapter 2 Software Installation

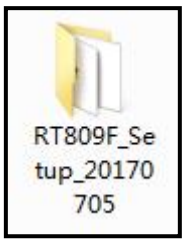
2.1 Software downloading

- If you are the first time to use RT809F USB universal programmer,please surf the programmer official web to download the latest software.
  http://www.ifix.net.cn/thread-325-1-1.html

Like this:

- Downloaded file：

Need to be unzipped：



- Open the folder

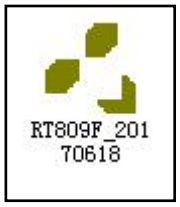
- Open the Installation Notice first

```
Installation Notice:


1.First install the programmer official software
“RT809F_20170705.exe”;


2.After installing successfully please install the third-
party toolchain software :“ToolChain_RT809F.exe”.
```

- Attention : The programmer can not be connected before installing.

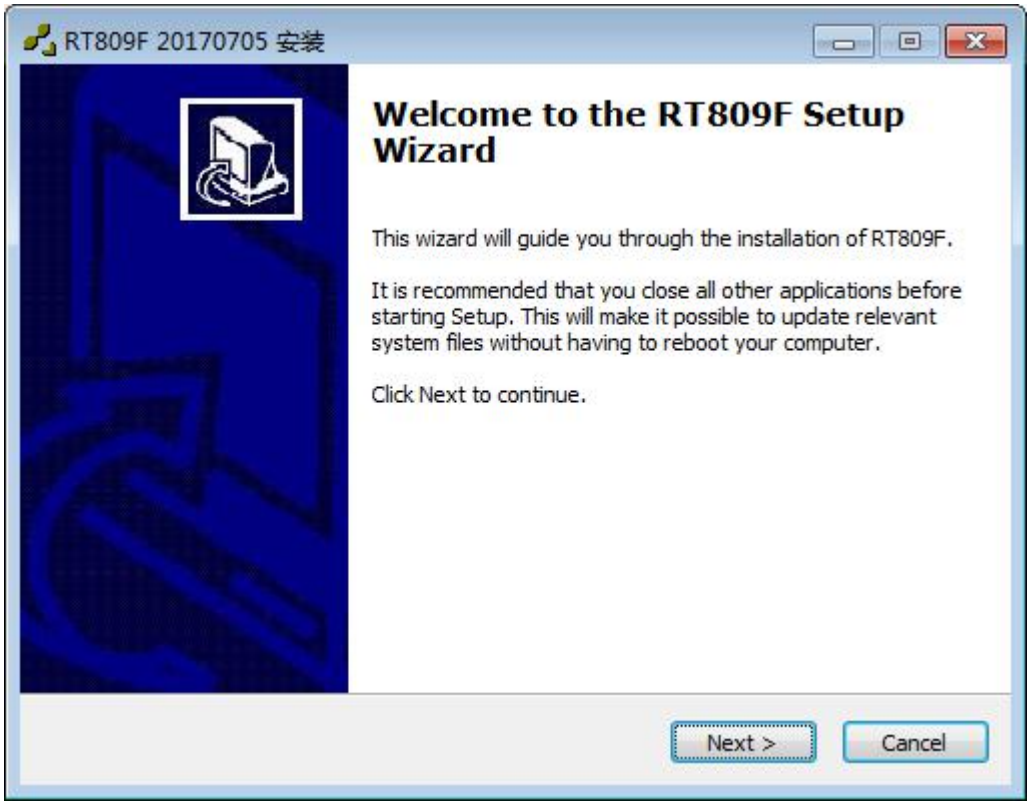
2.2 Software installing

- Begin to install,double click this icon;

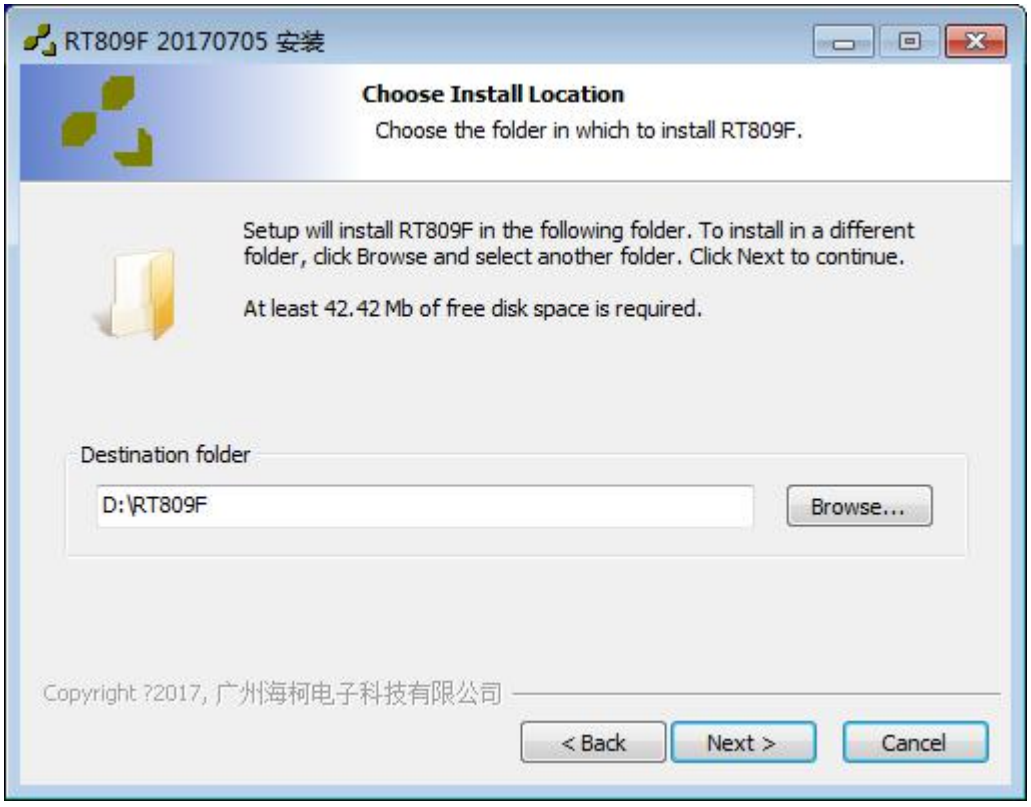


- Click “OK” ;

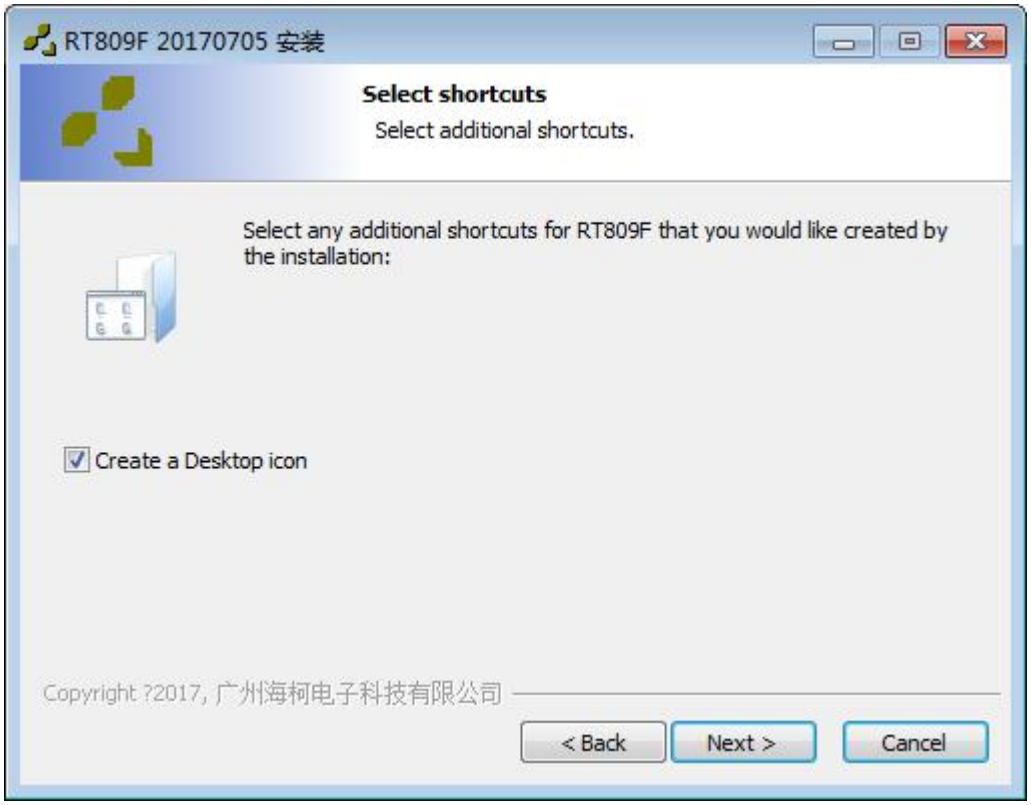
- Click “Next” ;



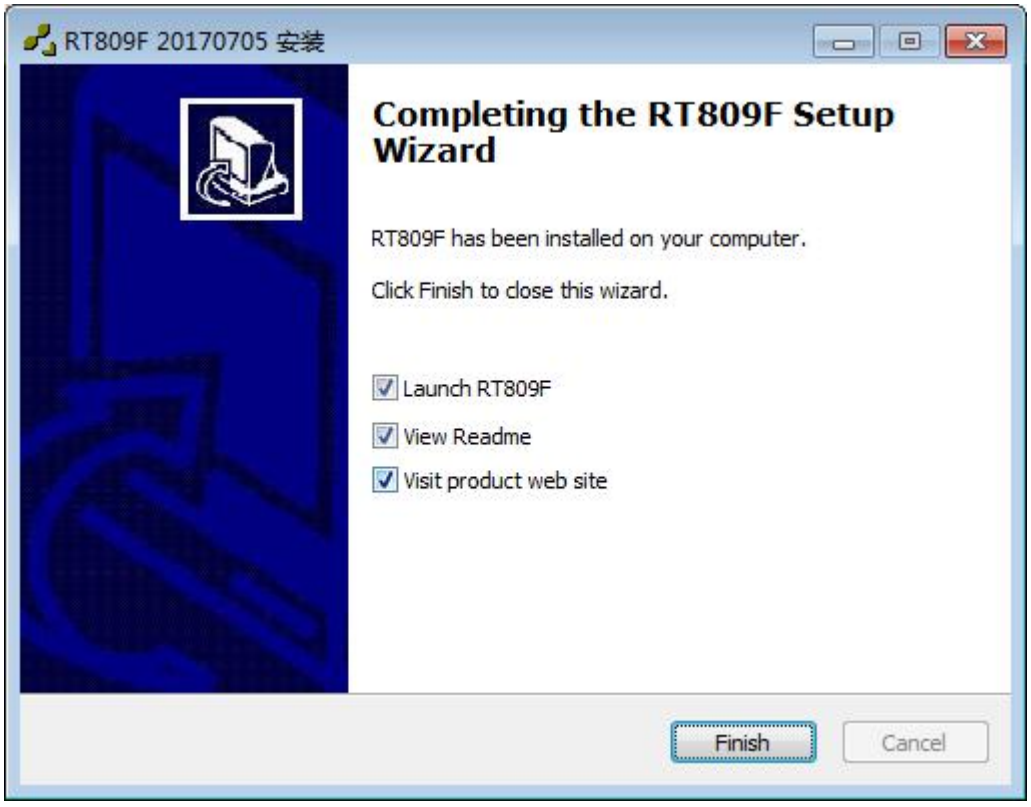
- Click “Next” ;



- Click “Next” ;



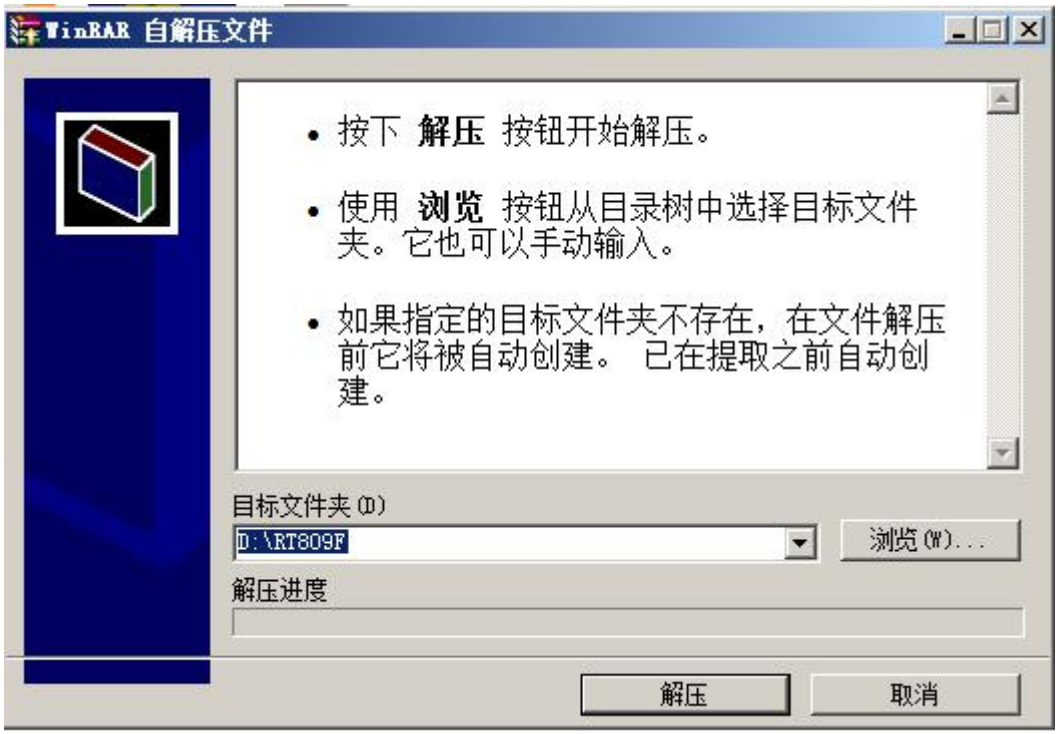
- Software installing finished.



2.3 Installing the third-party toolchain patch

- Double click this icon ;

- Click to unzip；



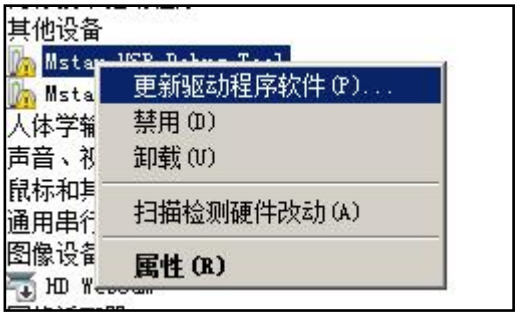
- Wait for the progress bar to finish。

2.4 Driver installation

- The system of window 7 or more can install the driver automatically,just wait for a moment ;

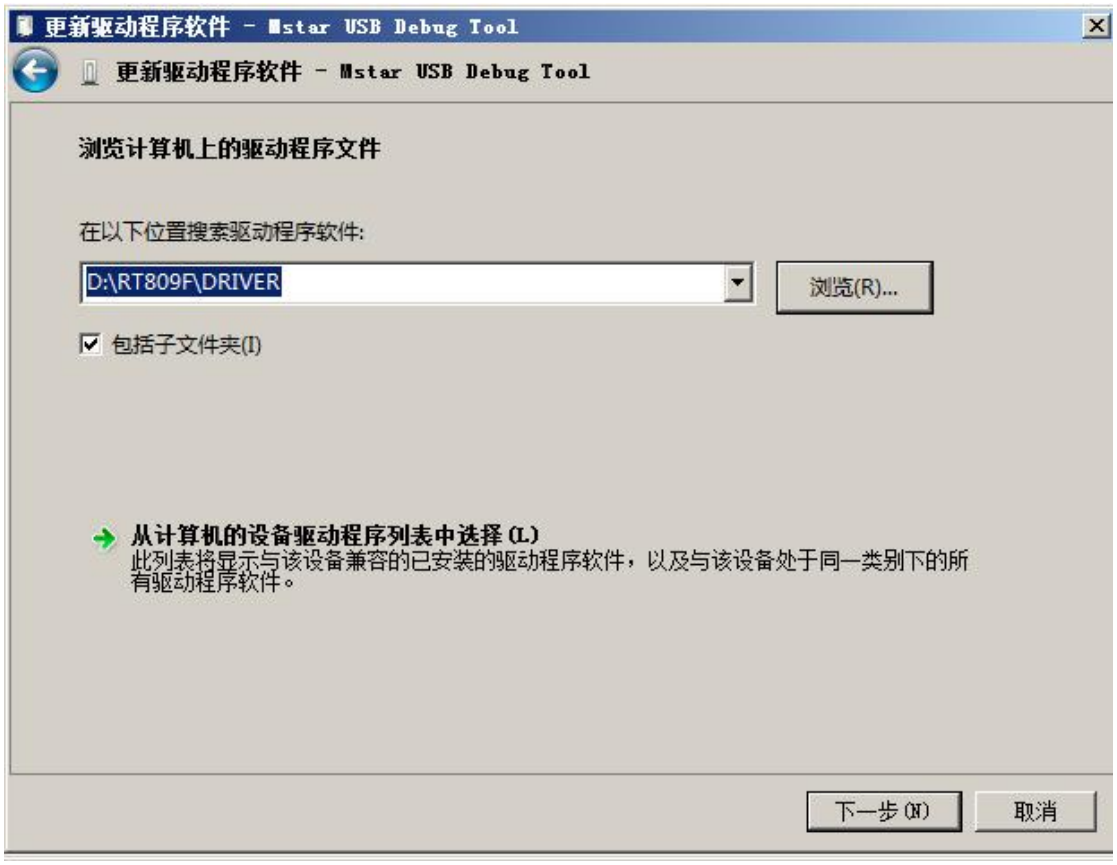
- If automatic installation failed,you can install manually,find the hardware without installing driver in the device manager;

