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CH341A Programmer Instructions
(Color Light Version v1.5, v1.6, v1.7 Universal)
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I. Introduction of CH341A Programmer

Our compact ch341a programmer is only 22mm*50mm in length and width, easy to carry around, with integrated level shifter circuitry, supporting 1.8v minimum. Based on the compact and convenient design considerations, so through the toggle switch K1 to change the voltage, can support 5v, 3.3v, 2.5v, 1.8v, also supports ttl output (minimum support 1.8v standard) It can be described as compact and multi-functional, burn 8-pin chip and not fall down the serial port brush, while integrated infrared code module. spi interface output support for low-voltage, also through the K1 toggle to achieve.

SoftWare Download: <http://198.11.174.230/ch341a-Software.zip>



This is what our programmer looks like

Plug directly into the usb port and try to avoid grabbing space with other usb devices.

Meanwhile, in order to adapt to most of the 8-pin chips, we have also equipped with simple adapter boards for 25xx, 24xx, 93xx, 45xx and other packages, in order to fulfill the needs in one step. We will also design adapter boards for the packages you need later.

We have labeled the interface and voltage switching on the board, so you no longer need to worry about not finding the instructions.

Differences between v1.5, v1.6 and v1.7:

*Locking Block 25xx, 24xx No Resistor Pull-Up and Down

*v1.6 Locking Block 25xx Partial Resistor Pull-Up

*v1.7 Locking Block 25xx partial resistor pull-up, 24xx partial resistor pull-down

Statement:

The ch341a programmer hardware is designed and developed by us and is copyrighted. The software is open source or shareware and the copyright (authorship) belongs to them, please respect the fruits of their labor and thank them for their dedication and contribution to the programmer industry.

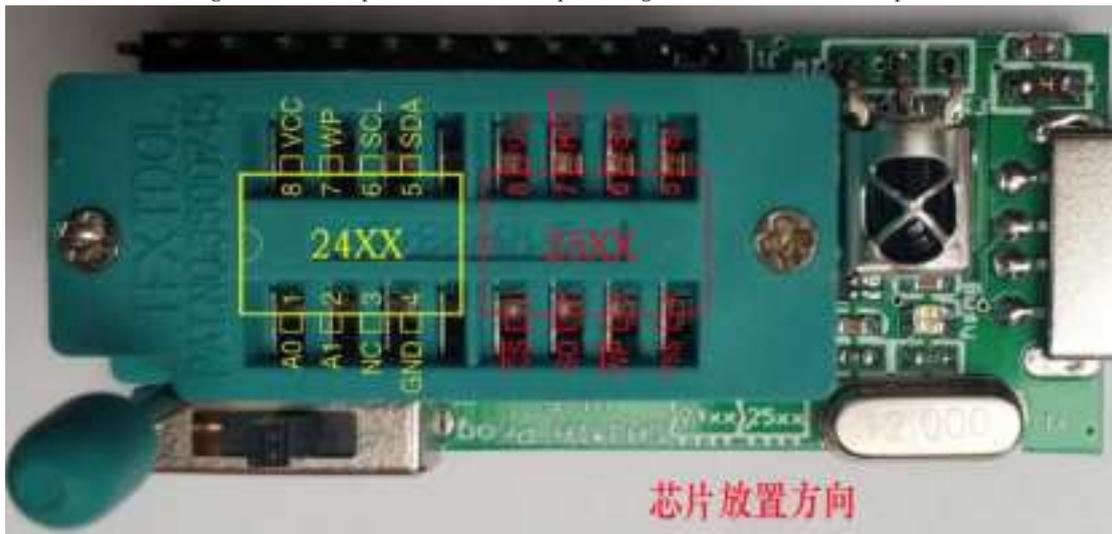
II. Hardware part of the programmer

Programmer design is relatively small, can be directly inserted into the usb port to use, each interface and jumper function have on-board instructions, most of the cases can be understood without looking at the instructions. The programmer has integrated level shifter circuitry and supports a minimum voltage of 1.8v. Based on the compact and convenient design considerations, so through the toggle switch K1 to change the voltage, can support 5v, 3.3v, 2.5v, 1.8v, also supports ttl output (minimum 1.8v low level) Directly support most of the 1.8v 24, 25 chips without the need for level shifter boards, such as w25q64fw, w25q128fw and so on.



1. Chip placement method

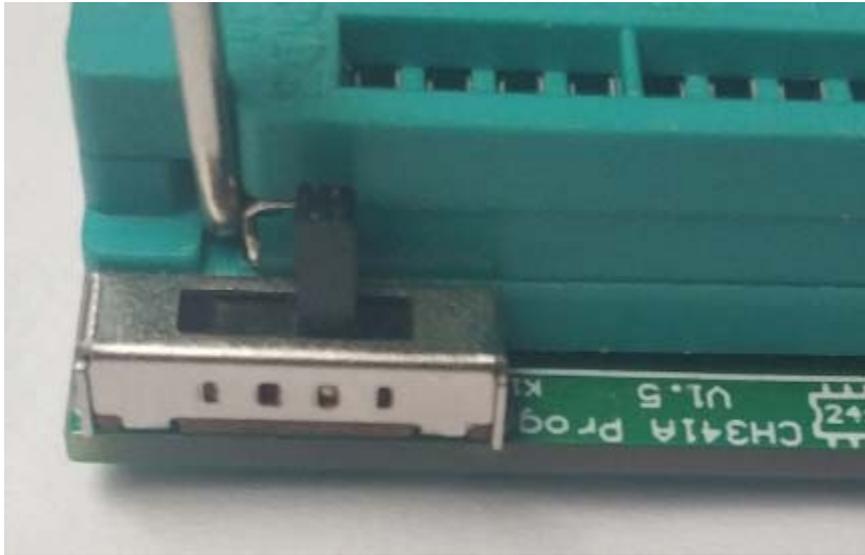
Please refer to the diagram below for placement of the chips, noting the orientation of the chips



We use 16pin locking seat, every 8pin to do a series of chip burning with, the board has placed the direction of the logo. The 45xx and 93xx chips use holders, but you can't put the chips into the locking holders directly, it will burn the chips, please pay attention to it, you can only use the special adapter we delivered to realize it. Please note that there are instructions on the adapter board to put the chip into that part of the holder.

2、 Output voltage Vout

See the K1 marking in the diagram and the jumper instructions on the back of the programmer.



This is the read/write chip and spi pin output voltage, all through the K1 toggle to achieve different voltages back toggle switch position corresponding to the voltage identification



The programmer K1 position is normally issued for 3.3v.

****Toggle switch K1 increases the voltage all the way from the latch to the usb port.**

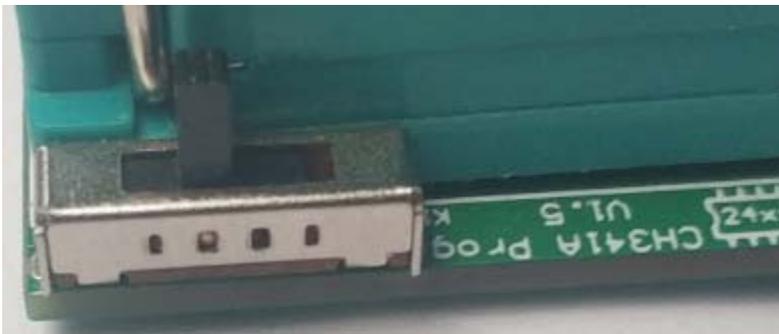
****Please adjust the voltage before burning the chip to avoid burning the chip due to high voltage, toggle switch K1 can not be operated in the programmer in the state of powering up, please unplug the programmer to dial up and then plugged in!**

The toggle position is shown below:

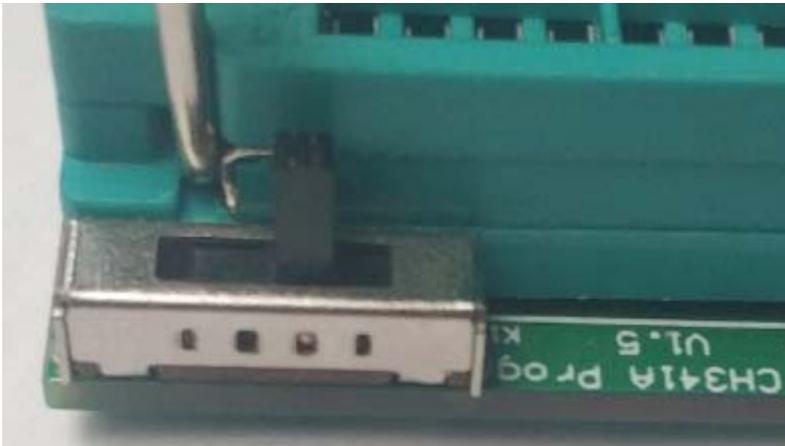
a) 1.8v toggle switch position reference



b) 2.5v toggle switch position reference



c) 3.3v toggle switch position reference (default)