- Click the right mouse button and click “upgrade driver software”;



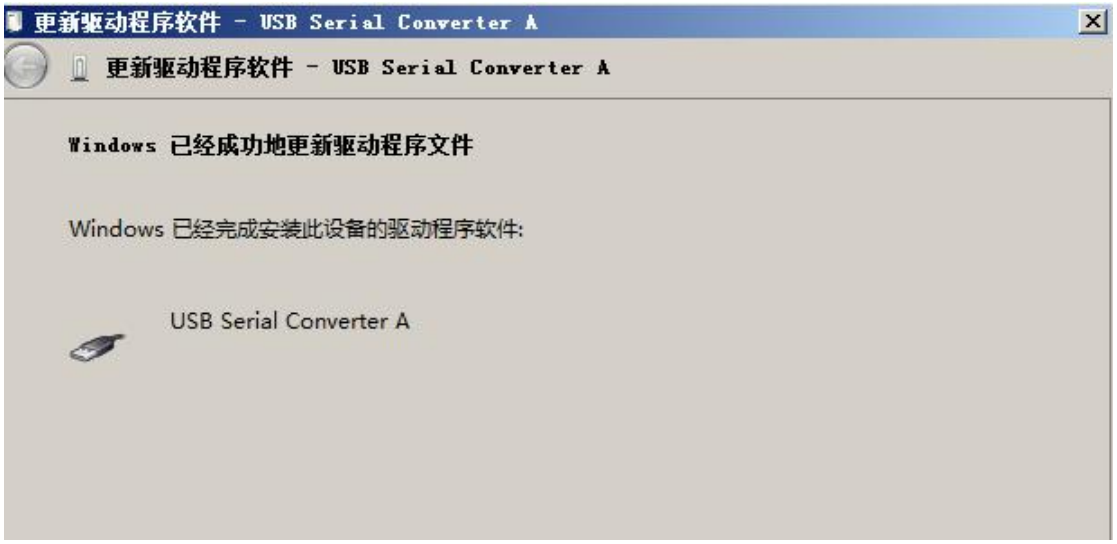
- Choose “Through the computer to find the driver software(R)” ;

- Click “Browse”；



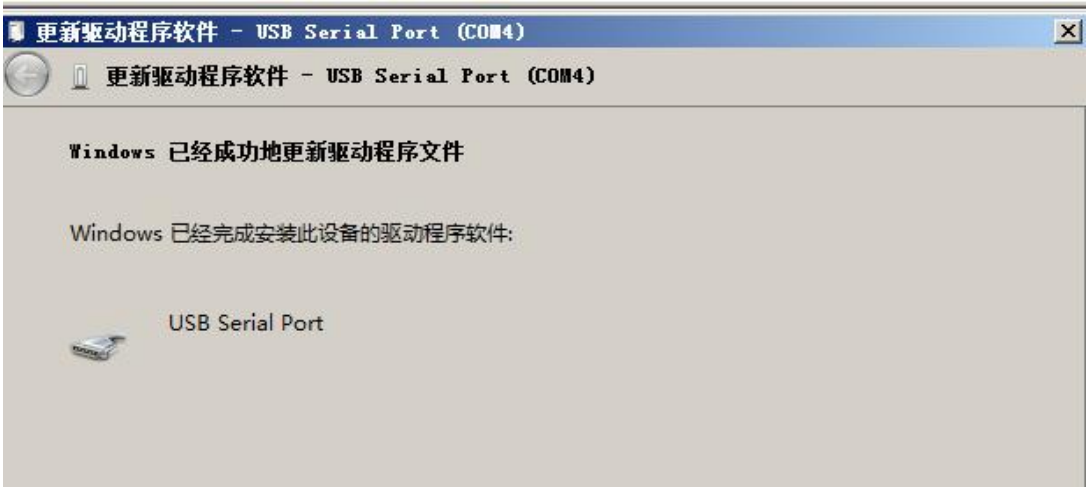
- Choose D:\RT809F\DRIVER；

- Click “OK” and “Next”;

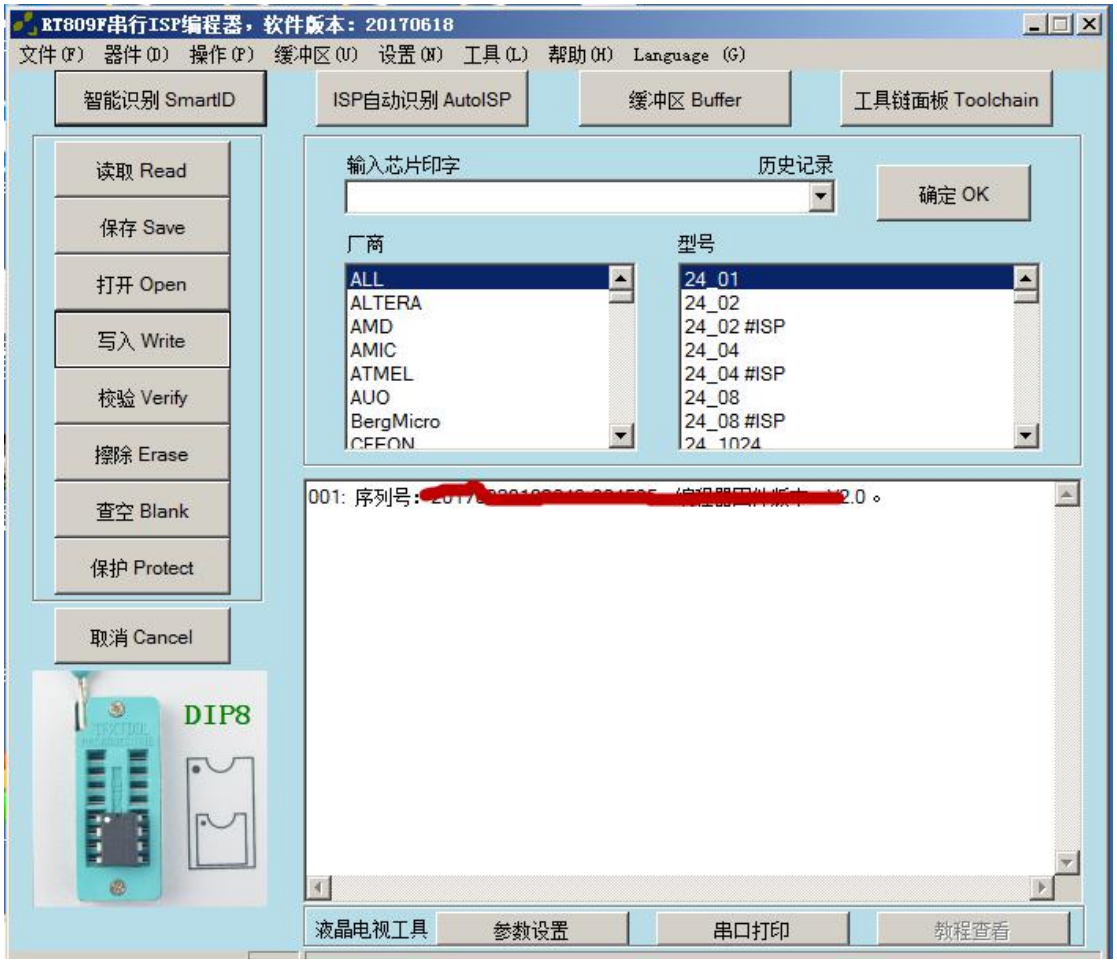


- Next install the other 2 drivers in the same way, ;

- USB serial port driver,the corresponding ground serial port of programmer is COM4;



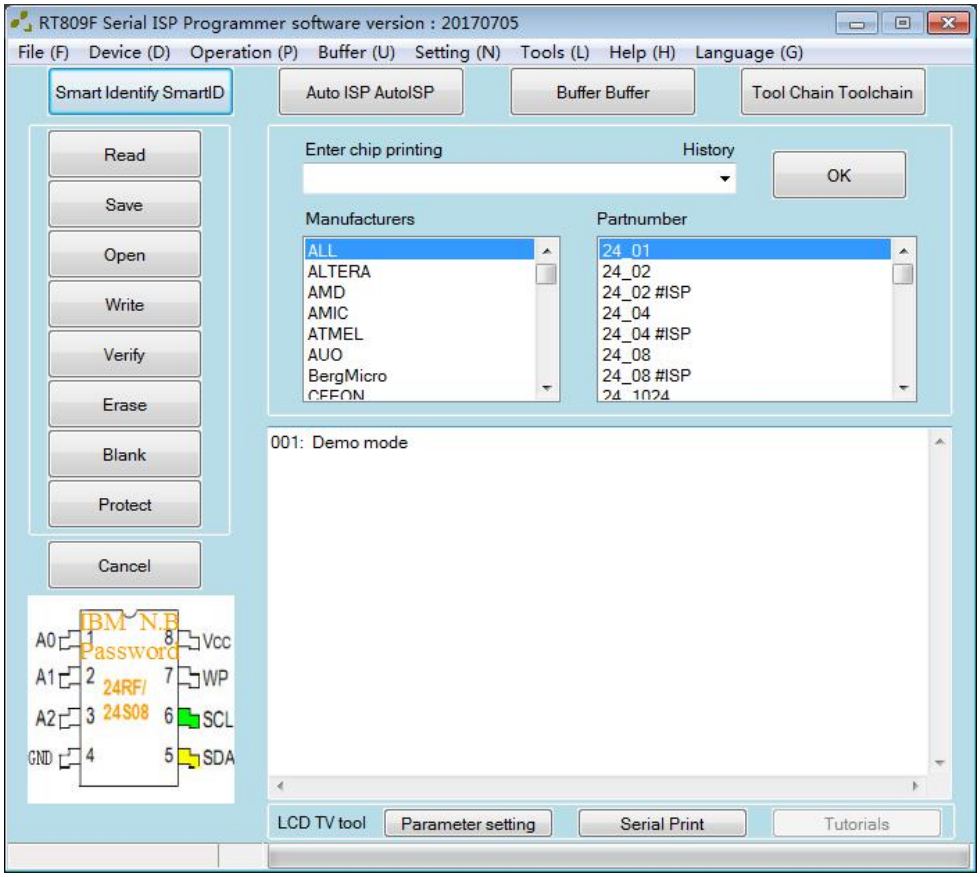
- After installing,open the RT809F software and can see the serial number of the programmer.



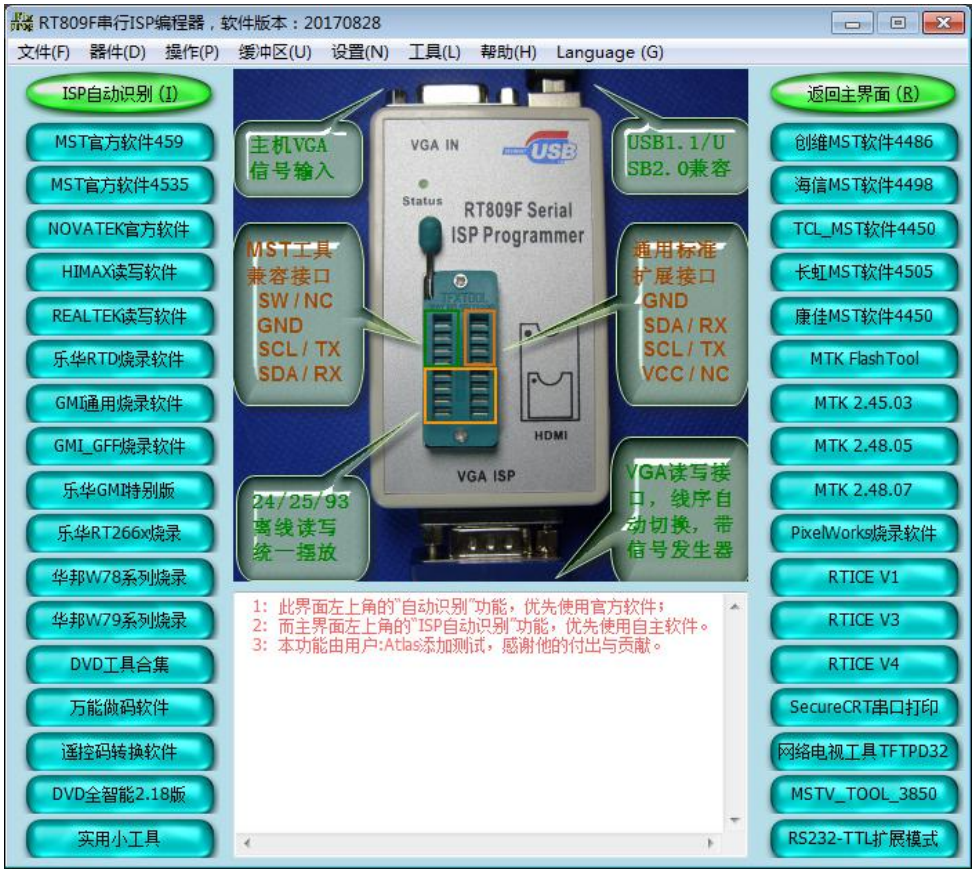
- The serial number is the only proof for technical support and warranty.Please do not leak, properly and secretly kept.

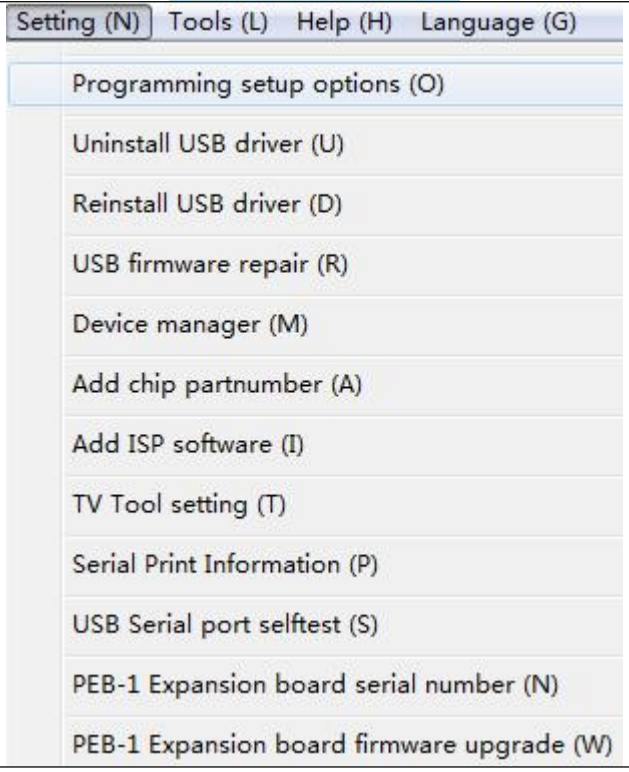
Chapter 3 The Software Instruction

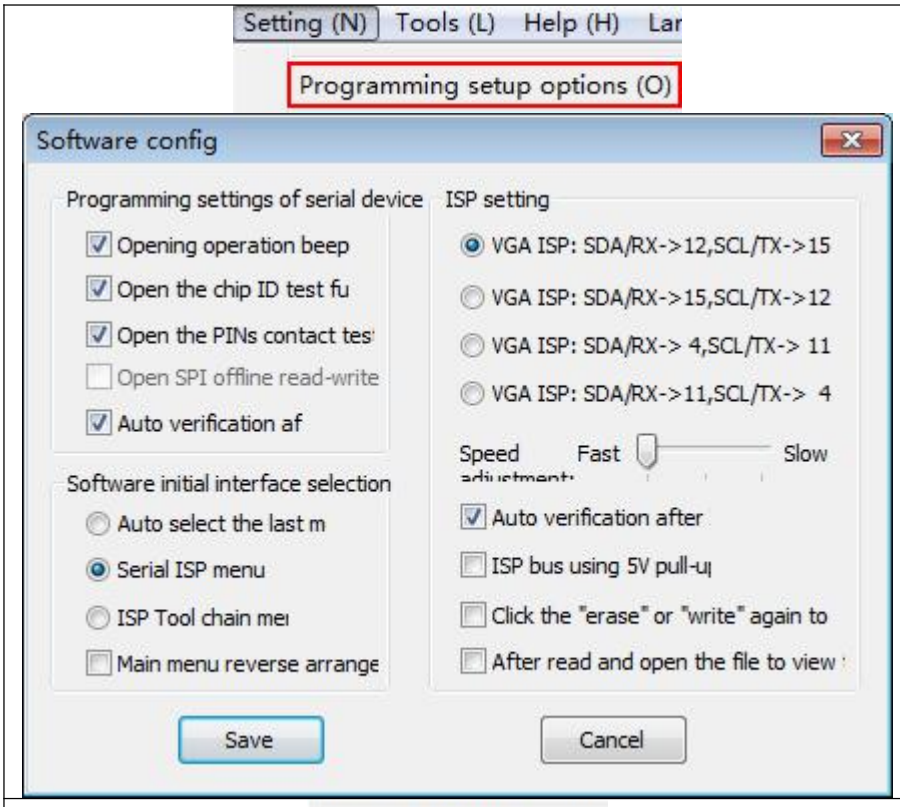
Software Main Interface

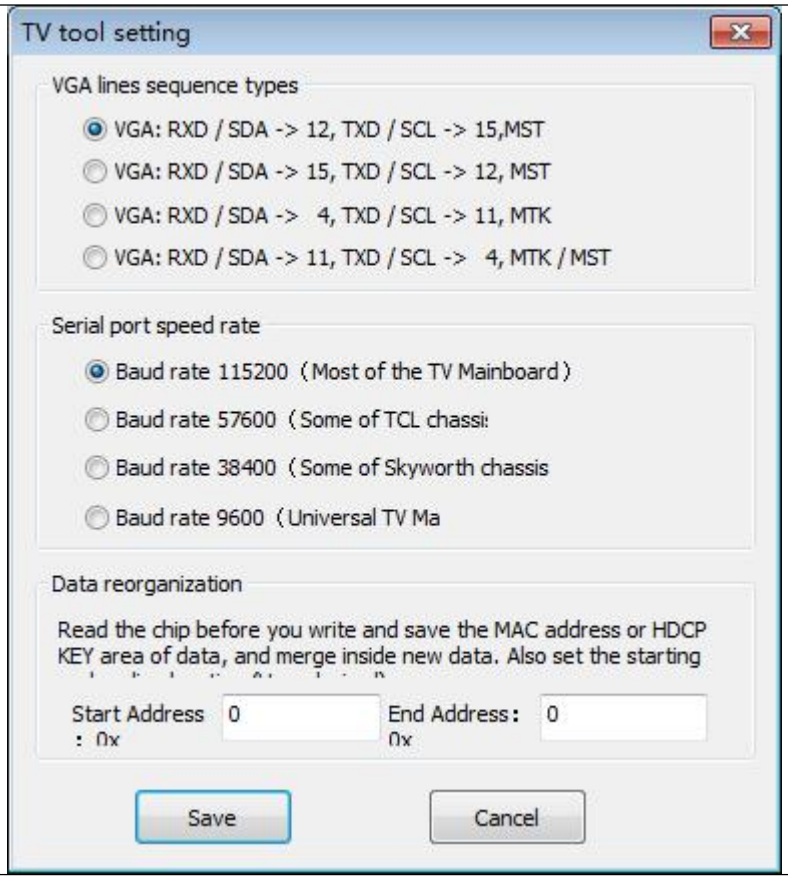


Third-party Toolchain Interface



	Click this icon to recognize intelligently the type of most of the chip,easy to operate.
	When flash on line,click this icon it will recognize the chip type.
	Click this icon to check the data content of reading and writing.
	Click to enter the third-party testing software connecting window.
	Operating command
	Click “Setting” and drop-down list appears.

	Click this icon and following menu appears. ISP Setting:change the line sequence connecting VGA ISP. Speed adjustment:can adjust the speed when writing.
Uninstall USB driver (U)	Uninstall the programmer driver
Reinstall USB driver (D)	Reinstall the programmer driver.
USB firmware repair (R)	When the programmer shows that serial number can be used,please try to repair the programmer firmware.
Device manager (M)	Check the device manager quickly.
USB Serial port selftest (S)	Click to self-test if the serial port works well,it need to short circuit the corresponding pin with VGA port when testing.
PEB-1 Expansion board serial number (N)	After insert the PEB-1 expansion board.click this icon to check the serial number of the PEB-1.
PEB-1 Expansion board firmware upgrade (W)	Upgrade the firmware of the PEB-1 expansion board.
TV Tool setting (T) LCD TV tool Parameter setting	Set the line sequence and BIT rate when flashing,click one of these two icons the following menu will appear.

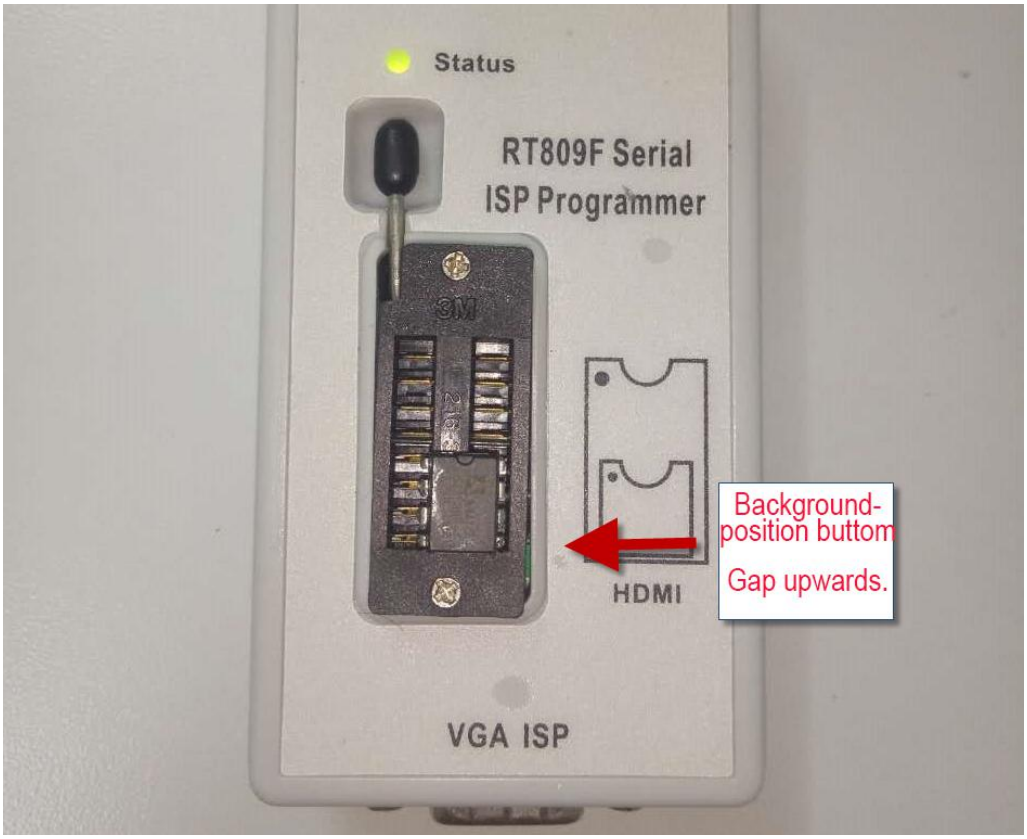
	
	The serial port printing switch,when serial port close it shows serial port printing;when it open it shows close.
	Click the drop-down list of "Language" to choose different languages.

Chapter 4 Detailed Operation

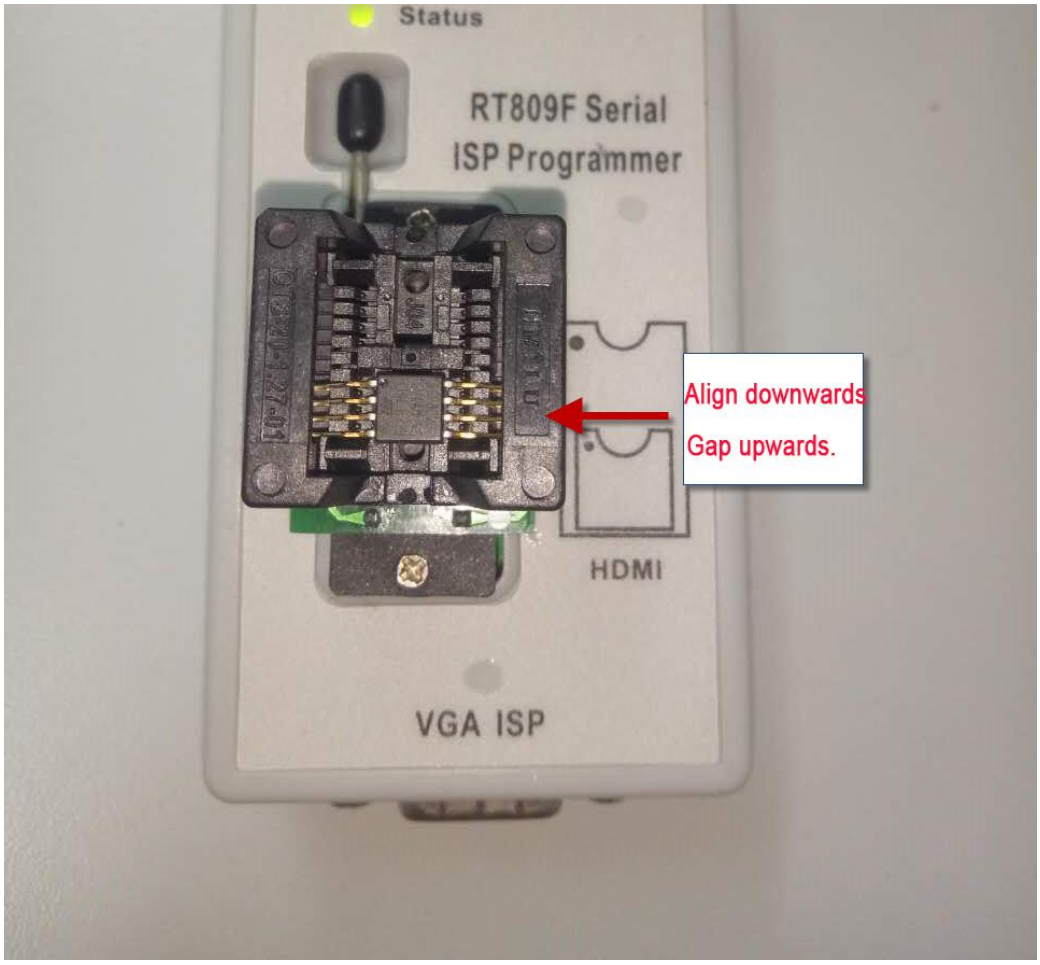
4.1 93XX,24XX,25XX Chips' Reading and Writing

4.1.1 The putting place of different chips

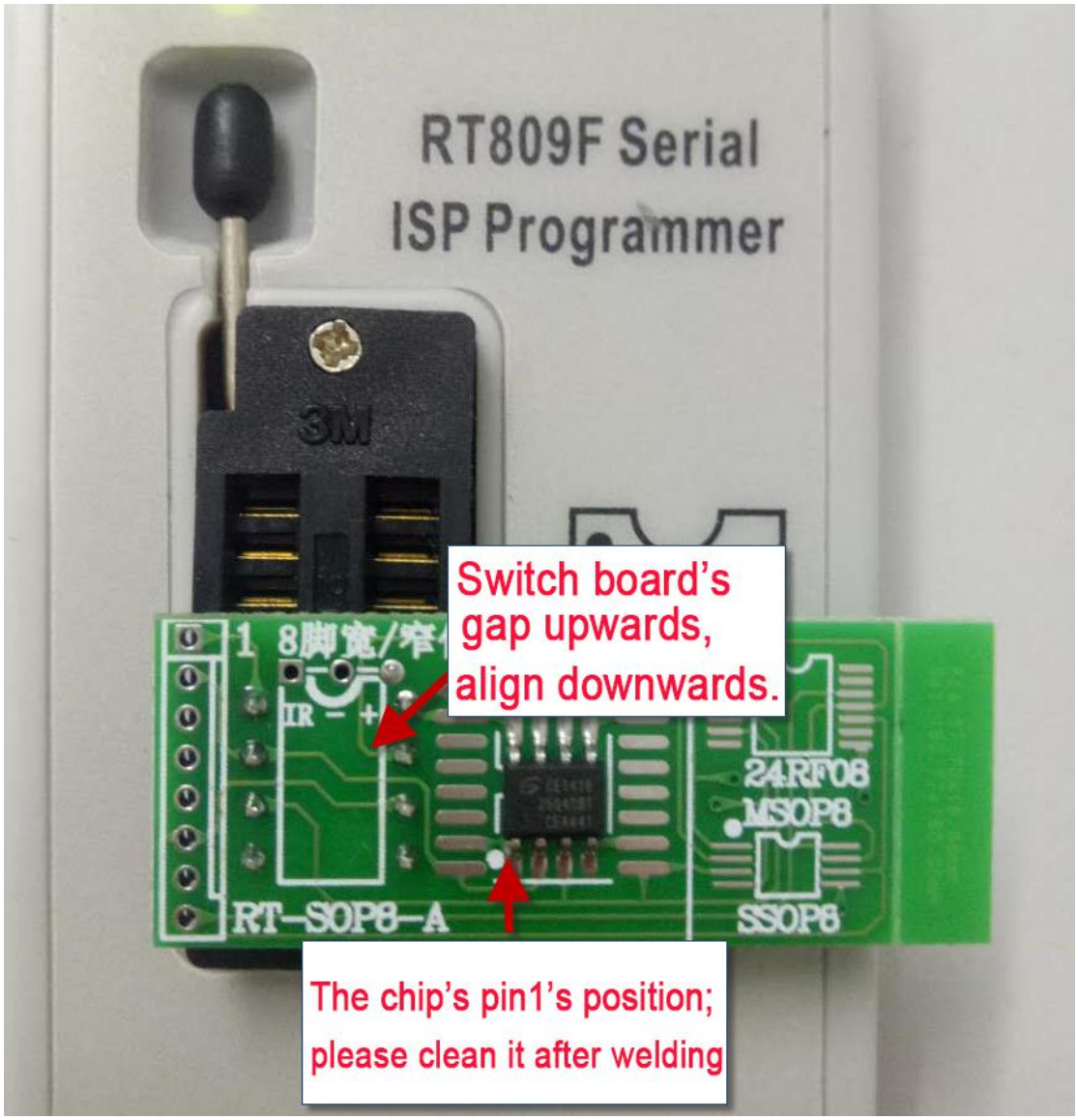
- The putting place of DIP encapsulation chip on RT809F.



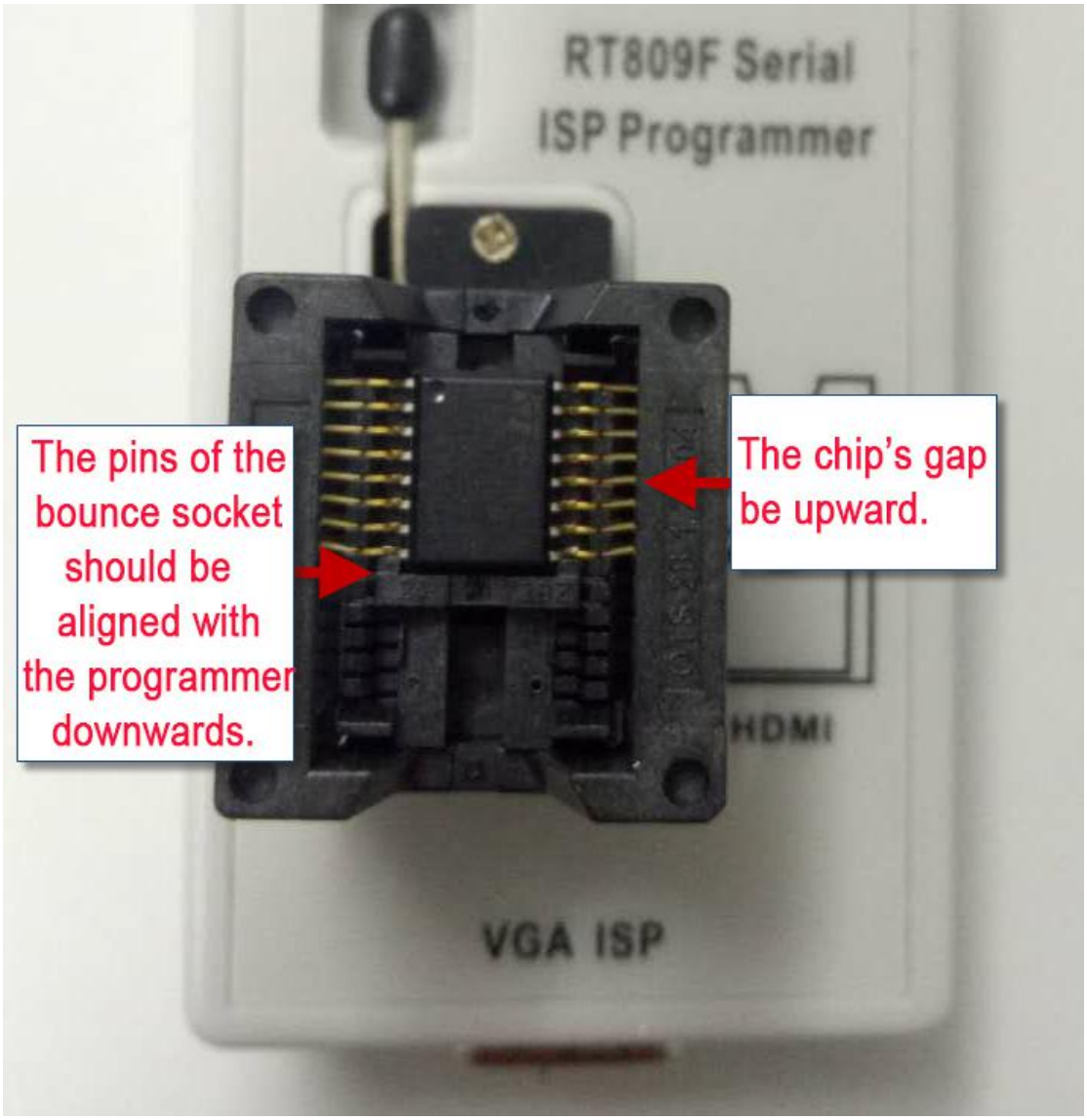
- The position of SOP encapsulation on the bounce board.