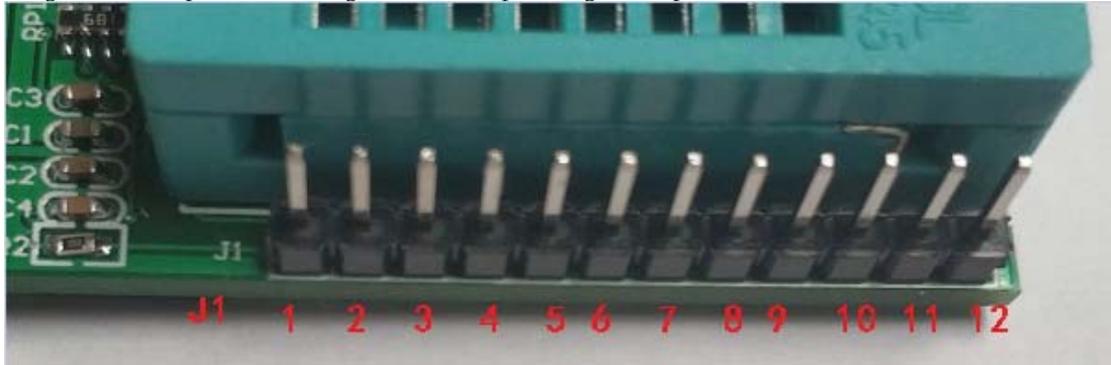


d) 5v toggle switch position reference

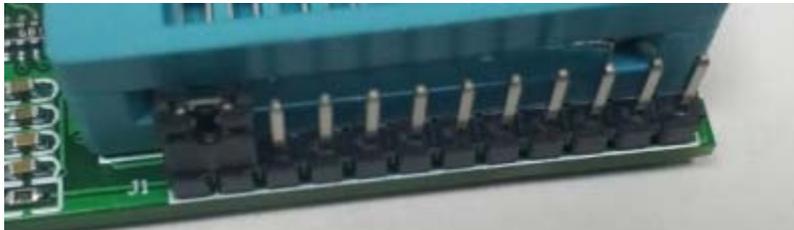


3、spi output (programmer mode)

Programmer J1 pin numbering, with corresponding description on the back



The default setting of the programmer is to short pins 1-2 of spi output J1.



The following is a list of J1 output pin functions

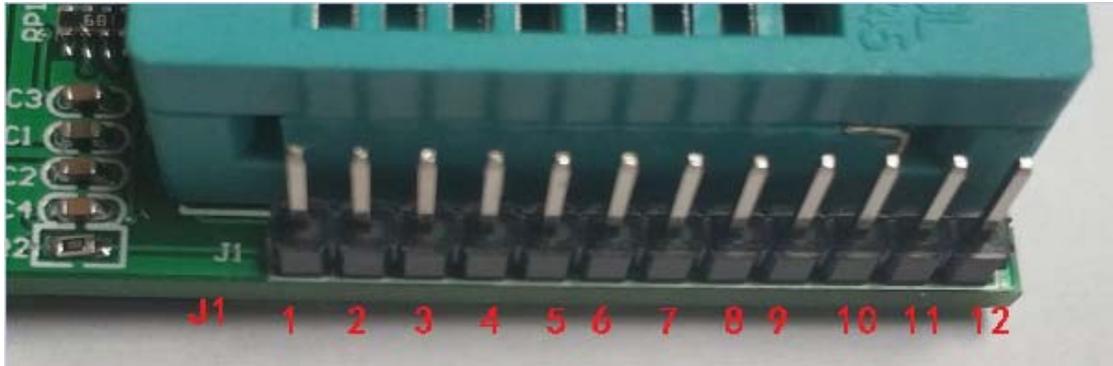
J1	1	2	3	4	5	6	7	8	9	10	11	12
function	SPI/TTL		IR	RXD	TXD	CLK	CS	MOSI	MISO	GND	Vout	5V
ality												

Here we only use pin 6~ 11. Refer to entry 1 for the Vout voltage description.

Through the spi interface to read and write chips on the board, please note that the wiring should not be too long, there will be interference or speed drop or can not recognize the chip, the reference line length of 10cm or so, depending on the circumstances of the set

4. TTL output

The programmer's J1 pin number is labeled with a corresponding description on the back. ttl level can realize various voltage modes, which are realized by setting the Vout voltage of J2. For example, if you need 5v level, just jump Vout to 5v; for 3.3v level, Vout jumps to 3.3v; for 1.8v level, Vout jumps to 1.8v.



This function is the serial port function of the programmer, the output is TTL level, can be directly docked to the cpu's serial port communication, jumper reference to the following chart



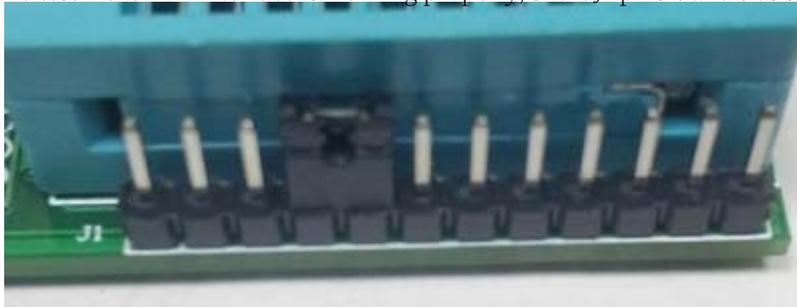
J1 pins 1 and 2 are unplugged from the jumper The following is a description of

the function of J1	2	3	4	5
functionality	SPI/TTL	IR	RXD	TXD

When flashing, you can directly connect J1's 4,

5, 10 will work 5, TTL self test

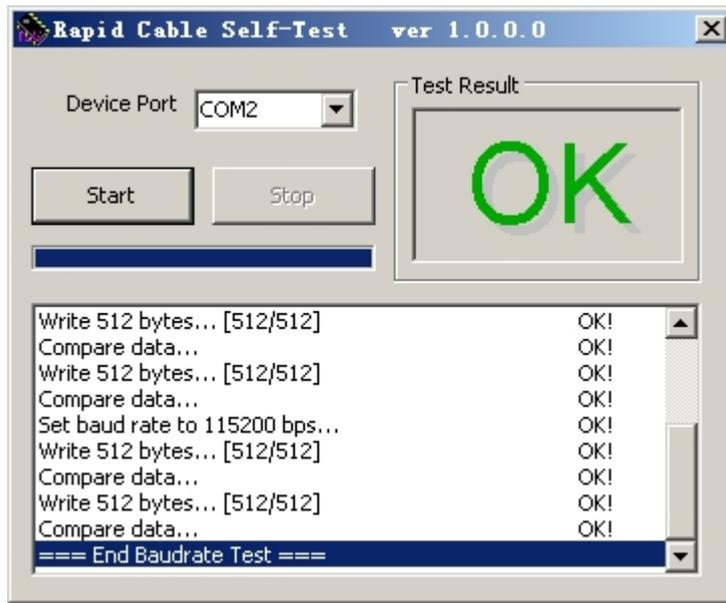
To test if the TTL interface is working properly, short J1 pins 4 and 5 as shown below.



Available general-purpose serial port software to test whether the serial port can send and receive data, we here to provide a simple test tool, test multiple rates at a time to finish

The software is in the root directory of the package, please run "USB-TTL Detection.exe" and set your serial port number.

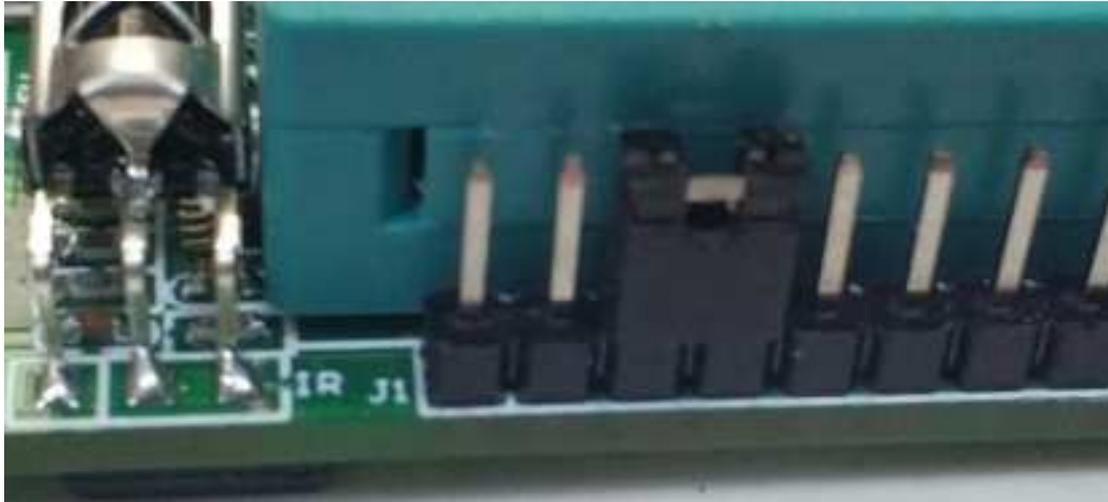
Click start to start the test



If you get an NG message, please check if the shorting position is correct.