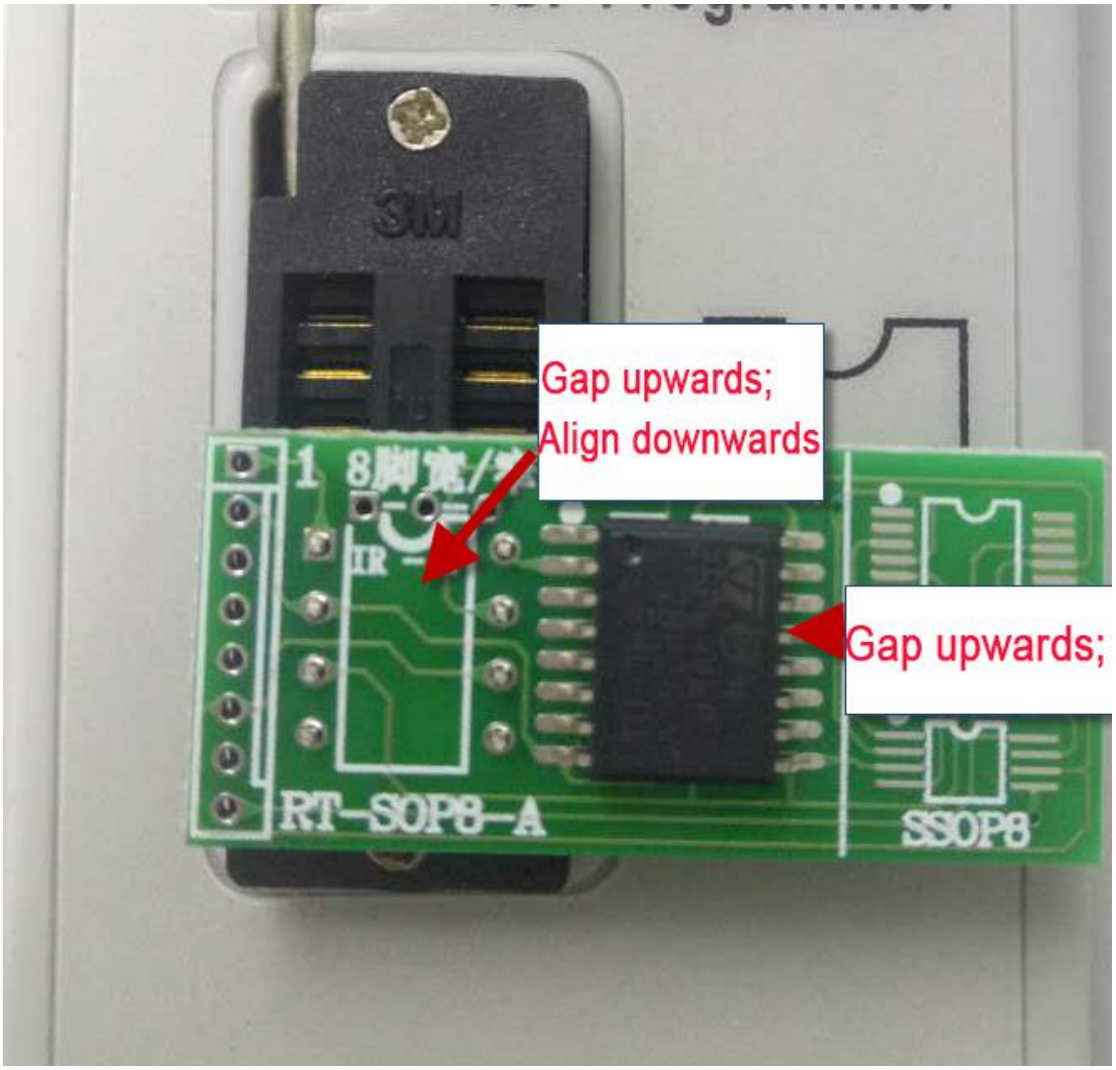
- The position of SOP encapsulation on the board.



- The position of QSOP 16 pins encapsulation on the socket.

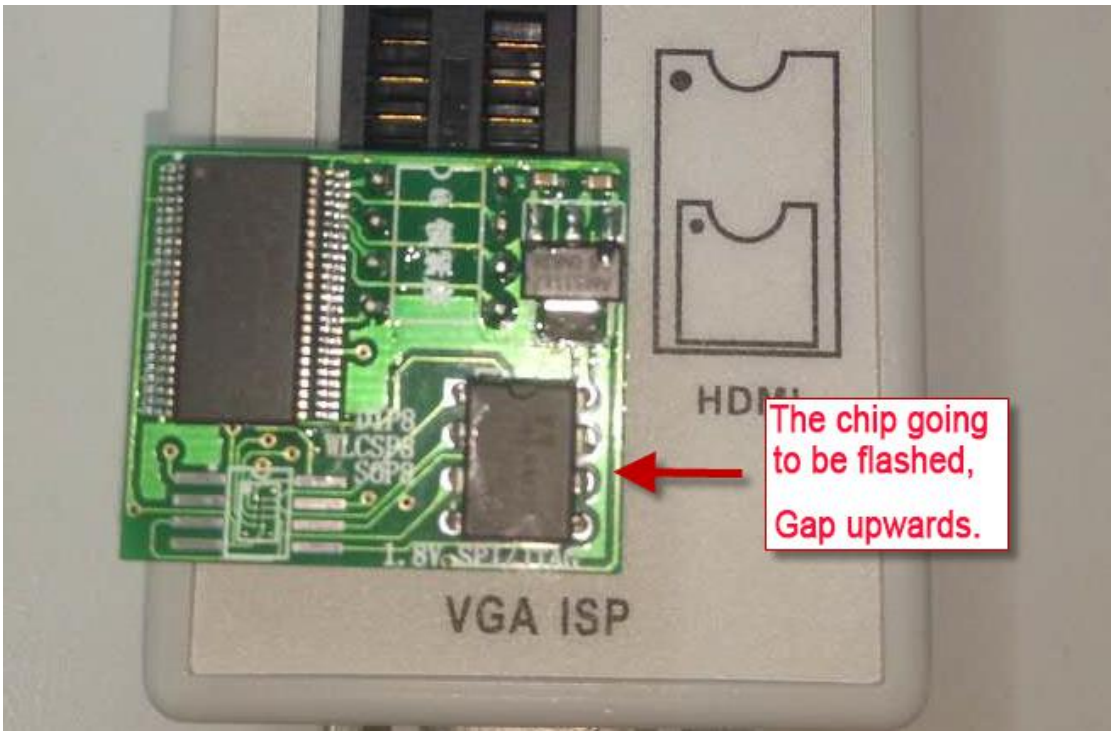


- The position of QSOP 16 pins encapsulation on the board.

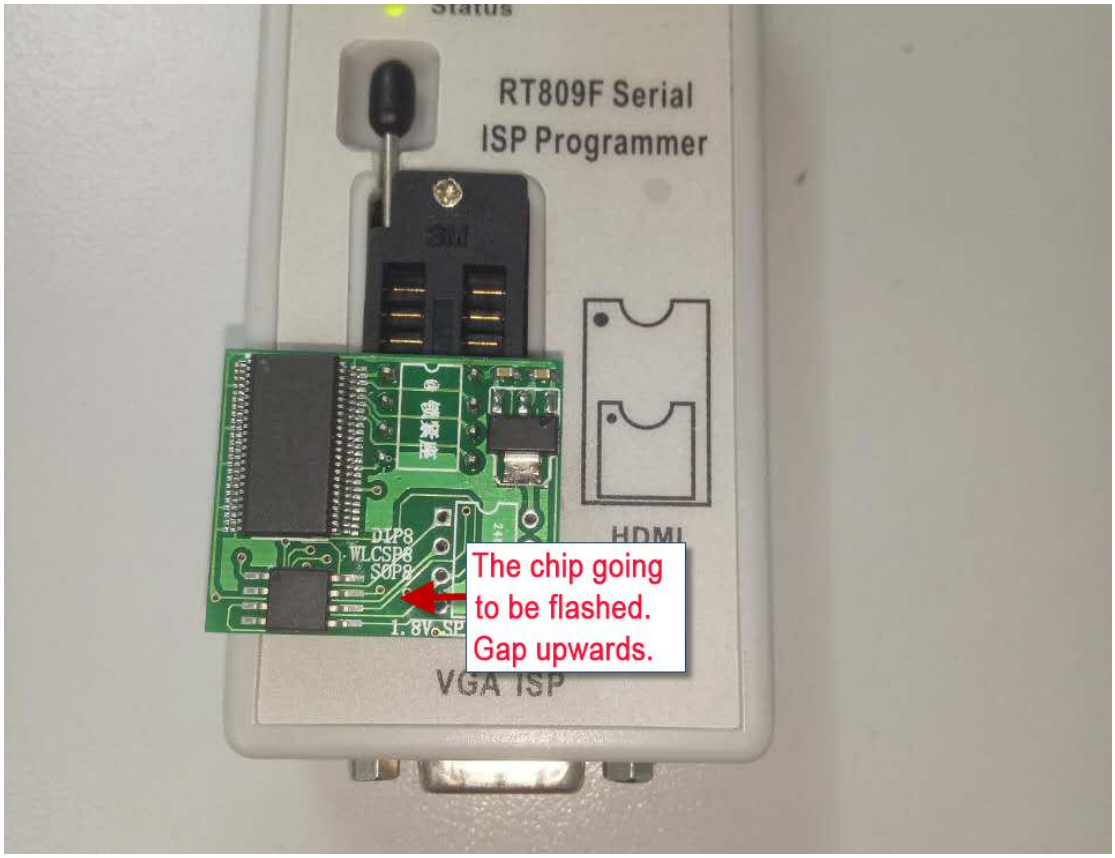


- If the power supply of the chip is 1.8V,it need to add the board.

DIP 8 encapsulation



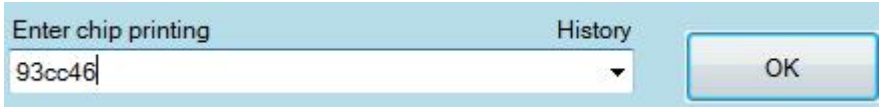
SOP 8 encapsulation



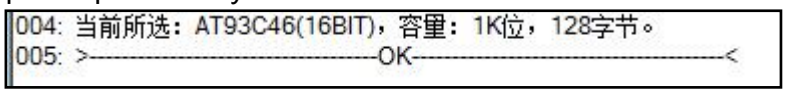
4.1.2 Choose the chip types

- **93 series chips**

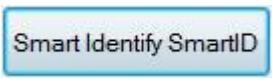
Step 1 : Enter the chip printing and click “OK”；



Step 2 : Operate only after “OK” shows.



- **24XX、25XX series chips**

Step 1 : After putting the chip well click 

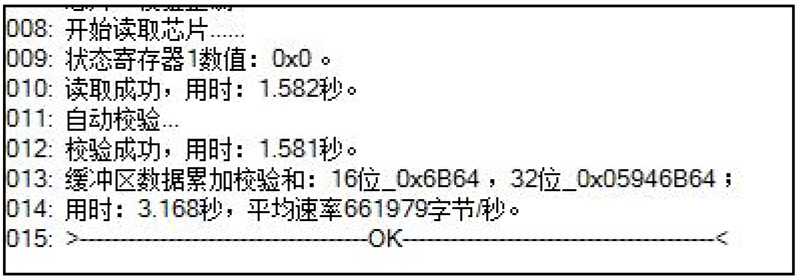
to get the chip ID；

Step 2 : If there are two or more same IDs,choose the same type with the chip waiting to be flashed and click “OK”；

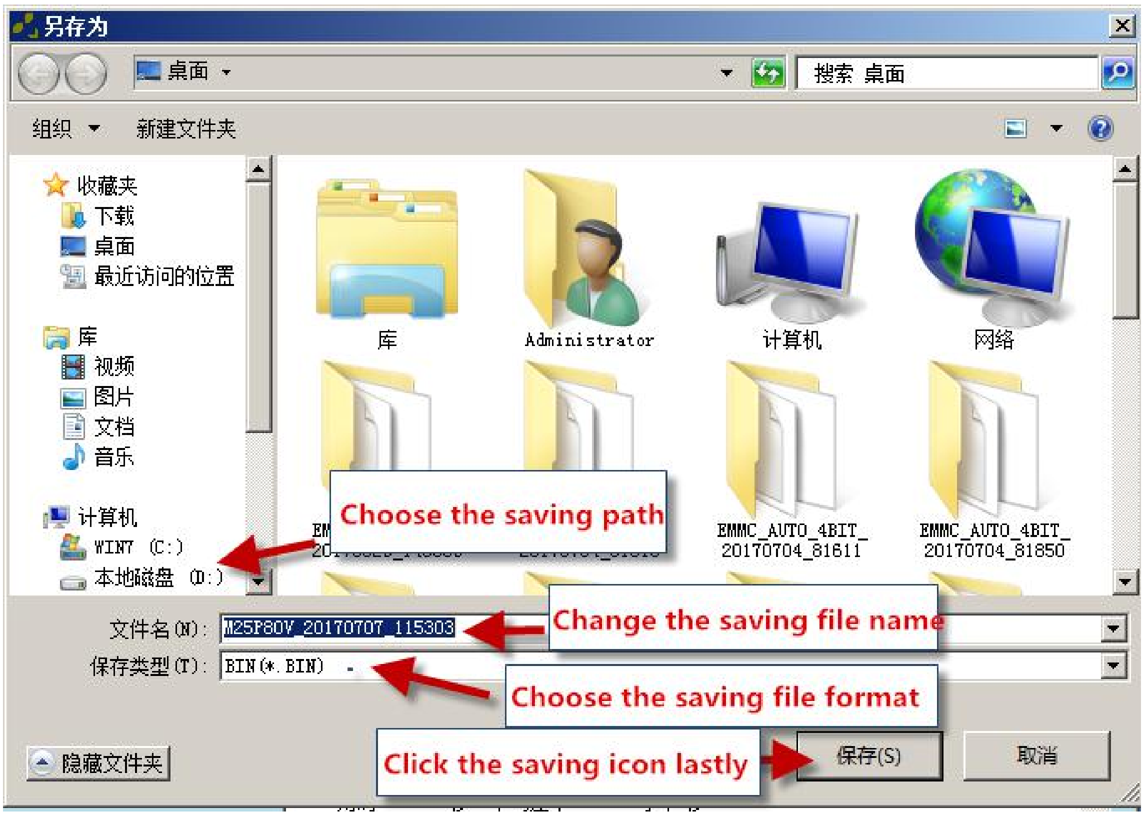
1.1.3 93XX,24XX,25XX series chips reading

Step 1 : Click 

and reading normally ;



Step 2 : Change the name and path,then click “Save” .

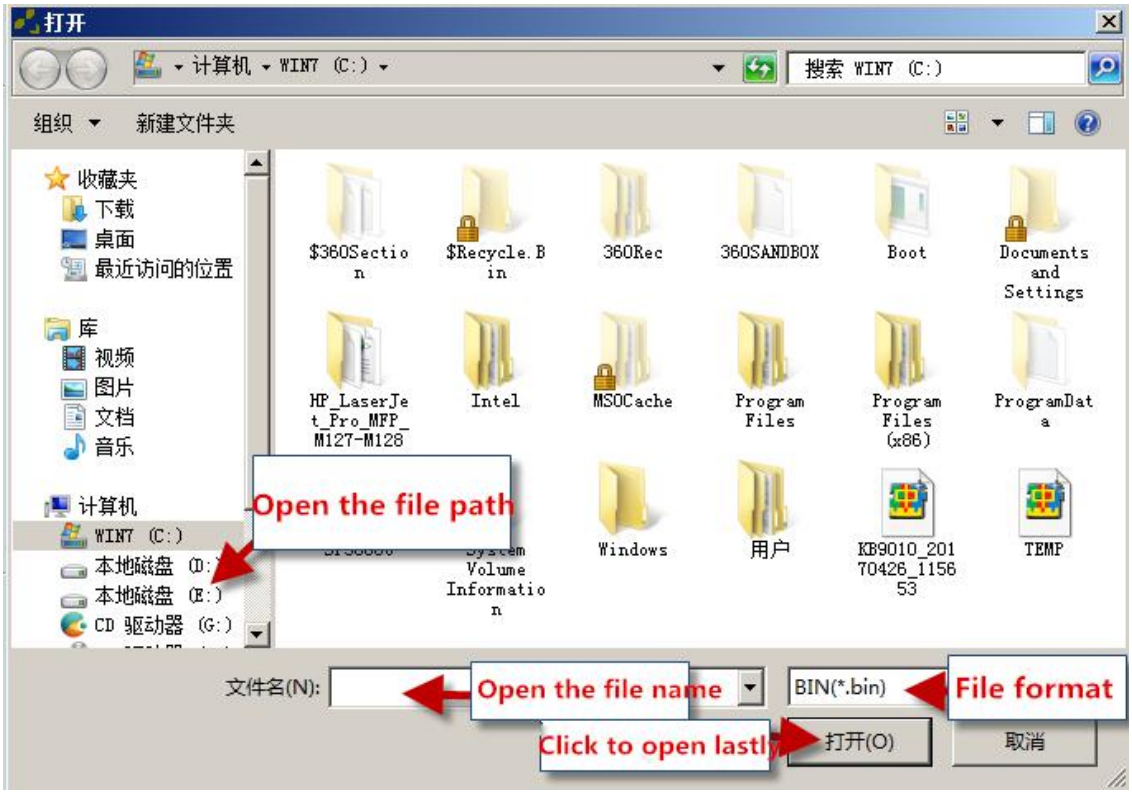


1.1.4 93XX,25XX,24XX series chips writing

Step 1 : Click 

;