6. Infrared code measurement

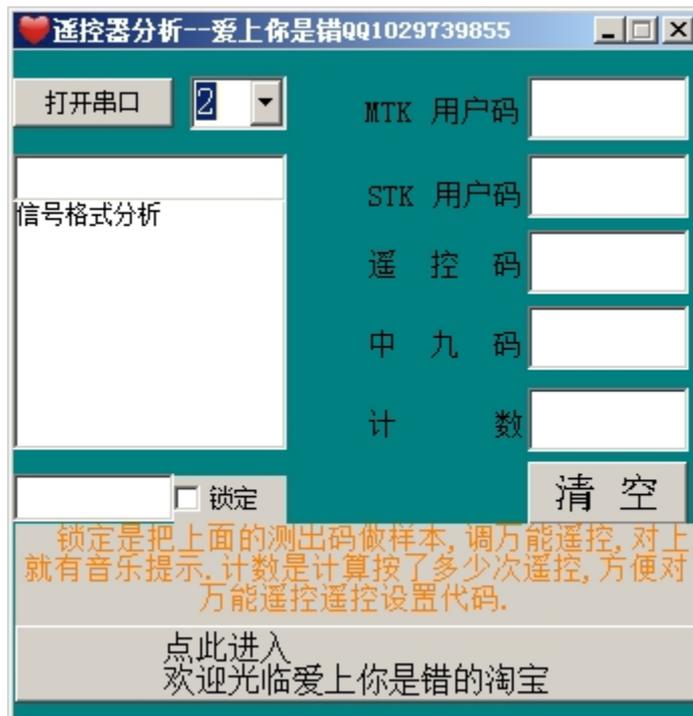
Using the ttl function of the programmer to realize infrared code measurement, together with the special code measurement software can realize the code measurement of remote control and other infrared devices.



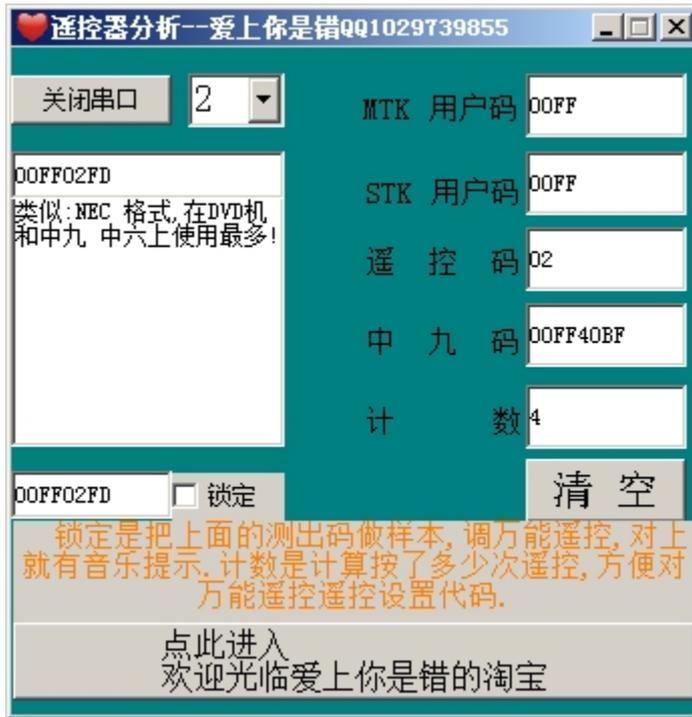
The following is a functional description of J1

J1	1	2	3	4	5
function	SPI/TTL		IR	RXD	TXD

Here we need to short pin 3 and 4 of J1 to realize code measurement, and K1 should be switched to 3.3v or 5v at the same time. Run the "RC Analyzer Fix.exe" software in the package.



Select the serial port number of the 341 and open the serial port.



Press your remote control to realize the measurement code display, accompanied by decoding prompts. Remember to tap to close the serial port before unplugging the programmer after use.

7. Colored lights description

Colorful light version has 3 main colors Power red, plug in the usb is always on

Read/Write 24 Chip, Green, Flashes When Reading/Writing

Read/write 25, 93, 45 chips, blue, flashing mixed colors when reading/writing is colored

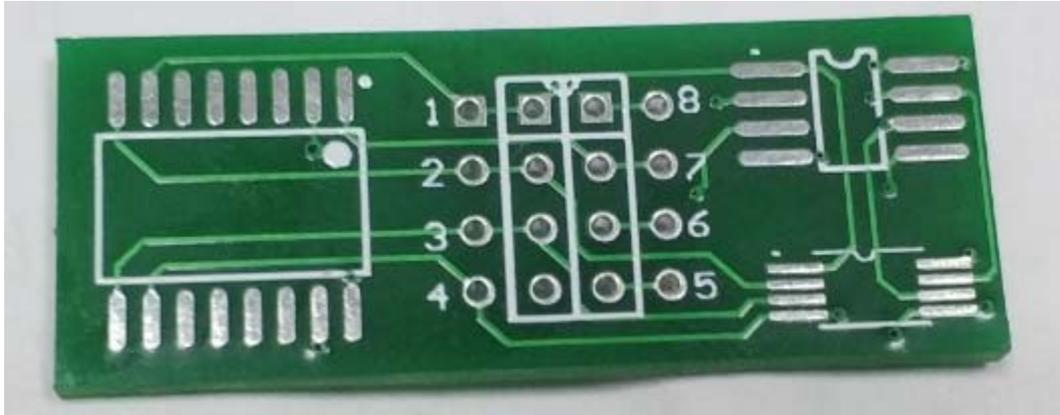
TTL is also flashing when brushing or testing.

IR code measurement, the light will also flash, but not so obvious, code measurement jump connection after plugging in the usb light will be on!

Simple adapter boards and burn-in blocks use

1. Universal adapter plate

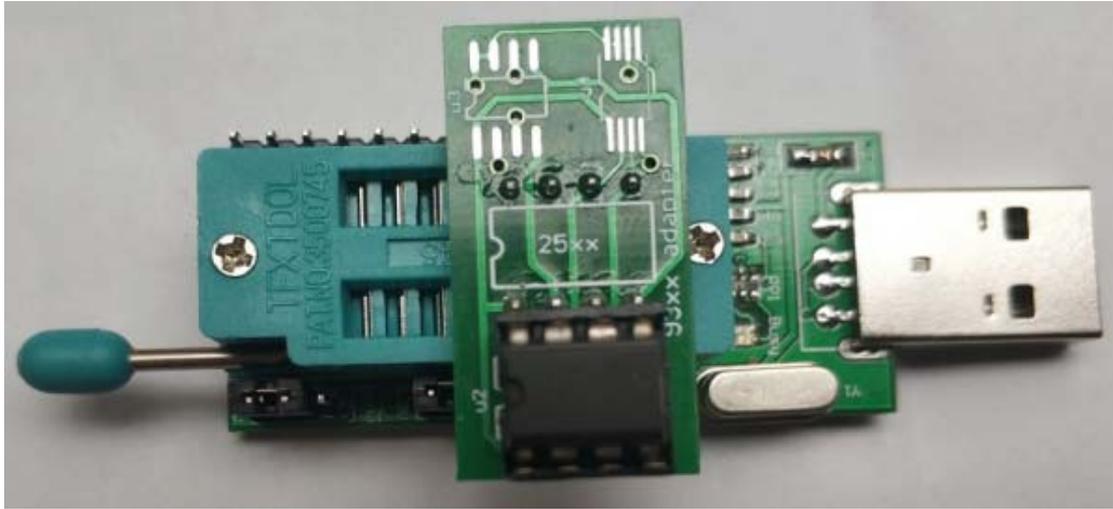
Universal 8pin adapter board can be used for 24xx, 25xx, but the sop16 pads on the board can only be used for 25 chips, and there is also a chip clip interface, please correspond to the pin wiring, the pin number is the same as the chip pin number.



If you need to solder the pins of the rotary clamp, please solder the pins first, otherwise they will be pinned by other pins, and then solder the pins to the holder.