Step 2 : Choose the name of the file that will be written(Bin format)；

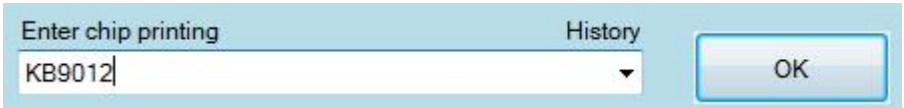


Step 3 : Click 

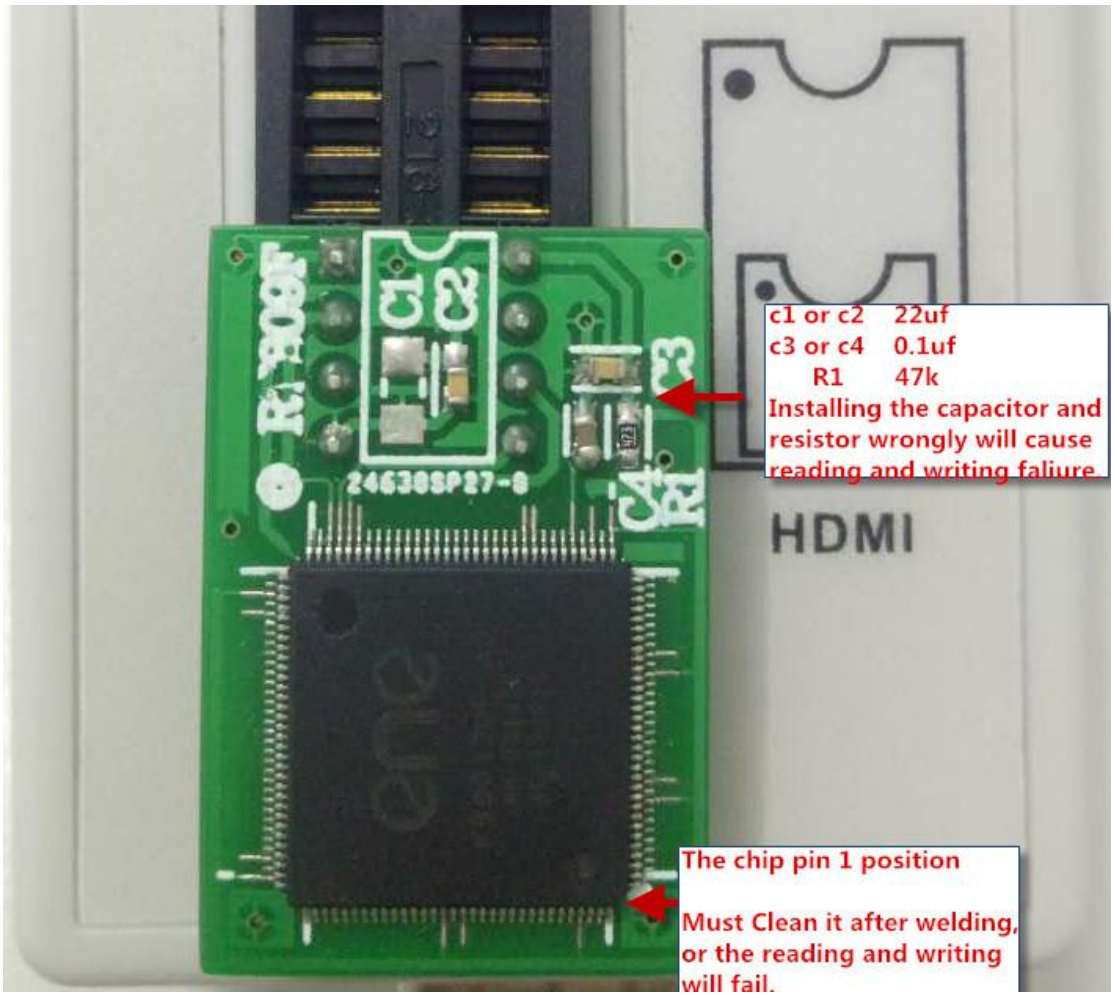
at the last，when it shows following information,writing finishes.

4.2 Laptop KB90XX series EC chip’s writing off line

- Enter the type into the chip printing blank and click “OK”；



- The position of the chip on the board.



- Then read and write,the saving and loading of the file can refer to the way of 93XX’s.

- The hint to show reading and writing smoothly.

```
014: 当前所选：KB9012，容量：1M位，128K字节。
015: >----------OK----------<
016: 开始读取芯片……
017: 读取成功，用时：6.357秒。
018: 自动校验...
019: 校验成功，用时：6.357秒。
020: 缓冲区数据累加校验和：16位_0x0000，32位_0x01FE0000；
021: 用时：12.72秒，平均速率20605字节/秒。
022: >----------OK----------<
023: 开始写入芯片……
024: 写入成功，用时：31.75秒。
025: 自动校验...
026: 校验成功，用时：6.358秒。
027: 用时：38.12秒，平均速率3438字节/秒。
028: >----------OK----------<
```

4.3 PLCC 32 pins chip’s reading and writing

- The chip with 32 pins or more need PEB-1 expansion board to be used cooperatively.

- Enter the chip type.

- The position of the chip on the PEB-1.

- It shows writing successfully.

```
002: 当前所选：W49F002U@PLCC32，容量：2M位，256K字节。
003: >----------OK----------<
004: 引脚接触良好。
005: 芯片ID校验正确。
006: 开始写入芯片.....
007: 自动擦除...
008: 擦除成功，用时：0.137秒。
009: 开始写入...
010: 写入成功，用时：10.46秒。
011: 自动校验...
012: 校验成功，用时：1.508秒。
013: 用时：12.12秒，平均速率21636字节/秒。
014: >----------OK----------<
```

4.4 TSOP 48 pins chip’s reading and writing

- Enter the chip type;

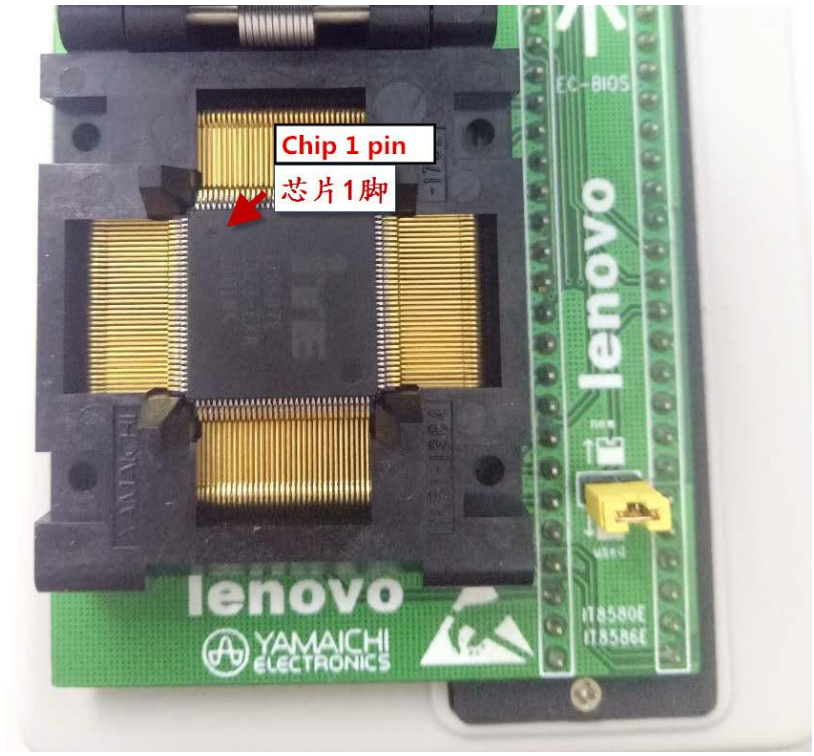
- The position of the chip on the PEB-1;

- Attention : If to write NAND FLASH,first input the chip type,if there is no please choose "NAND AUTO" algorithm;
- If it shows error when using socket,then weld the chip on the test board to test.

4.5 Write the 85 series EC chip off line

- The position of the chip on the board ;

- The position of the chip on the socket ;



- It shows success.

```
027: IT8587 , Ver : 06 , FlashID: 0x5AF08313061
028: 芯片ID校验正确。
029: 开始写入芯片.....
030: 自动擦除...
031: 擦除成功，用时：0.027秒。
032: 开始写入...
033: 写入成功，用时：18.52秒。
034: 自动校验...
035: 校验成功，用时：1.857秒。
036: 用时：20.42秒，平均速率6417字节/秒。
037: >----------------------------------OK----------------------------------
```

Attention : The above writing way can write the 85XX series EC chip,but not including 8585 chip(which can choose to write on line)

4.6 Write the IT85XX Series Laptop EC Chip on Line

- Input "IT8XXX_ISP_PEB-1" in the "Enter chip printing" blank;

- Connect the mainboard and programmer with PEB-1 as requested ;

- Search for the same type with your laptop in setting;

- If there is no the same type,add by yourself according to the line sequence.

- Attention :

1. Don’ t forget to ground it,and the ground line can not be too slim;

2. The flat cable must be cut and plugged as requested,if it isn’ t clear enough,there are high-definition photo in BBS to be referred;

3. If 8585 and 8586 can’ t be read,please ground the 100pin of the chip.

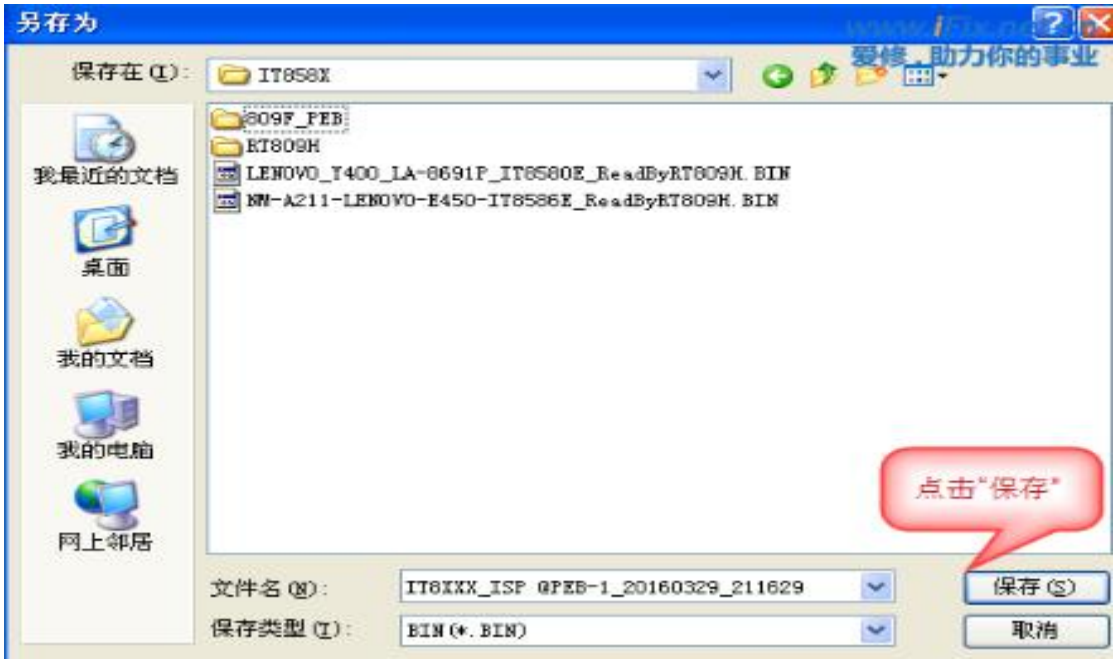
4. Choose the right type and set the right line sequence,then click “Read” and charge the mainbaord ;

5. Some boards fail in connecting,please interrupt the charge and connect again,this kind of chip need to catch the ISP ENTER signal when power on.

4.6.1 Reading data

- Charge the mainboard after clicking “Read”;

- Then click “Save”;

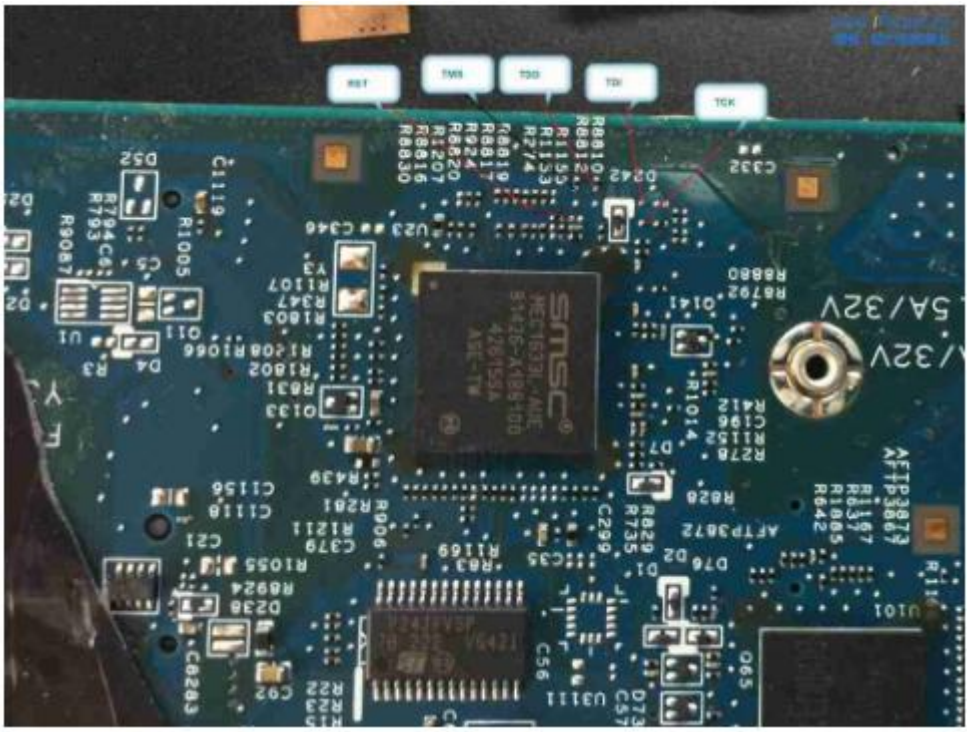


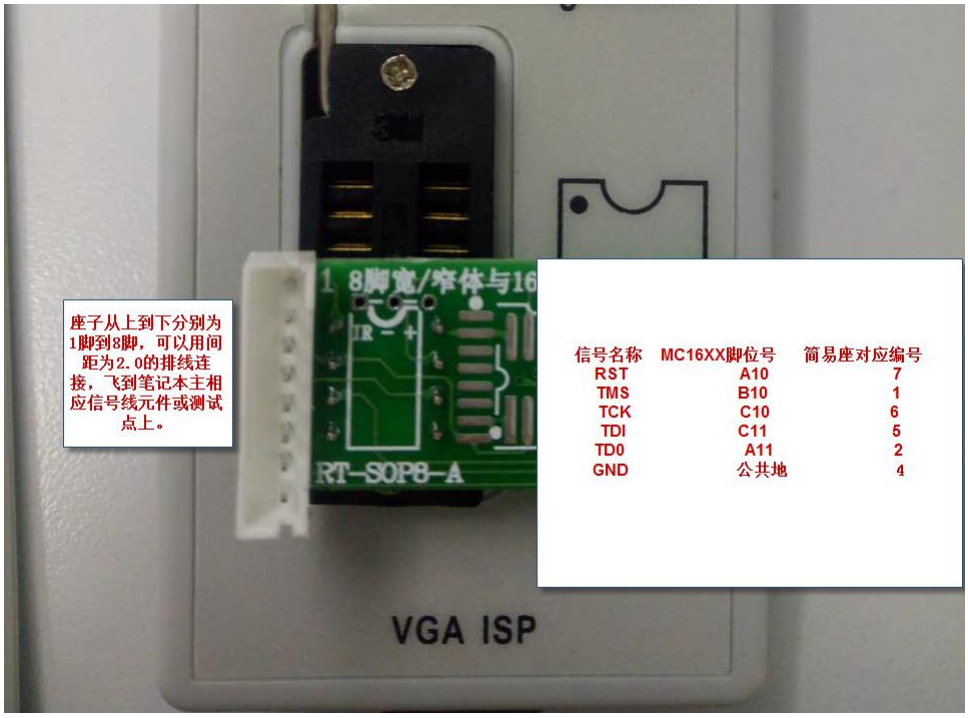
4.6.2 Writing data

- If the mainboard read before hasn't power off, then can be written directly,or have to click "Write" first and then charge the mainboard;
- Load to write the file,open or remove into it directly;

- Then click "Write";

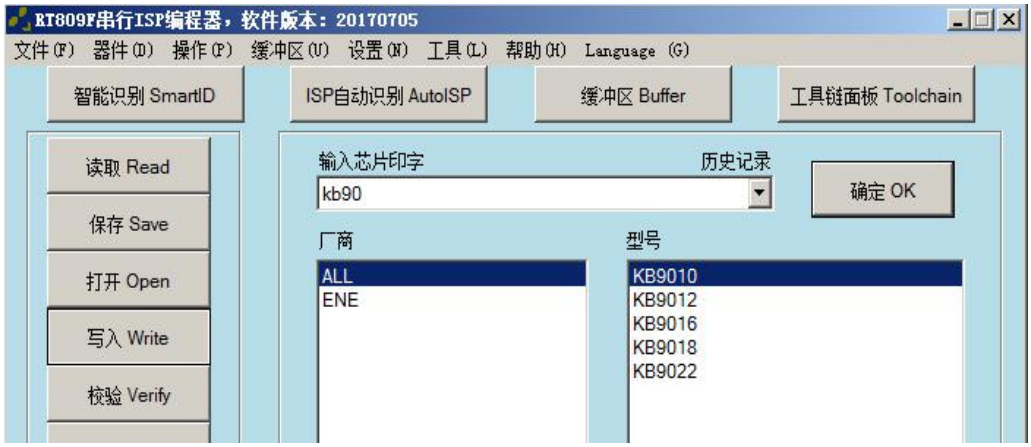
4.7 Laptop EC Chip MEC1633 Read&Write by Flying Line