2. 93xx chip placement method diagram

The 93xx chips are read/written using Block 25, so you need to put the adapter board into that position. Please note that you cannot put the 93 chip directly into the locking seat, the pins do not correspond to each other.



Note: The adapter board is only suitable for general-purpose 93 series chips, such as special chips such as br, you can not use the adapter board directly, you need to make your own according to the circuit diagram provided. Please contact the merchant or refer to the wiring diagram of asprogrammer software.

3. 45xx chip placement

The 45xx chip also reads and writes through the 25 holder, you cannot put the 45 chip directly into the locking holder, please use the adapter board. This chip has

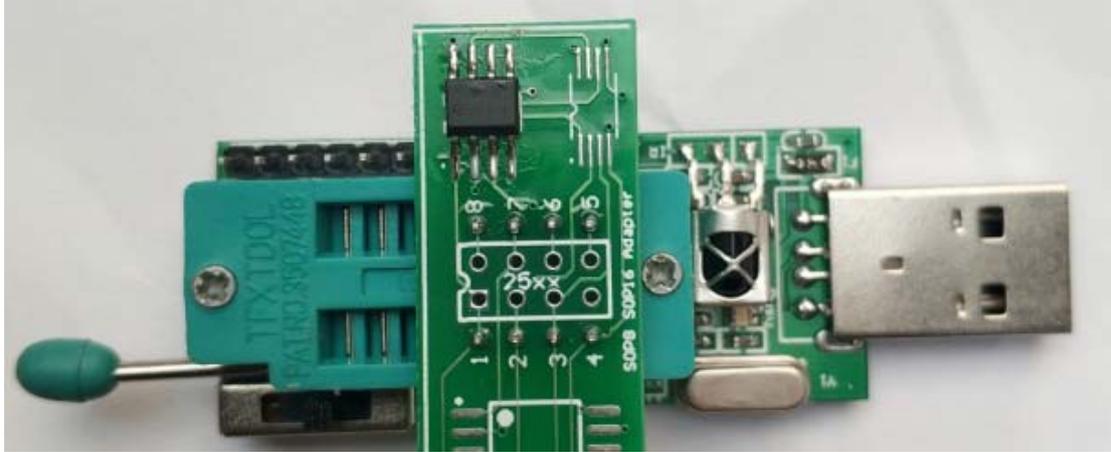
There are two types of packages, long and short, the short one can be directly called out on the board, and the long one just needs to be soldered on the 1-pin side.



If you use other bouncers, please note that the direction of the chip is the same as the direction of the programmer's logo.

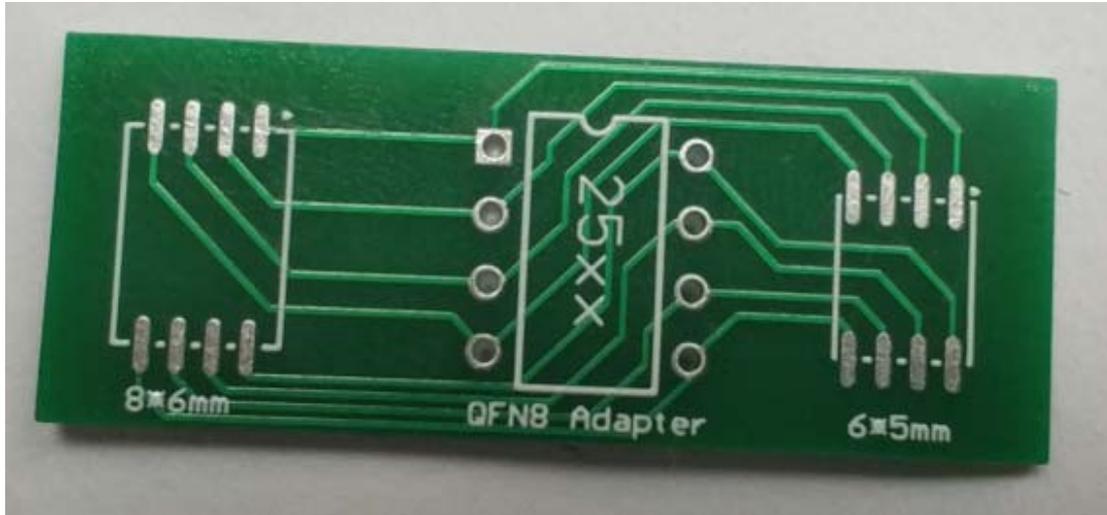
4. st95xxx series automotive memory chips

It is also possible to directly use the **sop8** pad in the general-purpose **sop** adapter board and plug it directly into the programmer **25xx** position. Because the chip does not support automatic search, you have to manually select the corresponding model to read and write.



6, qfn8 adapter plate

The simple adapter board integrated qfn8 8mm * 6mm, 6mm * 5mm two packages of chips, in order to weld, the middle heat dissipation pad is not done, easy to disassemble, and at the same time lengthened pads, easy to direct soldering iron welding.



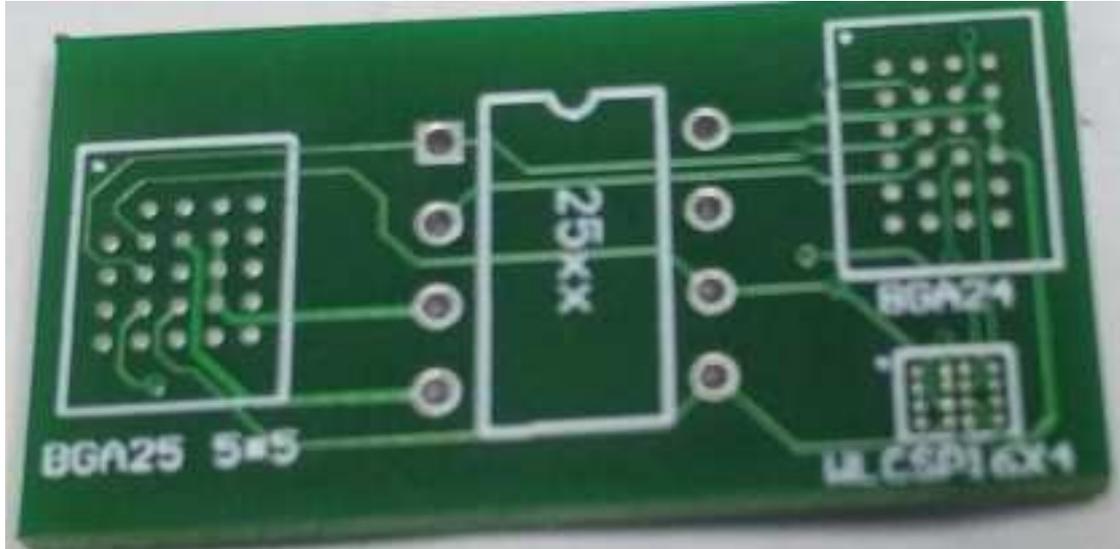
The small white dot on the top is pin 1 of the chip, pay attention to it when soldering.

With this board soldering iron can be soldered, but remove it is best to use a hot air gun to blow down, otherwise it is easy to follow the bad pads

7, bga24 adapter board

This simple adapter plate can be applied to bga24 8mm*6mm 4*6 ball array, bga24 8mm*6mm 5*5 ball array at the same time,

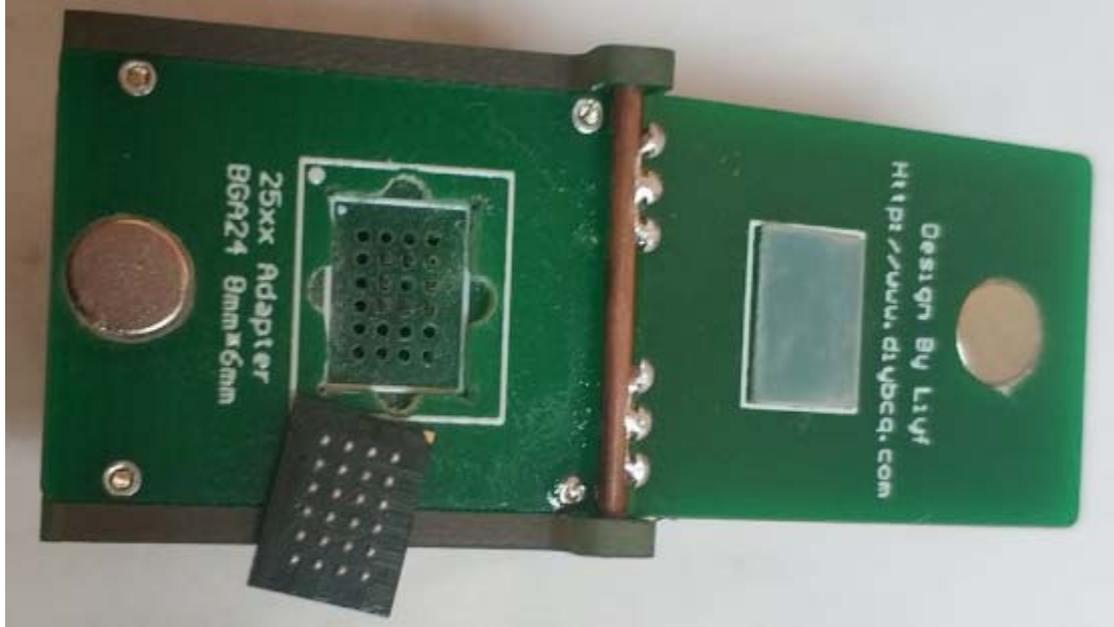
wlcs16 ball, wlcs8 ball chip, wlcs8 directly soldered in the middle two columns can be.



Since this board requires a heat gun, it has Fu copper on the back, and the heat will even out the chips a bit.

8. bga24 8mm*6mm 4*6 Ball Array Flip-Flop Holder

The flip-flop holder made of probes is more convenient than using a simple adapter plate and cheaper than professional flip-flop holders by more than 2/3, which is cheap and convenient, and is an indispensable burn-in holder for maintenance.



Plug the bga24 to dip8 directly into the 341 programmer's locking bracket to use it.

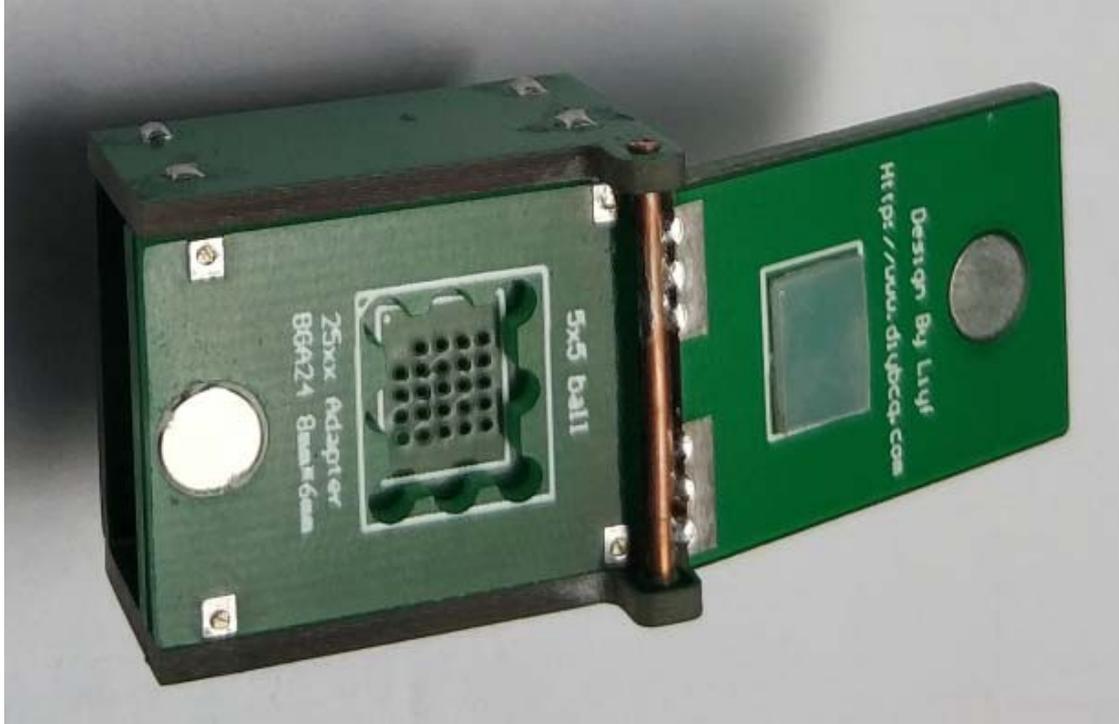


When using it, it is recommended to unplug the programmer and place the chip before plugging it into the usb port to read and write, to avoid burning the chip or usb port protection due to improper placement.

9, bga24 8mm*6mm

5*5 Ball Array Flip-Flop Holder

The flip-flop holder made of probes is more convenient than using a simple adapter plate and cheaper than professional flip-flop holders by more than 2/3, which is cheap and convenient, and is an indispensable burn-in holder for maintenance.



bga24 to dip8 universal connection, can also be used for other programmers

10、qfn8 8mm*6mm Flip-flop seat

Because the chip pad of qfn8 package is relatively small and close to the edge of the chip, it is difficult to design and the precision is quite high. Place the chip may need tweezers to put a good point, and at the same time with the hand to determine the elasticity of the pressure, and then cover the top cover, cover can not be used with brute force, if you can not completely cover, finger pressure resistance, please turn over to check whether the chip runs!



11. qfn8 6mm*5mm Flip-Top Stand

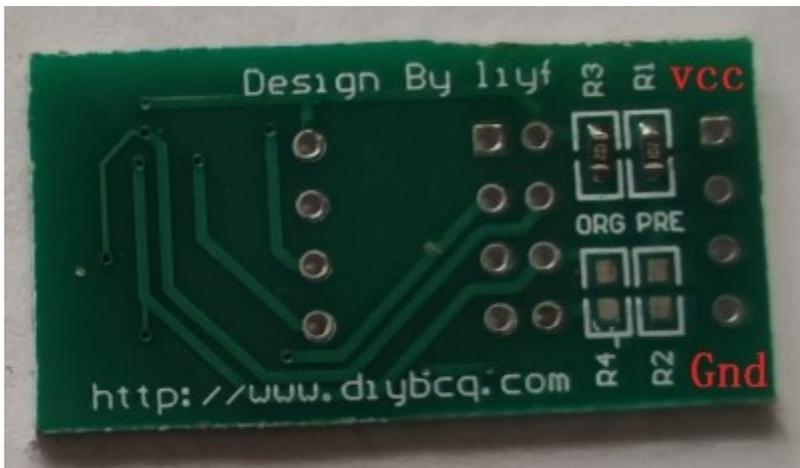
Because the chip pad of qfn8 package is relatively small and close to the edge of the chip, it is difficult to design and the precision is quite high. Place the chip may need tweezers to put a good point, and at the same time with the hand to determine the elasticity of the pressure, and then cover the top cover, cover can not be used with brute force, if you can not completely cover, finger pressure resistance, please turn over to check whether the chip runs!



12. 93xx adapter plate improved (optional)

There are many manufacturers of 93 series chips, the wiring is mostly the same, but the main difference lies in pins 6 and 7. The adapter boards distributed are generally universal, but may not work for some chips. For example, it can only be used in 16-bit mode, and st m93c46 which requires pin 7 to be grounded, etc. Others that I haven't come across are not listed. In order to be adapter board to adapt to a wider range, so the design of a more versatile adapter board, but the demand for their own soldering of different resistors to achieve!

The resistor will be soldered to R1R3 by default



Chip pin 6, corresponding to the mark org R3R4 two resistors, R3 pull-up vcc for 16-bit mode, R4 pull-down GND for 8-bit mode chip pin 7, corresponding to the mark pre R1R2 two resistors, R1 pull-up vcc, R2 pull-down GND, this depends on the specific chip to determine, in some cases, R1 can not be soldered can also be used, 93sxx chips need to be soldered to the R2 to work!

After soldering the following picture



13、BR93xx adapter plate (optional)

Such as: br9010F, br93c46F, 93CS46F, etc. can not be used directly with the default 93xx adapter board, the chip may appear hot, so specifically designed for such chips an adapter board, please see

<http://www.diybcq.com/thread-145554-1-1.html>

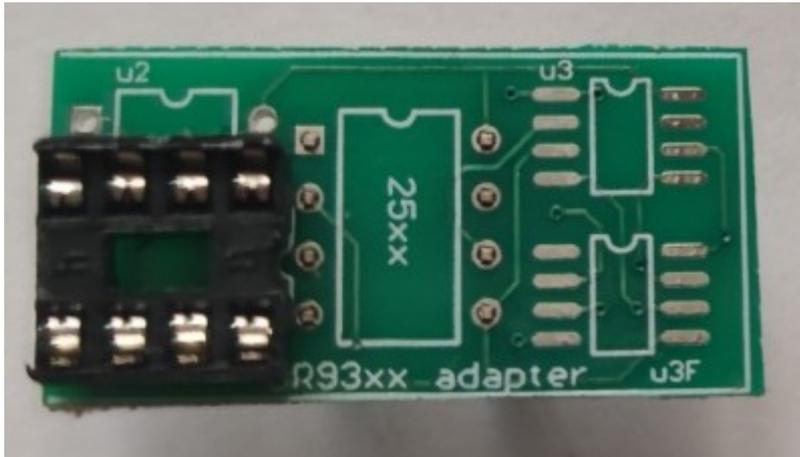
Resistors are soldered on by default.