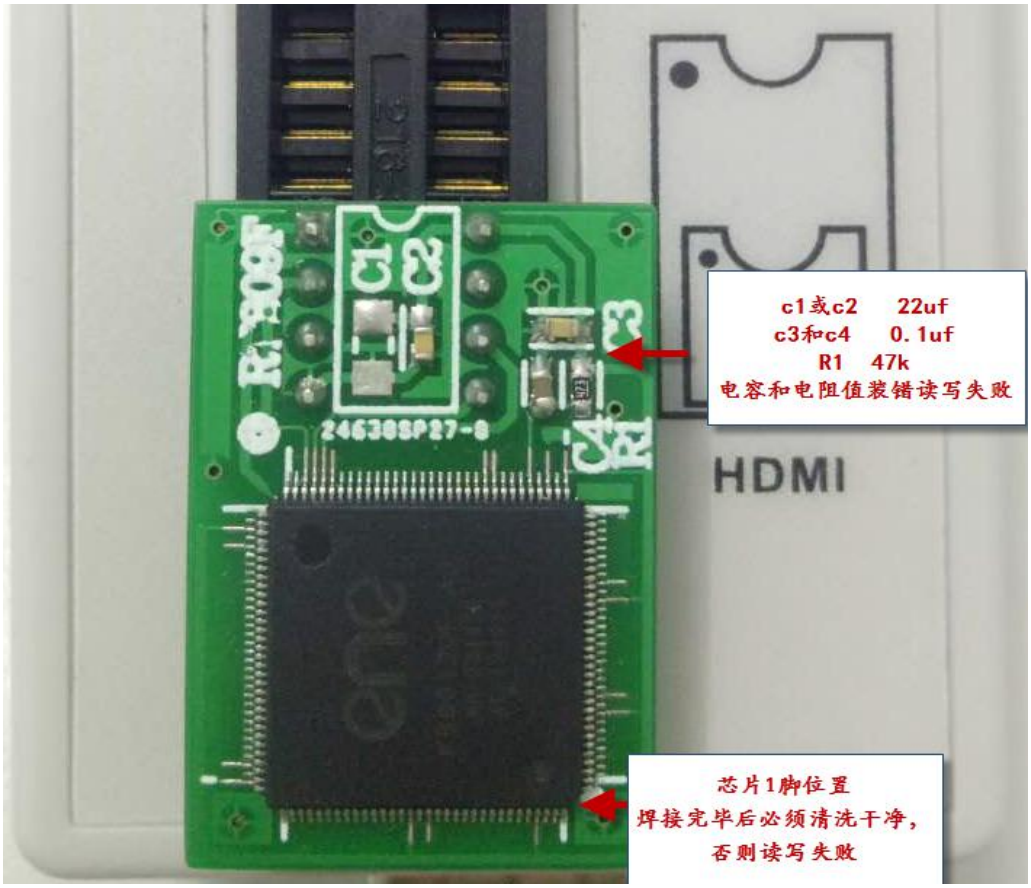


4.8 Laptop EC Chip KB90 Series off Line Read&Write

- Input the corresponding chip type in the software interface;



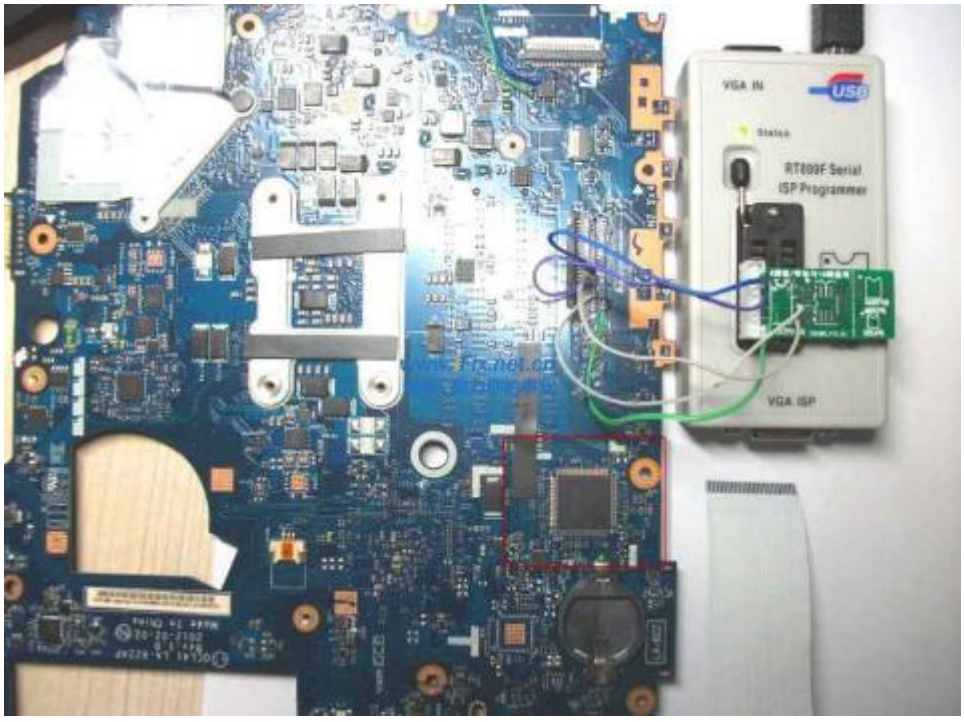
- Weld the chip on the board,and please install the components on the board according to the request;



```
020: 当前所选：KB9012，容量：1M位，128K字节。
021: >----------------------------------OK----------------------------------<
022: 开始读取芯片.....
023: 读取成功，用时：6.356秒。
024: 自动校验...
025: 校验成功，用时：6.357秒。
026: 缓冲区数据累加校验和：16位_0xA06B，32位_0x00FDA06B；
027: 用时：12.72秒，平均速率20607字节/秒。
028: >----------------------------------OK----------------------------------<
029: 开始写入芯片.....
030: 写入成功，用时：31.74秒。
031: 自动校验...
032: 校验成功，用时：6.357秒。
033: 用时：38.11秒，平均速率3439字节/秒。
034: >----------------------------------OK----------------------------------<
```

4.9 Laptop EC Chip KB90XX Series Reading by Flying Line

- Flying line diagram



- Pin’s corresponding definition

华硕K45VD EC KB9012QF A3在线读写接线定义

引脚功能	KB9012QF A3脚位	JKB1键盘接口脚位	RT809F锁紧座
EDI_CS /KSI4	59	15	5
EDI_CLK/KSI5	60	19	10
EDI_DIN/KSI6	61	16	9
EDI_DO /KSI7	62	17	6
TP_PLL_Lock/KSO3	42	22，飞到旁边的GND，GND还要飞线到转接板上，这里是要飞两根线。	8

联想G480_E530_E430 EC KB9012QF A3在线读写接线定义			
引脚功能	KB9012QF A3脚位	JKB1键盘接口脚位	RT809F锁紧座
EDI_CS /KSI4	59	5	5
EDI_CLK /KSI5	60	6	10
EDI_DIN /KSI6	61	3	9
EDI_DO /KSI7	62	2	6
TP_PLL_Lock/KSO3	42	18，飞到旁边的GND，GND还要飞线到转接板上，这里是要飞两根线。	8

- RT809F locking socket pin identify

- Attention :

Please fly 6 lines totally,the ground line must be flied well ;

The length of the signal line must be within 10cm,EC power supply need the original board supply or the external power source with 3.3V;

After flying the 6 lines above well,charge the mainboard first,with the external adapter or charge the chip with 3.3V power source.

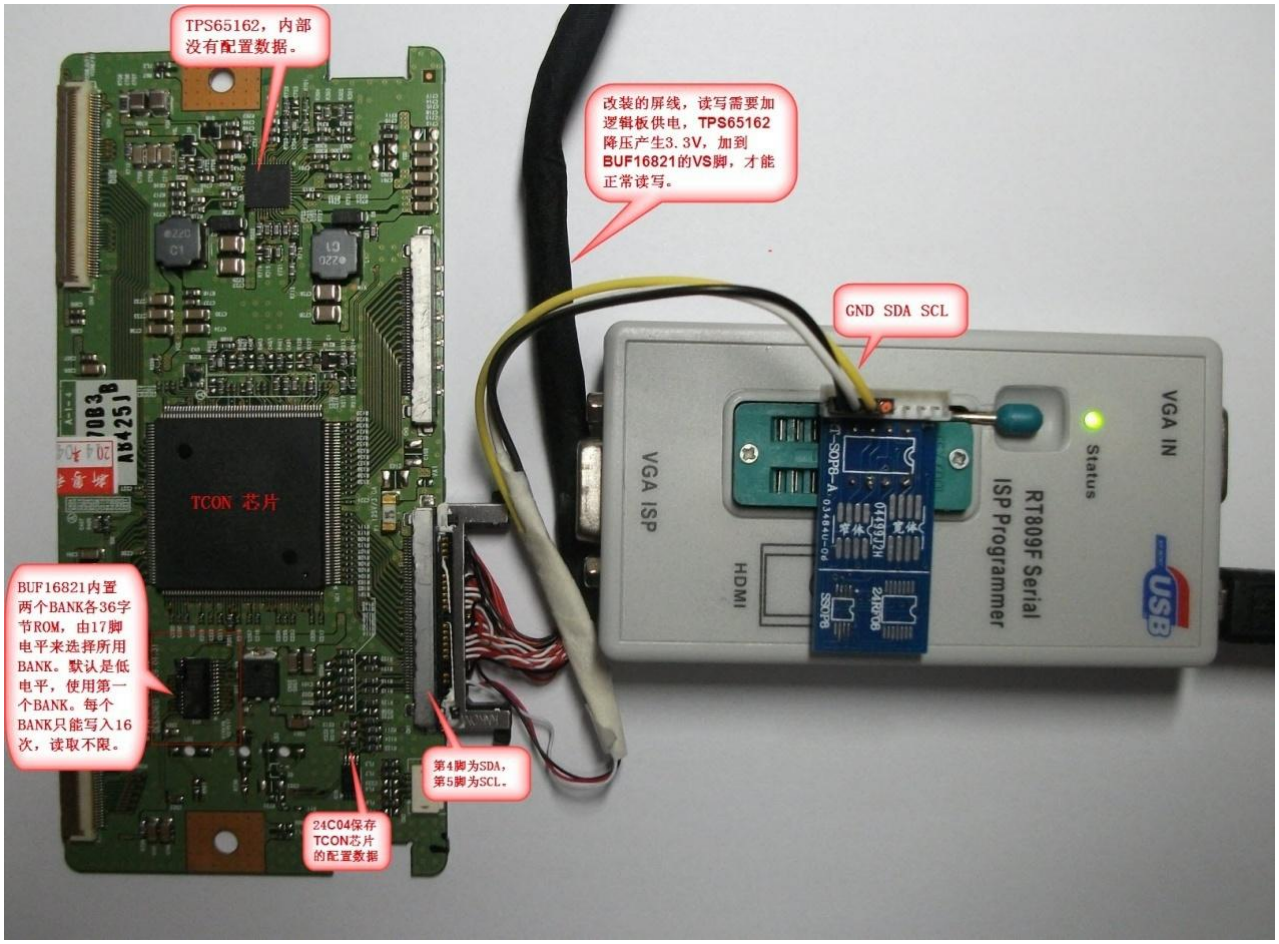
- Click “AUTO ISP” in the software interface to identify the chip’s type;

- Click “Read”;

- Click “Write”;

- Referring to 93 chip about how to save and open the file.

4.10 BUF16821 TCON Board GAMMA Voltage Producing Chip Read&Write on Line



4.10.1 Board Number

Board Number 6870C-3500C，the TCON board frequently-used by LG HD screen of 32 to 55 inch.

4.10.2 Chip Instruction

BUF16821 internal ROM has two Banks,but only use one group of them actually,there is the configured data of 36 bytes for each group,which control the two groups of VCOM and the 16 path GAMMA calibrating voltage value by change the internal DAC’s output voltage.

When the internal procedure lost or the chip is damaged or changed,we have to rewrite the configured data to work again normally,the procedure can be read from the good board but please pay attention that if the board numbers are the same,different sizes can’t be interchanged currently,different types but with same size can’t be interchanged sometimes also,please refer to the actual test result.

The actually read file is 40 bytes, 0x00 - 0x1F is the 16 group DAC value；0x24 - 0x27 is the VCOM value of left and right path；0x20 - 0x23 is the reserved bytes.

4.10.3 Line Connection Mode

Read&Write Line Connection------LG 32 to 52 inch HD screen TCON board’s screen line port with

51 pins,the fourth pin is SDA,the fifth pin is SCL,with a line GND more,remould a ISP upgrading line with the screen lines;and connect it with the 12C expansion port on locking socket of RT809F,then can read and write on line using the screen lines port.
Before reading and writing please charge the screen with the 12V power.

4.10.4 Notes

- There are limits to the number of writing times of BUF16821 chips' internal ROM,the request from manufacturer is that every BANK can't be more than 16 times,exceeding the number of times maybe causes the verifying failure after writing,but as for reading,it has no times limit.
- The BUF16821 chip's 14pin is SCL,15 pin is SDA,they are connected with the 5th pin SCL and 4th pin SDA generally ;
- 16 pin A0 must be grounded,17 pin BKSEL is BANK choose which should be grounded acquiescently generally,use the first BANK to save the data;
- If the chip has been written for 16 times,when verifying goes wrong,please disconnect this pin with GND,connect the high level,then the chip choose the 2nd BANK automatically to save data,so it can be written for 16 times more;
- BUF16821 chip type has two kinds of suffix,A and B;the A version's printing is "BUF16821",the B version's printing is "BUF16821B",A can replace B absolutely,but B probably can't.(There is limit to the threshold value of B version's VCOM voltage,adjustable range is small,but A version has no limit.)

4.10.5 Reading Operation

Connect the 12C expansion port of programmer with the TCON board correctly using the converted screen line,and then charge.Open software to the main interface,click "Smart ID" then it shows that the chip type is detected.

4.10.6 Writing Operation

Refer to 93XX chip to save and load file.

4.11 EPM3064A Read&Write

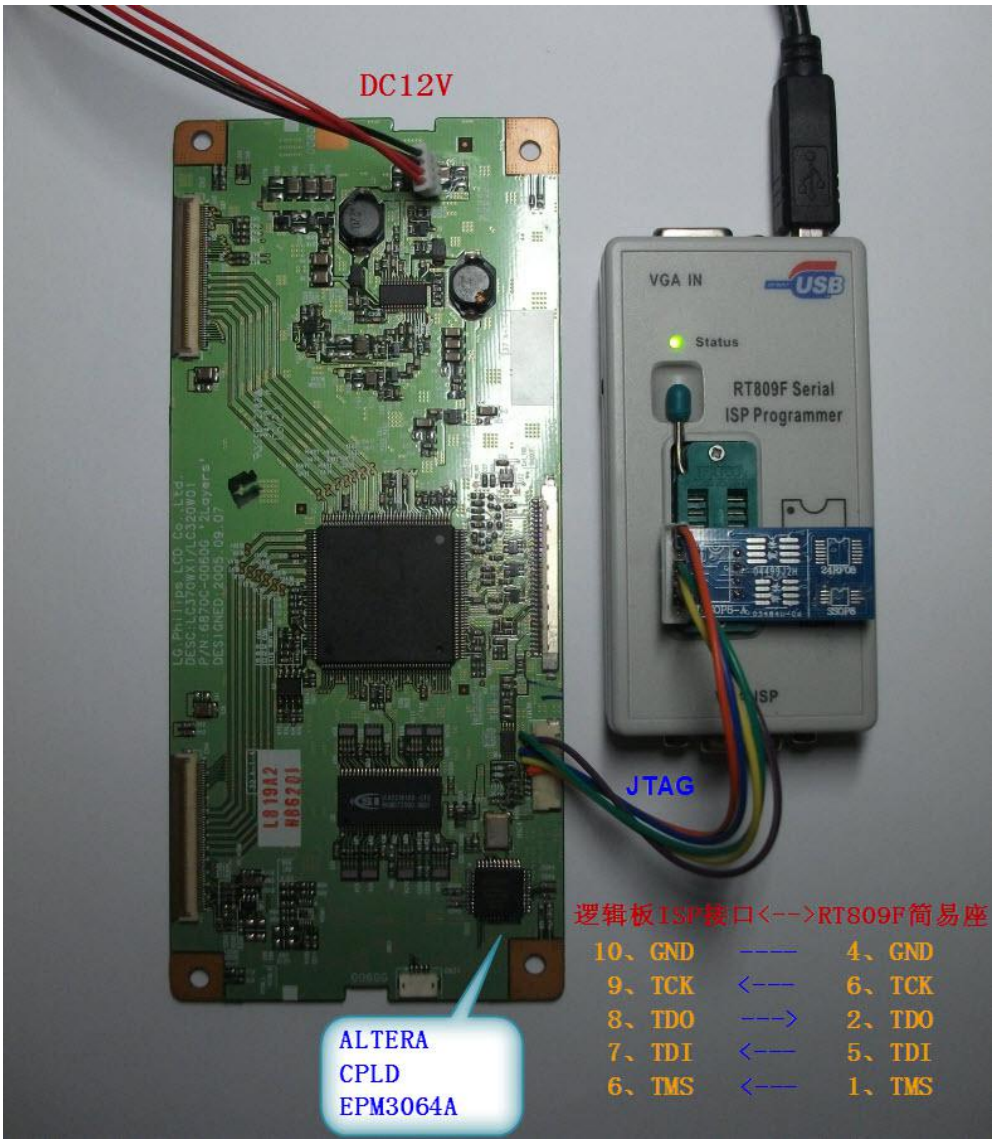
4.11.1 Chip Instruction

- Board number : 6870C-0060G,LG LED TV screen LC370WX1 TCON board,CPLD chip type EPM3064A.