Resistor pull-down ground for 16-bit mode



Chip types without F are soldered in the way shown above, and sop packages are soldered with u3 pads.



Models with F, dip inserts need to be soldered as shown above to work, sop uses U3F pads.

IV. Installation of drivers

Generally the programmer software zip package with driver, if your system is win7, may also automatically install the driver, if not installed, please install.

There are driver installation files for the most recent ch341 in the latest driver directory of the packet.

1. Programmer driver

Normal programmer mode uses a parallel driver, so please run the CH341PAR.EXE file to install it.



The latest driver supports x64 bit, just follow the prompts to install it.

2. TTL serial port driver

If you are using the TTL method, then run the CH341SER.EXE file to install it.



Please follow the software prompts to install it.

V. Programmer software

Statement:

The ch341a programmer hardware is designed and developed by us and is copyrighted (copyrighted) by us.

The software is open source or shareware, the copyright (authorship) belongs to them, please respect the fruits of their labor and thank them for their contribution to the programmer industry.

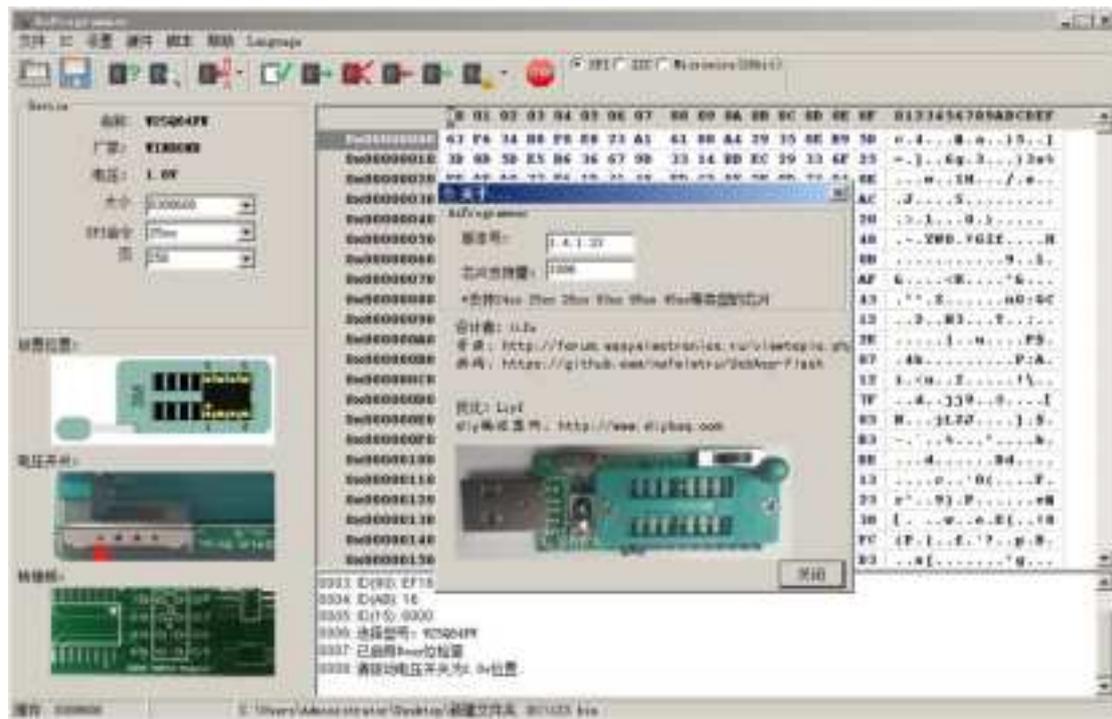
The programmer we designed strives for versatility, so as long as the programmer software developed based on the ch341a chip can be used, depending on which one you are familiar with. Here we recommend using AsProgrammer, neoprogrammer and Maple Leaf Online to write software for ch341 usb programmer. [For more software and resources please visit](#)

1. AsProgrammer (diy programmer.com optimized version)

The original version of the open source software, the original designer for tifa, [source code](#), [the original post URL](#), thank him for his selfless efforts.

The advantage of this software is that you can easily realize the addition of the chip model, at the same time to use our programmer to read and write 93, 45, 95 chips can only use this software. We provide the software in the original version of the basis of optimization, modify the interface and prompt function, suitable for everyone to use habit, the operation is more simple, at the same time, we also have a chip read and write operation video on the website for everyone to learn reference. The website also has source code download ([link](#))

Programmers and software on the website will be updated in real time, please pay attention to [the CH341A programmer](#)



Specific use of the package, please see the "3. Tutorial", which has text tutorials and video

tutorials program to add their own chip model please move to the website:.

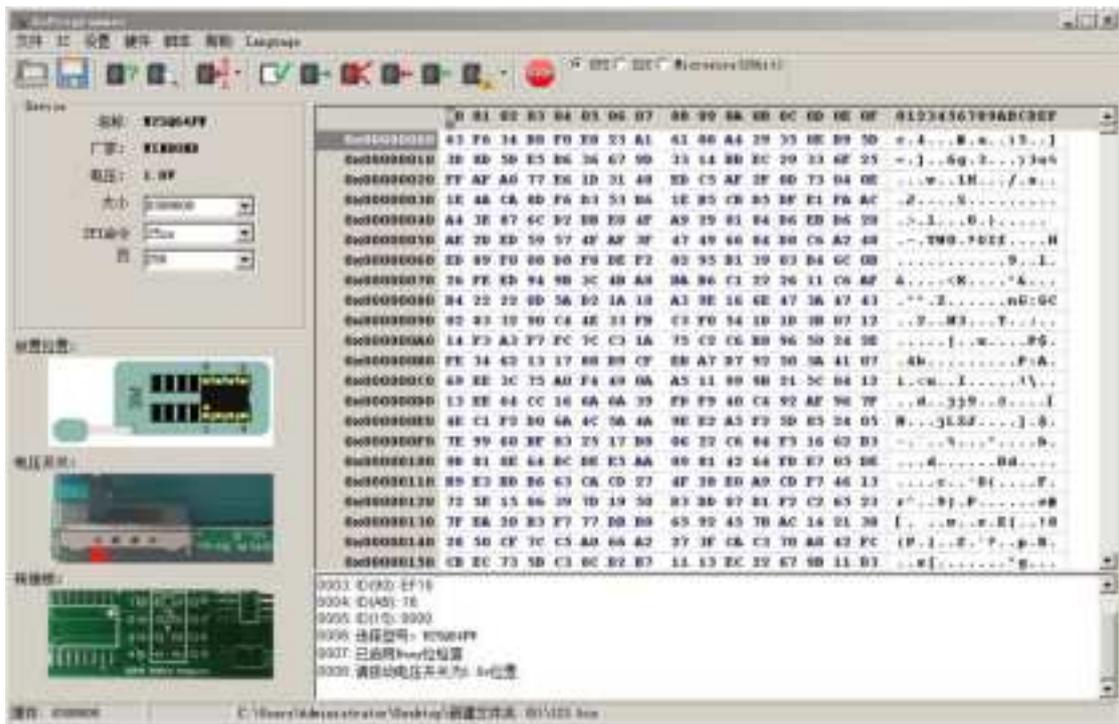
How to add chip model number to AsProgrammer software <http://www.diybcq.com/thread-144126-1-1.html>

How to find the information you need from the manual <http://www.diybcq.com/thread-144154-1-1.html>

1.1 Tutorial on how to use asprogrammer

Because the original software is not very convenient to use, so we do in order to adapt to the habits of everyone to do the layout adjustment, at the same time will be the function of the iconization, both easy to use at a glance. The following is the software after our revision, and optimize some functions, make the

It's faster and easier to use.



software interface

Mainly introduces the operation of the toolbar, the following is the toolbar function description, as long as your mouse over the corresponding buttons will be prompted, here in order to intuitively do the identification of the

a) The save function is turned on.

This is a commonly used function, we basically see the icon know, do not explain in detail.



Open only supports bin file format, so open will automatically filter bin files, of course you can choose all



files. Save is also saved as a bin file, automatically add the .bin extension

b) Chip Selection

Here are the common functions of the programmer, simplified for simplicity.



A key to identify the function, mainly for the 25 chips with id identification number is effective, as long as you find the right cause of the automatic list of total user selection. Many models have the same id, so it is normal that several models may be recognized.



Model selection function, for other unrecognizable 25 or other models of chips can be quickly found through this function, just enter the corresponding keywords can be quickly filtered out for selection, double-click on the corresponding model can be.

c) Read/write function

Here are the main operating functions of the programmer, mainly read, write, erase, check null, verify, lock and unlock, one key programmer and so on. For different chip models, some functions may not be available, which is normal.



One-click auto-programming function, click once to automatically perform several functions of unlocking, erasing, writing, and verifying, and errors will be prompted in red font.



Check empty common energy, check whether the chip is empty, generally

check whether the FF is empty flag



read out function, read out the data in the chip can be saved as a file through the save function



Erase function, clear the data in the chip and restore

the ff state



Write function, write the cached data to the

chip



Calibration function, will read out the data and cache data comparison, found to be different will red prompt



ation

Unlock the unlock function, the default point the button is unlocked with a small arrow has other functions, lock is also among them, this is mainly for the 25 effective it, other chips to be verified!

d) Cancel operation



Pause function, here is mainly an additional set of features, generally only for the read out of the checksum checking empty function is effective, write erase is not canceled

1.2 Chip Support List

The basic commonly used 24xx, 25xx, 93xx, 45xx, etc. are all supported, and some M35xx, M95xx, etc. series chips are also supported, please use the Chip Query function or check if there is one in the support list file.

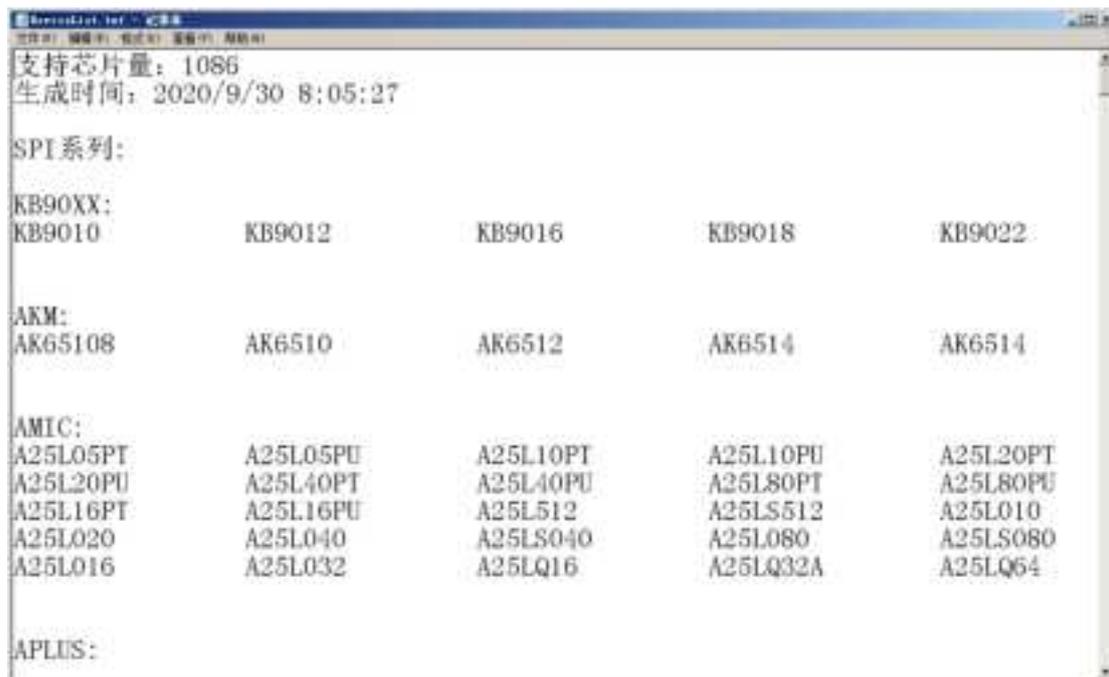


Chip Support

The DeviceList.txt file is already available in the programmer software directory, so you can open it and check it yourself. You can also re-generate the latest one: Help - "Generate Chip List - "Yes

After generating the file, it will automatically open the file in Notepad and overwrite the same file in the program directory.

(See the video tutorial "Generate Support List.avi" for details)



1.3 Add Chip Support Models

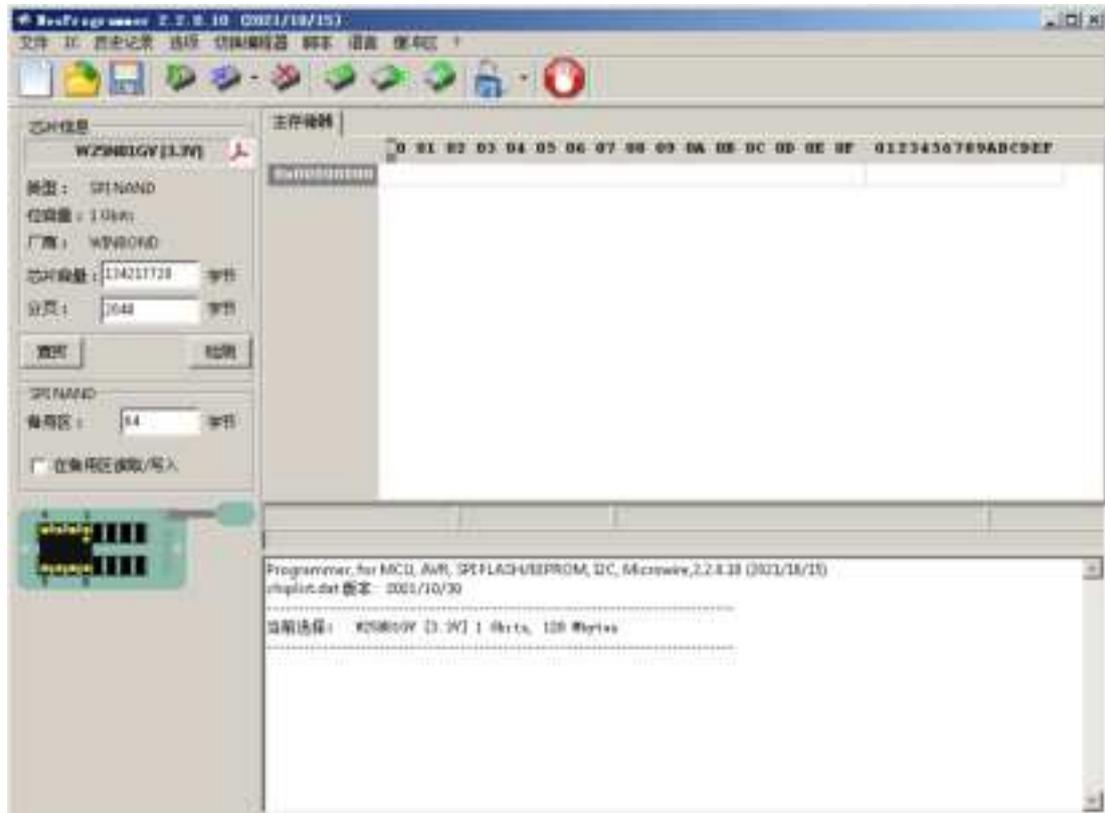
At this stage, there is no good interface to add chip model, it can only be realized by manually editing the chip support file. For details, please refer to the website posting.

⚡ [AsProgrammer software to add the chip model number method](#)

⚡ [AsProgrammer software to add chip model number method - how to find the required information from the manual](#)[Asprogrammer own add model number support video tutorials](#)