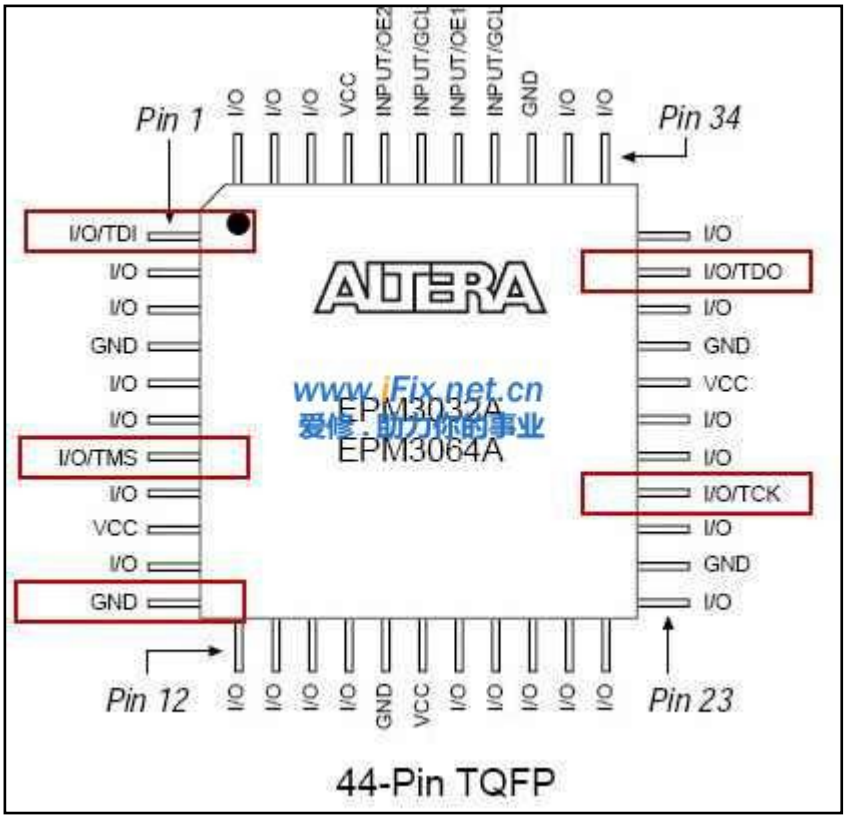
- Programmer : RT809F

- Software version : RT809F_140516 or the updated version

- Instruction : EPM3064A and EPM3032A is the MAX3000 series CPLD chip of American ALTERA Company,EPM3064A’ s internal amounts to 1250 Logic Element Circuit ,with the maximum operating frequency of 222MHz. There are certain applications on FPTV TCON board, power supply and high-voltage plate,form the medium-sized logic control or the IO expansion circuit,with EEPROM inside,can be read and written towards standard JTAG port.



- Chip pin definition:



- Standard JTAG port : TMS TCK TDI TDO 4 signal line with ground line GND

4.11.2 Reading operation

- Step 1 : Connect the lines correctly and charge the TCON board,the power source is 12V;

- Step 2 : Click “Read”.

4.11.3 Writing Operation

- When writing you can click to encrypt to avoid reading by someone;

- Refer to 93 chip to save and open the data.

4.12 S3F Series Samsung Singlechip’s Reading and Writing

S3F Series Samsung Singlechip is widely used in the kinds of small home appliances like induction cooker,pressure-cooker and electric frying pan of Midea,Galanz,Povos and other brands.When it needs to read and write the data or change the chip to do repairing,we can use RT809F to do the reading and writing.

4.12.1 Program Data Source

- The original program and data supplied by after sale ;
- The MCU program and data read by self(The precondition is that the MCU hasn’t been encrypted and after reading the RT809F software will ask automatically if to encrypt or not;if the data has been encrypted,the writing is unnecessary.)
- Decrypt the cryptographic MCU to get the program data(If it’s worthy to do according to its value and the cost to decode).

4.12.2 Preparation

- Reading and writing the S3F series MCU using RT809F need to purchase the ICSP port board used by PIC series or DIY a port board to cooperate with RT809H.It need to connect 5 lines,which respectively is VPP program voltage(12.5V),VDD power supply 5V,GND,SDA data signal and SCL clock signal.

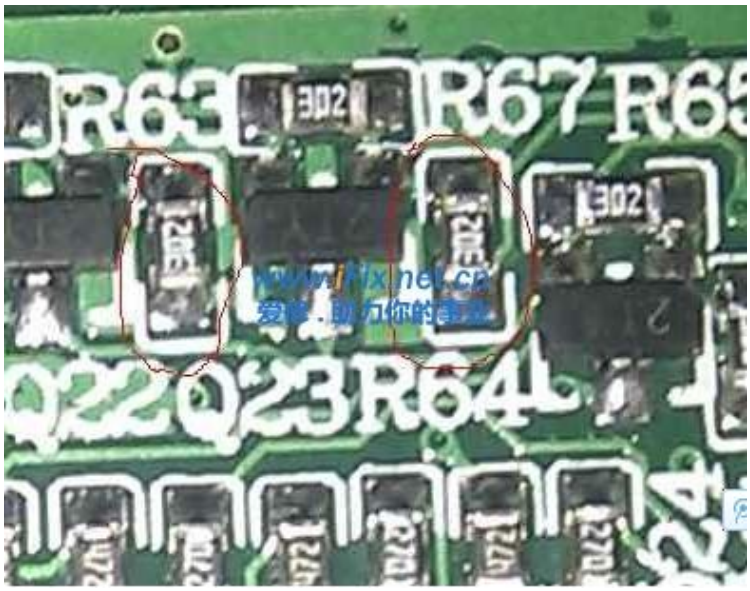
- The users need to check the pin definition of MCU of certain version,and connect them with ICSP port board correspondingly one by one.If there are online read&write port on the target board,currently it can be connected directly and read or write on line.

- Please remove the MCU and fly 5 lines to ICSP port board to read and write in the following situation:
  - There is no reserved online read&write port on the board and VPP/RESET pin is used as common IO,connected with other circuit;
  - After connecting on line with ICSP,VPP voltage is lowered to be less than 12V;
  - When reading or writing on line goes wrong with ICSP(Because S3F series programming timing sequence require that VDD and VPP must both be controlled,but on some board card this 2 pins’ capacitance is too big,which makes the timing sequence unqualified,removing MCU,using socket or flying lines to read and write will avoid this problem)

4.12.3 Attention:

- The first time to use ICSP port board,please insert the board on the RT809F locking socket and

impact it,measure the voltage between 13 pin and 16 pin.If the voltage is lower than 4V,take the RT809F apart first,find two 302 resistors(3k),R63 and R64,and change them to 102 resistor(1k).The RT809F produced after Dec. 2013 has changed the R63/R64 to 1k resistor,so do not need to change anymore.But if the resistor is 1k,the voltage between 13 pin and 16 pin is still low,please remove the 78L05 of the ICSP port board(Useful for PIC series,not for S3F series);



- Connect the S3F chip with the ICSP port board using the line first and then put on the locking socket;according to the practical testing,please be attention that GND ground line must be connected correctly or it will breakdown between the VPP and VDD pin of the MCU to damage the chip when begin to read or write without connecting well.(Use the numeration table diode to test MCU,red probe connects VPP pin,black probe connects VDD pin,the value is infinity normally,after breakdown the value is 500 and more.)

- The solving method : Series connect a Schottky diode on the VDD line,such as 1N5819,SS14 and other types,connect the positive pole to one side of the ICSP port board,connect the negative pole to the side with VDD pin of MCU,which can avoid the problem that the VPP pin break down the VDD pin because of connecting the GND ground line poorly.

- According to chip DATASHEET,if just need to read MCU but not write,then connect the VPP pin of MCU to VDD directly but not to 12.5V.However according to the actual test,when reading S3F9498/S3F9488 with VPP pin connecting with VDD pin,verifying will fail after reading chip;but if connect VPP pin to 12.5 instead and read,verifying will pass.

- S3F series MCU,if VPP and nRST are at the same pin,like S3F9454,after charging the VDD/VPP it' s allowed to read or verify in 200ms;and if they are not at the same pin like S3F9498,it has no limit for the timing sequence;

- It comes with a problem : If the configuration of some computer hardware is low,or with a slow system,which result in the failure to read or write the S3F9454 again and again,so that to think the

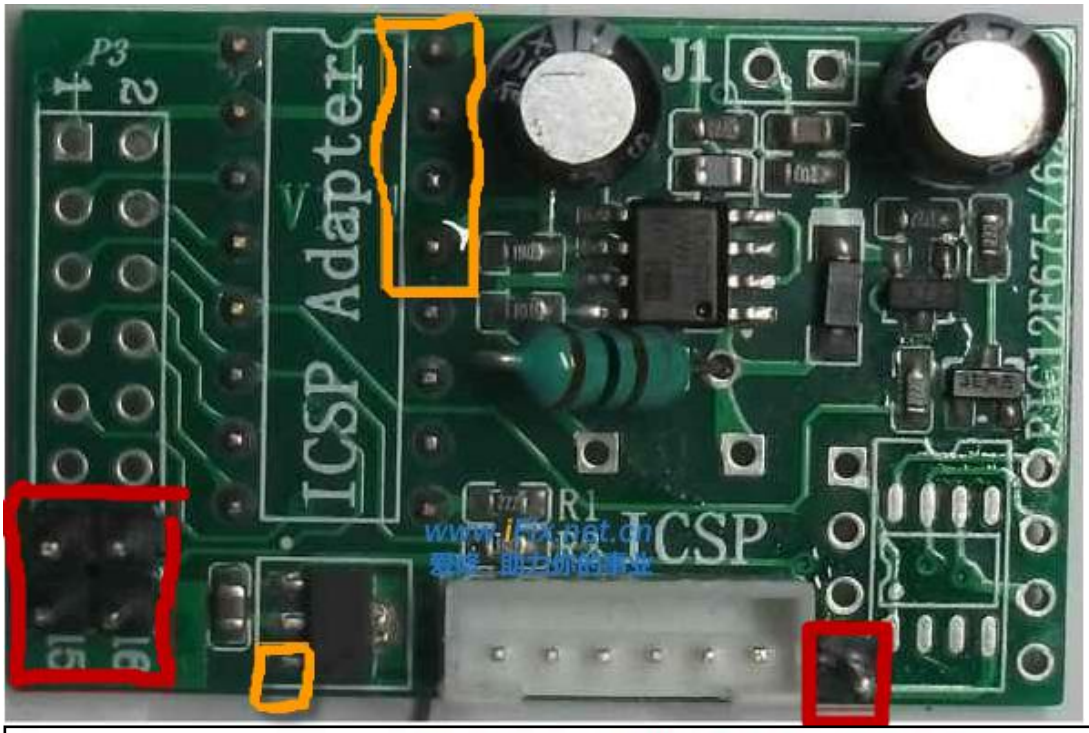
chip has been damaged. In fact just to test instead of on a computer with high configuration and fast system then it can be read and write normally.

- Advice for the fresh man to read and write S3F9454 at the first time : First buy some new S3F9454,then use the attachment in this post link(http://www.ifix.net.cn/thread-12370-1-1.html), write the program file : “奔腾 PC21N-8 S3F9454BZZ-DK94 主板”,if it verified successfully it shows the function to read and write S3F is normal;if it verified wrongly please make a clean system again or change to a faster computer to test until write in and verify successfully,at last read and write the S3F series MCU of client.

4.12.4 Connection diagram and connection definition

- The material connection picture of S3F9454/S3F9498 with RT809F

- The connection definition of S3F series with ICSP port board



SAMSUNG S3F系列MCU在线读写接线方法：

1、购买RT809F可选配件之ICSP接口板（成品仅10元）或者按照DIY图纸自制一个接口板；
2、从黄色框内或者在红色框内，焊5根线连接到MCU，或者焊上5根排针，使用杜邦线连接到MCU；
3、黄色框脚位定义：

GND
SDA
SCL
VDD
VPP

4、红色框脚位定义：

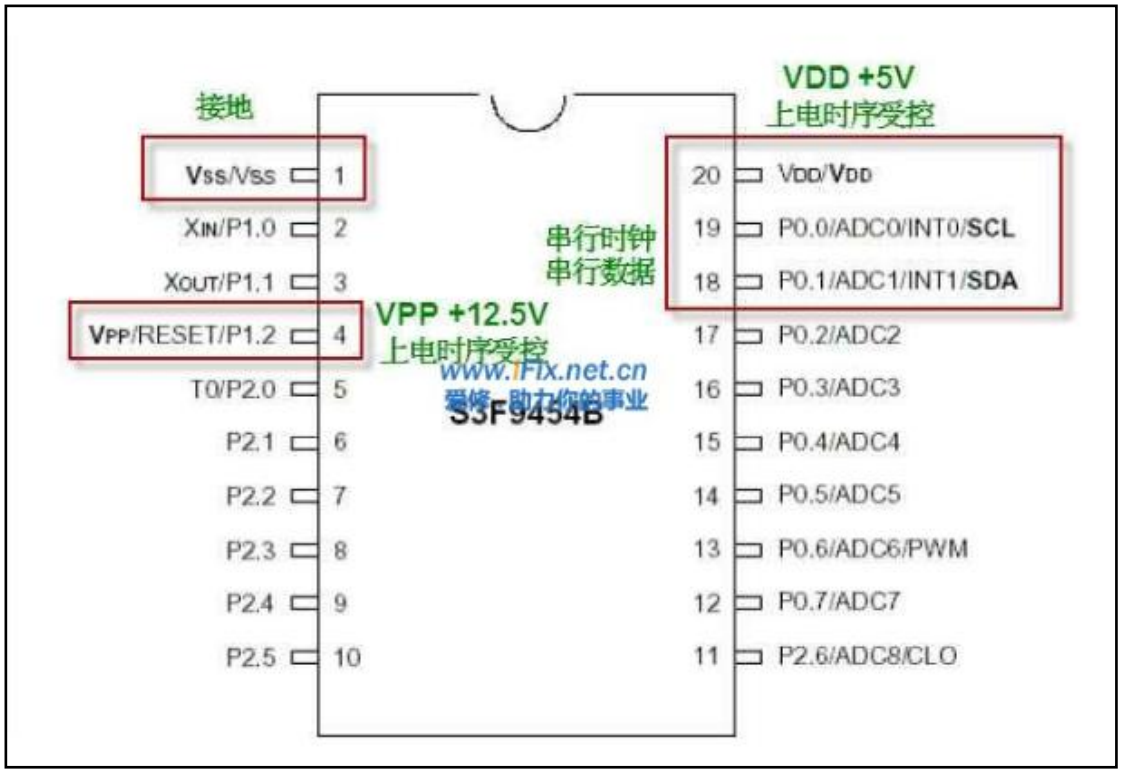
VDD	SCL
SDA	GND

VPP

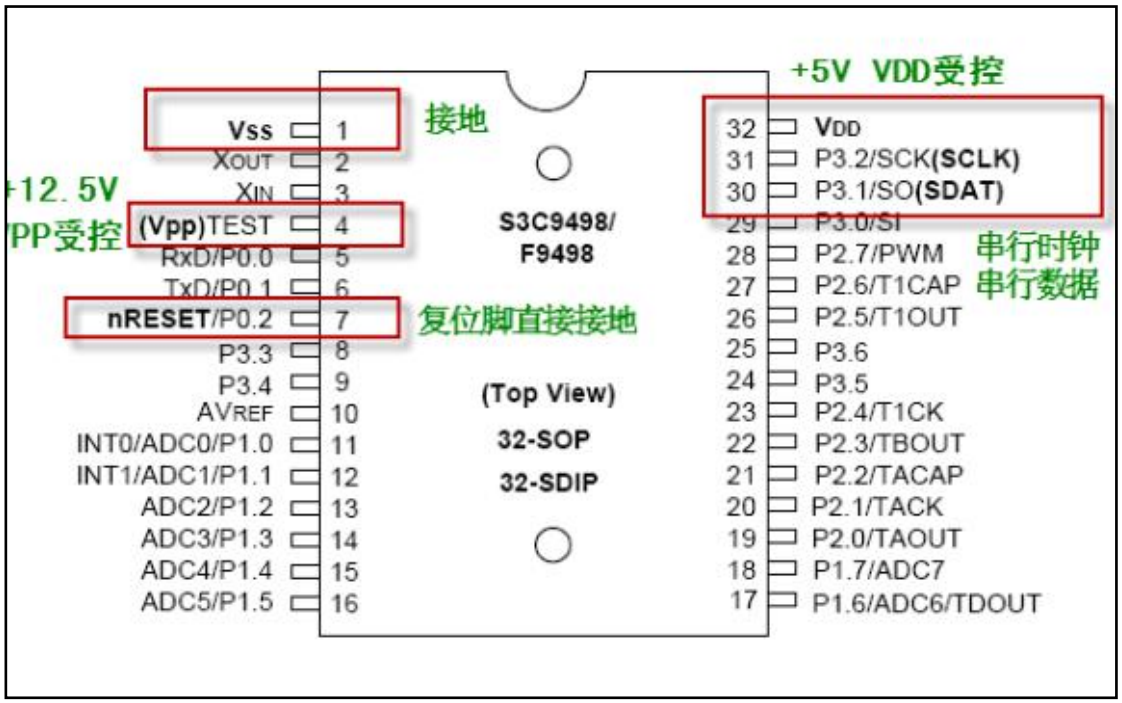
请查看目标芯片数据表，如果芯片有单独的RESET脚，请将此脚接地。

- Recommend : Connect the VPP pin with a 104 tile capacitor to the ground and series connect a Schottky diode on the VDD line,such as 1N5819,SS14 and so on.Connect the positive pole to the ICSP port board,the negative pole to the side of VDD pin of MCU,which can avoid the VPP pin of MCU to break down the VDD pin because of the poor connection of GND ground line.
- There is another commonsense problem : Relevant pins of MCU must be connected well with ICSP board,and insert the ICSP board on the programmer then choose corresponding type to read and write.If to insert the ICSP board in the locking socket first and then connect MCU pin,it is easy to burn the MCU.