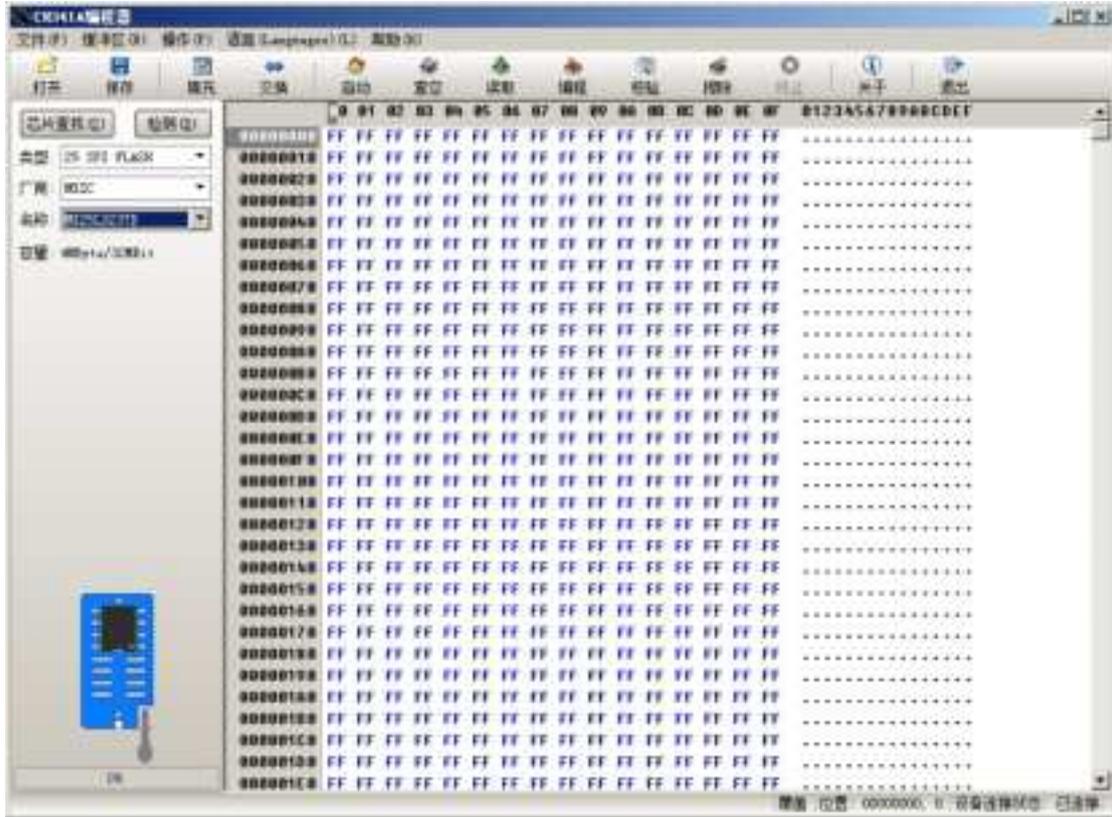
2. neoprogrammer

This one is also based on `asprogrammer` revision, the usage is similar to our optimized version, but the chip support maintenance is slightly troublesome, can't add it very friendly. But the good thing is that it fixes a lot of bugs of the original version, and adds spi nand chip support at the same time.



3, ch341 usb programmer software

This is now the ch341 programmer commonly used software, what the dirt gold board, green board, basically use this software. Our programmer can also be used directly.



How to use the method of their own Baidu, will not repeat here.

VI. Common problems and methods of handling them

The problems found are listed here with solutions, and the problems are as of the date of the document release.

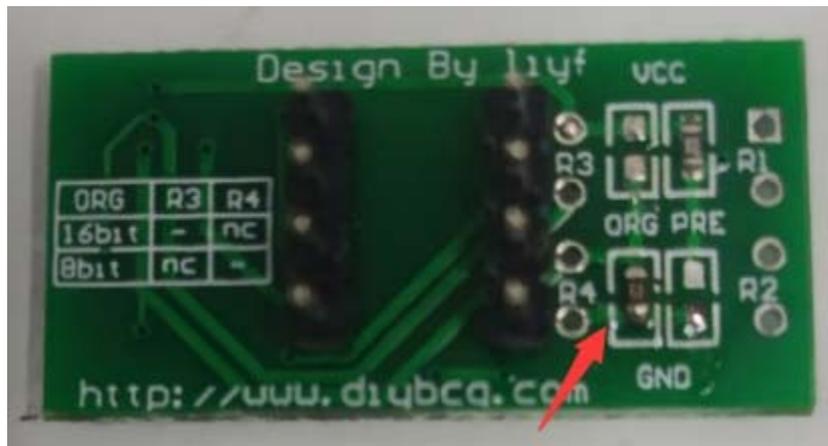
1. The software of the Tudor Gold Edition does not read or write the 32M chip properly.

This is a possible problem with the data processed by the software, not the programmer, please use the **AsProgrammer** software to solve the problem or change to a newer version of the software. The version 1.34 that came in our packet also has problems.

2. AsProgrammer can't read/write microchip's 93LC46A, 93LC66A.

The suffix A is 8bit mode, you need to remove resistor r3 on the adapter board and solder it to r4 position. **asprogrammer** has address length bug, please use **neoprogrammer** software. For the old version of adapter board, please refer to [the delivery of the 93xx adapter board to the new 93xx adapter board method](#).

If there are other chips with similar distinctions, please follow the above.



3. is reading and writing operation, the operating software will appear to read and write the status light off

This is mainly the host computer software using single-threaded design, in response to other operations caused by reading and writing pause operation, normal. Stop the operation will continue.

4. AsProgrammer reads out smaller files than professional programmers such as Acme.

This is mainly because **AsProgrammer** did not read the data in the otp area, in the chip list file, many chip models have this otp area, but there is no setup, so they are not read out, this is normal.

5. AsProgrammer read and write w25q64fw not normal

Please check if the voltage jumper is set to 1.8v. This chip has very strict level requirements, and random problems can occur if the voltage is not correct. Please refer to section 2.1 Voltage Output **vout** for settings.

6. AsProgrammer read/write may not be normal under win10 system.

I tested Win10 Enterprise Edition in a virtual machine without any problem, but are still many versions of Win10 or other software interfering with it. Please try a different system.

7. the same chip model how to read and write slower than your

This is mainly 341 hardware determines the way he works, mainly determined by the fast and slow computer hardware system. At the same time 341 programmer in read and write the best not to operate other, which will lead to read and write time is extended.

8, the programmer plugged into the computer can sometimes recognize and sometimes not

This is mainly desktop usb interface plug and play frequently, there may be usb port contact problems or loose, resulting in power supply or usb interface contact problems, it is recommended to use usb extension cables to connect the motherboard usb or replace the front usb panel to solve.

9. The voltage switch has been pulled to 5V, but the voltage is only 4.2v.

This voltage is normal. Because our voltage output goes through the voltage regulator. But the input voltage to the regulator must be greater than 5.7v.

The maximum voltage of usb power supply is only 5.1v. Don't worry, it can be programmed normally. This problem has been solved in v1.5, but only appeared in previous versions.

10. USB-TTL detection always fails

a) Please make sure that J1 pins 4-5 are shorted.

b) Please make sure you set the right port number, the software only supports com1 ~ com12

c) The port number may be occupied by other devices, please change another port number. Please see the video tutorial "ttl test to change port number".

11. USB-TTL detection prompts cannot open port error

a) Please refer to Problem 10 to deal with.

b) If you use usb hub expansion port, please remove it and then test c) Please try to modify other port number to test, still not work, please restart the computer and try again!

12. Automatic programming always checksum address 00000000 error

a) Please make sure the chip type is correct.

b) Please make sure the voltage is at the corresponding chip voltage position (3.3v chip your voltage K1 is set to 1.8v may not be normal)

13. infrared code sometimes can be measured sometimes not

a) Please check if the voltage switch K1 is in the 3.3v or 5v position, below 3.3v may be unstable b) Make sure your remote control battery voltage is normal or if the remote control is normal c) Please remove the obstacles near the IR receiver head.

14. point the automatic programmer after going to the protection link stuck not to go

If the chip is placed in the wrong position or the contact of the chip is bad, tap the stop button to exit the programming state. After repositioning the chip, tap the question mark button to confirm whether the chip can read out the id, if it can read out, it means the contact is OK.

15. "Error connecting to CH341 programmer (-1)" appears a)

Please install the driver, refer to 3.1 Programmer Driver.

b) Check that the jumper of J1 is in the 1-2 shorted position and re-plug the programmer.

c) Programmer hardware is not selected correctly. Menu bar-->Hardware-->ch341av1.5, the settings are automatically saved after closing the software.

16. "Connection USBAsp programmer error (3)" appears.

Programmer hardware is not selected correctly. Menu bar-->Hardware-->ch341av1.5, the settings are automatically saved after closing the software.

17. reading and writing SST's chip is so slow

This is normal, mainly because this type of chip is relatively special, software processing this piece to be optimized.

18. win10, asprogrammer interface is messed up.

This is the win10 system font size or zoom caused, set the standard or 100% can be solved.

19. to find a new device, can not install the driver or driver exclamation mark

a) When installing the driver prompts the driver signature problem whether to continue to install, please select OK b) in the device manager to see the "external interface" under the item with an exclamation mark, please reboot and then try again c) may be a problem with the system, please change the computer to try or to change the usb port try

20. "Possible encryption, please press the de-protect button. "Tip

- a) This often occurs in the case of burning on the clipboard, please remove the chip to read and write
- b) Some of the chip removed to read and write will also appear, this is to see if the calibration is prompted by an error, to not pass on all right, you can try on the machine!
- c) If the calibration does not work, the chip may be bad, we suggest to change the chip and try.

21. Directly using the clip on the board chip read and write can not be

Programmer read and write chip are put on the programmer by chip read and write, this is a trick operation, there may be uncertainty, there may be some boards can be, some boards can not be the case, this is not a programmer problem. If there is an abnormal situation, it is recommended to remove the chip to read and write. Or have the ability to refer to the following link to exclude themselves:

[Several possibilities and solutions for ch341a programmer clip board \(on clip or on board flywire\) failure](#)