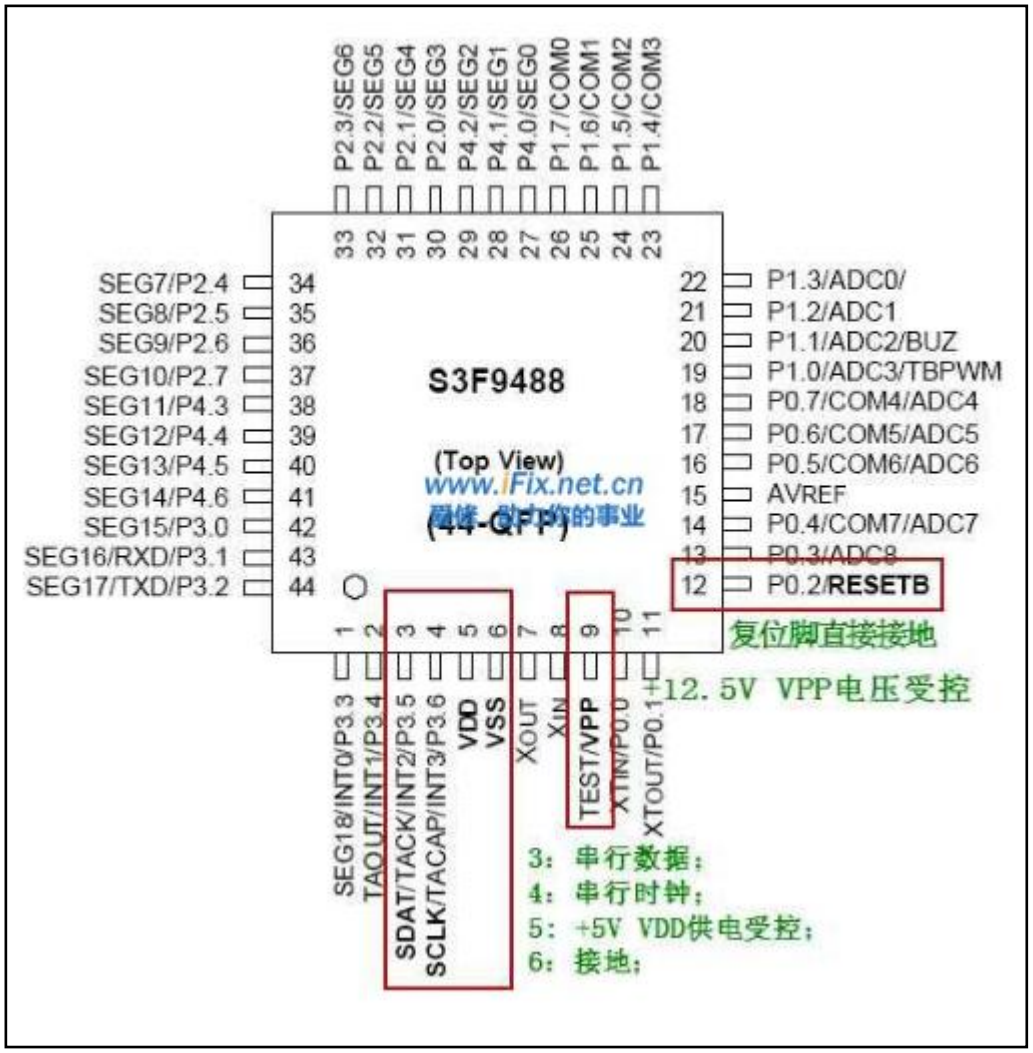
S3F9454 on line read&write connection definition



- S3F9498 on line read&write connection definition



- S3F9488 on line read&write connection definition



4.12.6 Reading Operation

Step 1 : Open the software,choose MCU type manually;

Step 2 : Click “Read”.

4.12.7 Writing Operation

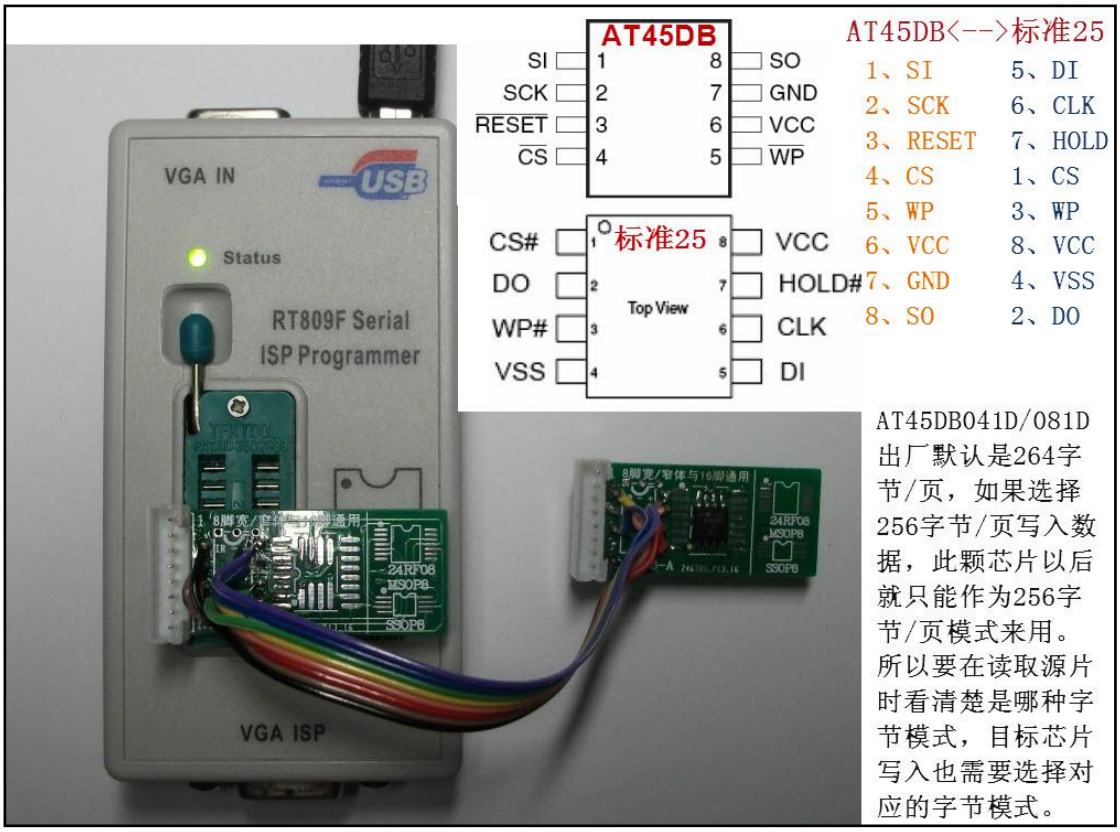
- Refer to 93 chip to backup and open the data.

- Note 1 : The encryption after writing is optional,MCU can be used also without encryption.Click "Protect" to encrypt if it is needed.

- Note 2 : If the RT809F software hints that the program is encrypted after reading,it is no need to save as file,not to write into other chip either.

4.13 AT45DB Series SPI Flash Read&Write —— AT45DB081D for example

4.13.1 Read&Write Connection Diagram



4.13.2 Reading Operation

- Step 1 : Connect the lines correctly,open the software and click “Smart ID”；

- Step 2 : If the software hints “Flashing page is 256 bytes”,then skip this step;if it hints “Flashing page is 264 bytes” then reselect the chip type and read again according to the following picture;

4.13.3 Writing Operation

- Refer to 93 chip to save and load writing file.

4.14 PIC 12F Series SCM’s Reading and Writing

4.14.1 Board Number

Board Number : LD40V9-MAC4X，TCL GC32 chip，standby MCU type PIC12F675。PIC12F629,the same method to read and write.

4.14.2 PIC Series Instruction

MCU of PIC series is widely used in the standby controlling and power management circuits of FPTV,with many types,low power consumption,high performance.When repairing there are maybe some problems,like PIC MCU damage because of the too-high 5V power supply voltage(This MCU will damage when the VDD power supply is over 5.5V),or the IO port of PIC MCU is broken down

because of the static or so on.MCU need to be changed when repairing and then write the program and data in again.

4.14.3 Program Data Source

- The original program and data supplied by after sale;
- The MCU program and data read by self(The precondition is that the MCU hasn’t been encrypted and after reading the RT809F software will ask automatically if to encrypt or not;if the data has been encrypted,the writing is unnecessary.)
- Decrypt the cryptographic MCU to get the program data(If it’s worthy to do according to its value and the cost to decode).

4.14.4 Preparing

- Reading and writing MCU of PIC series on line using RT809F need to buy or DIY a ICSP port board according to the diagram to cooperate with RT809F;

- There are totally 5 lines for the ICSP port,they are VPP program voltage(12V~13V),VDD power supply 5V,GND,PGD data signal and PGC clock signal.

- Users need to check the pin definition of the PIC relevant type of MCU,and connect the pins with ICSP ports correspondingly one by one.If there are ICSP port on the target board,usually they can be connected directly and read or write on line.

- Remove the PIC series of MCU and fly 5 lines to ICSP port to read and write in following situation :
  - There is no reserved ICSP port on the board card, and VPP pin is used as common IO,connected with other chip,it’s the same for this example;
  - After ICSP connecting on line,VPP voltage will be dropped down to be lower than 12V or VDD voltage will be dropped down to be lower than 4.6V;
  - When reading and writing on line by ICSP goes wrong(Because the PIC series programming timing sequence require both VDD and VPP to be controlled,but these two pins on some board cards have the overlarge external capacitor,which makes the timing sequence unqualified,removing MCU,using socket or flying line to read and write won’t have the same problem .)

4.14.5 Attention

- The internal storage space inside PIC series MCU is divided into Code Memory program area,Data Memory data area and Configuration Word / Calibration Word configuration area,the program

area blank is “FF3F”,data area blank is “FF00”.If it’s encrypted,it will always be “0000” after reading.The set point of the configuration is usually saved between program area and data area,is only a few bytes,can click “Configuration Word” button to enter the setting interface and set the configuration word of PIC series MCU,then write the chip.

- As for the configuration word of chip,the general user can read directly without too much attention,it’s OK to write another chip directly when there is no the hint of encryption,the chip encrypted also can be erased directly and written,just can not be read directly by programmer.If use the program or data supplied from manufacturer we need to according to some document description or check the MCU’s data of corresponding type and set the configuration word.

- When the RT809F is reading and writing PIC series,there will be a page of “FF FF” invalid region in the buffer,which is for the two-way compatibility of the Xeltek 280U/580U/3000U reading&writing program,data and configuration word with large consumption.

4.14.6 Reading Operation

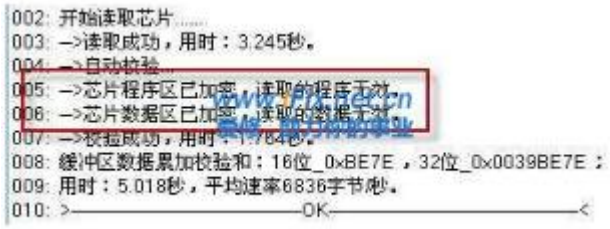
- Step 1 : Open the software and click the button in following picture to identify the MCU type automatically;

- Step 2 : Click “Read”,RT809F software will read and verify automatically again;

4.14.6 Writing Operation

- Note 1 : The encryption is optional,MCU also can be used normally without being encrypted.If you cancel the /CP option of the configuration word before writing,the program area will encrypt automatically after finishing writing and verifying;if cancel the /CPD option the data area will encrypt automatically after finishing writing and verifying.
  Like the following picture,first set and then write:

- Note 2 : If RT809F software hints that the program or data is encrypted after reading,then it is no need to save to be a file,not even write it into another chip.

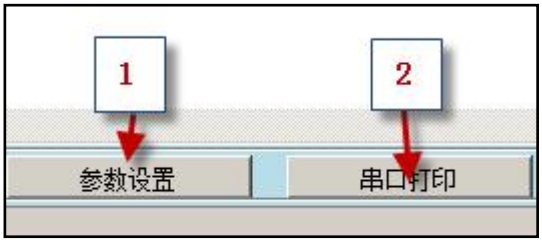


- Refer to 93 chip to save and open the file.

4.15 RT809F Checking the Printing Information of LCD Board

4.15.1 Software Setting

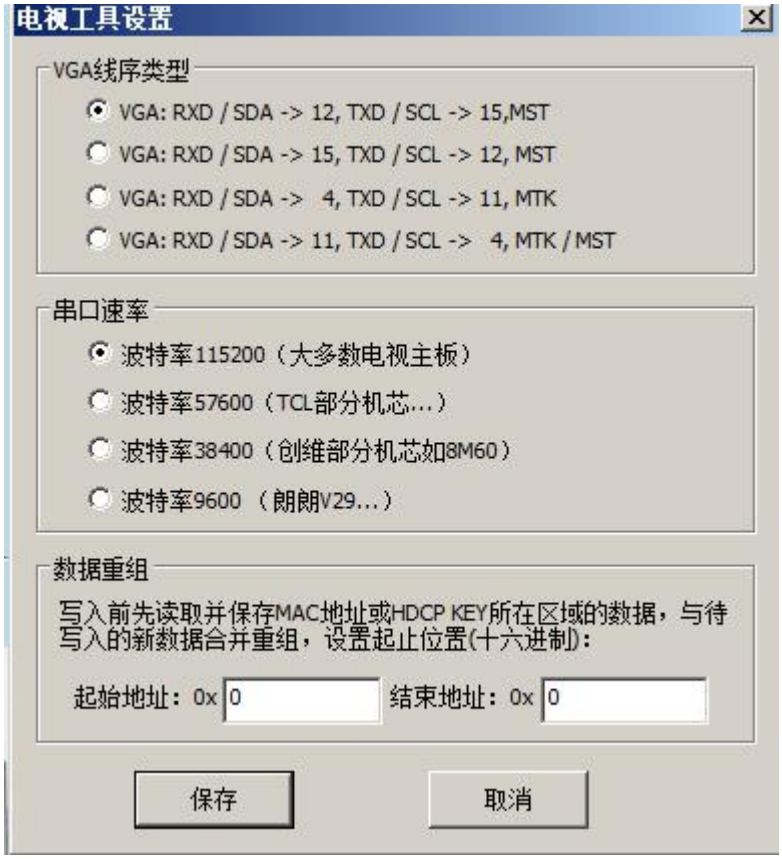
- Open the software,there are two icon at the bottom right corner,like the following picture:



- 1—Parameter Setting:

① VGA lines sequence type : Choose the different lines sequences according to different mainboards,or you can press the button to see the light,different situation corresponds different line sequences(there is instruction before).

②Serial port speed rate adjustment : It will show messy code without correct adjusting,please save after adjusting well.



- 2—Serial port switch
  ①When showing “Serial print”,the serial port is in the closed state.
  ②When showing “Close”,the serial port is in the open state.

- Mainboard connection
  ①RX TX Lead is on the VGA port,please use the matched VGA line directly.
  ②RX TX Lead is on the HDMI port,please use the HDMI line or fly line from the locking socket.
  ③RX TX Lead reserves the extension socket on the board.

4.15.2 Flying line

- If to fly line,please connect the bottom line with ground line.
- The position of the flying line on programmer:
  - White plug,from top to bottom,pin1 to pin8,connect to 2 3 4 pin or 5 6 7pin.

4.15.3 Operation Step

- Step 1 : Connect the lines well first,make sure that the RX TX lines connect correctly;
- Step 2 : Set the line sequences and bit rate well and save;
- Step 3 : After opening the serial port switch,charge the LCD mainboard (The charging order must be correct or there will be no printing information).
- Step 4 : Prepare the software interface well and charge the mainboard;

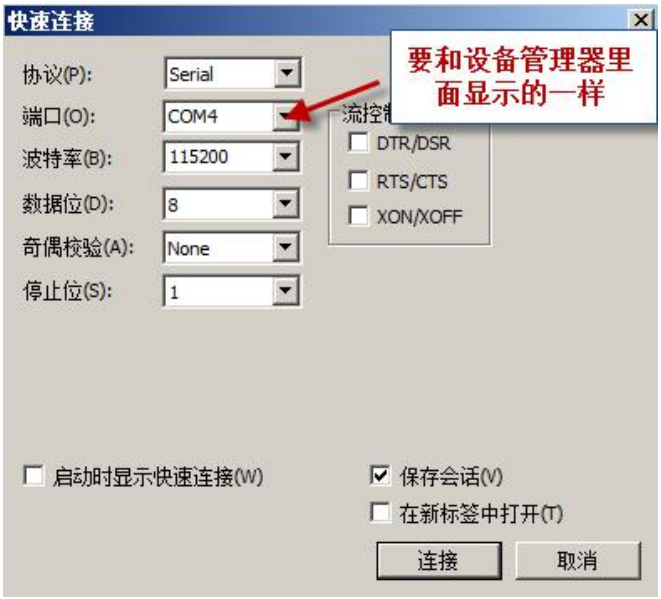
- Step 5 : The printing information showed.

4.15.4 Checking the printing information using Secure CRT

- Step 1 : First close the serial print of software;

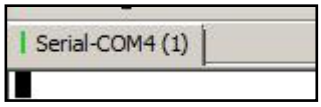
- Step 2 : Open Secure CRT and set;

- Step 3 : The following page will appear,set the parameter like the picture showing at the right;



- Step 4 : Check the port in the device management;

- Step 5 : Click “Connect” after setting;



- Step 6 : When the icon at the top left corner turns green it shows the successful connection;
- Step 7 : Connect the RX TX of LCD mainboard with the programmer;
- Step 8 : Charge the LCD mainboard then you can see the printing information.