

# UP-48A High Speed Universal Programmer (Advanced)

## User Manual

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## Chapter 1 Packing List

- UP-48A HSUP 1 set
- 220V wire 1 line
- USB flex 1 line
- CD attached 1 disc
- Instruction /Guaranty Card 1 piece
- Measurement: 310mm \* 170mm \* 45mm

## Chapter 2 System Requirement

- PC or portable PC with USB port
- 32MB RAM minimum, 64MB recommended
- Windows 98 / 98SE / ME / 2000 / NT / XP (English or Chinese BG/BIG5)
- CD-ROM
- 20MB Hard disk space or more

## Chapter 3 Features

- Connect with PC via USB port
- Embed high-speed CPU and all the program calculating can be running in it to make programming accurate and fast
- Incomparable programming speed. Erase, Blank, Program and Verify a TE28F320B3B only take about 60 seconds
- Flexible configuration of hardware to adapt it to future usage, you just update the software (freely), without other payment to improve capability
- 48 pins universal socket, without additional adapters to fix DIP chips with lower than 48 pins. And attached Adapter can use for all kinds of PLCC, QFP, TSOP, PSOP, SOIC, SSOP, SDIP and BGA devices
- Support the newest devices of FLASH, EPROM, EEPROM, MCU and PLD etc.
- Power inside with 256 Level, adjusted voltage 0.7V~25.5V
- Changeable DIP48 Socket
- Auto-check pins connection, graphic displaying the device's connectivity
- Perfect over-current protection: if auto-checked the over current, it will cut the current in one millisecond and display the warning, protect the device and the programmer safe
- Mass program mode, intelligent sense technique, auto-check device in and out the socket
- Support Windows 98/98SE/ME/NT/2000/XP operating system
- Multi-language (English, Simplified /Completed Chinese) interface and easy-to-alter; auto-select language by corresponding system

## Chapter 4 Installation and Configuration

- Installation: Software Installation, Hardware Installation and USB drivers Installation
- Suggest that you'd better Setup Software first, then fix the hardware, at last Setup the USB drivers (automatic setup)
- **Software Installation**
- ◇ Put the CD attached into CD-ROM, it will auto-run. If it can't auto-run, just run the "setup.exe" (or setupa.exe) file to run it.
- ◇ Restart the windows.
- **Fix hardware**  
Connect wire to 220V or 110V AC power (UP-48A will change voltage automatically), then

connect USB flex to USB port of PC.

- **Setup USB drivers**

- ✧ UP-48A utilize USB port as means one USB device, so you must install its drivers.
- ✧ Power on the UP-48A Instrument, then it will display that USB device is found, it can automatic setup the USB drivers.

## Chapter 5 Software Usage

- **Initiate the software**

- ✧ Click “Start”/“Program”/“UP48”/“UP48A” to start up the program, as Fig. 1
- ✧ If the connection is bad or the power is off, it will display “Can’t connect with UP-48A”. Please check carefully and restart it again

- **Interface details**

- ✧ The interface is divided into four parts, as follows:

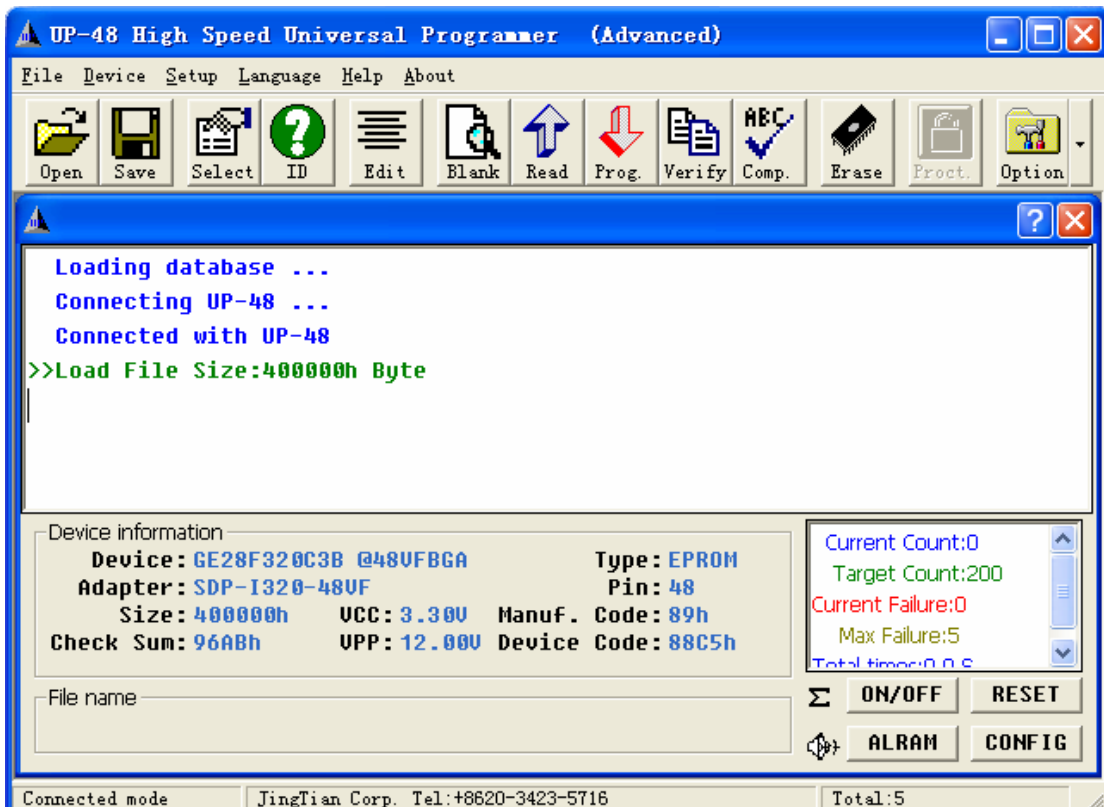


Fig. 1

- ✧ **Menus and tools bar**

All the function buttons are here, open file, save file, select model, check ID, edit buffer etc. as details please refer to **Chapter 6**

- ✧ **Main box to prompt**

The process or result information will display in different color: common operation in blue; user's stop in Yellow; wrong operation in red; right operation in green. The box will scroll up automatically, and the “>>” symbol before a sentence means it's the newest information.

- ✧ **Device Information**

It can tell you the information of chosen chip, such as model, size, adapter and ID code. Before your operation on chosen chip, please check carefully on this information lest failure occurred later

- ✧ **Statistics Box**

The mass mode information of current count, target count, current failure, Max failure and every operation time will display in it. The statistics function is usable to mass mode only

except time summation. If the “ $\Sigma$ ” symbol of the box disappeared, the statistics function is disable.

➤ **ON/OFF (Count switch)**

To disable or enable the count functions. If it's ON the “ $\Sigma$ ” symbol will shine, if it's OFF the symbol will dark.

➤ **ALARM(Prompt switch)**

To enable or disable the alarm prompt functions. If it's ON, the horn symbol on the left will light, if not it will disappear; the horn alert function is for horn inside the UP-48A Instrument: operation ok it will sound “Bi” once, and the “Good” indicator will light; operation wrong, it will sound “BiBi” twice, and the “Error” indicator will light.

➤ **RESET(Re-statistics)**

Clean up the “present count”, “present failure” and “time summation” value to zero

➤ **CONFIG(Count setting)**

The function is the same as the “Option” button in the Tools Bar. You can set the “Target count” and “Most failure” option

➤ **Total**

To count in total. It's to count all the right program times, including the batch mode and click “Program” times. If you want clean up the numbers to zero, please re-setup the UP-48A software.

## Chapter 6 Functions Instruction

● **Open file**

Click the “Open” button of Tools bar or “File” menu, then a standard open files dialog box will appear, just like you open files in Windows System. And file opened, another box will show as follows, there are followed options:



Fig. 2

✧ **File name**

To tell you the file name and its directory

✧ **File format mode**

Select the format of the file you want to open. It will finish automatically.

✧ **From file mode**

To only open the specified part of the file, there are 7 choices:

- All: default value, to open all the files
- First byte of 16-bit (8 bit): even bytes, match the 0, 2, 4, 6, ..... byte
- Second byte of 16-bit (8 bit): odd bytes, match the 1, 3, 5, 7, ..... byte
- First byte of 32-bit (8 bit): match the 0, 4, 8, 12, ..... byte
- Second byte of 32-bit (8 bit): match the 1, 5, 9, 13, ..... byte
- Third byte of 32-bit (8 bit): match the 2, 6, 10, 14, ..... byte
- Fourth byte of 32-bit (8 bit): match the 3, 7, 11, 15, ..... byte

✧ **To Buffer**

Upload the specified files of “From-file” to the venue of buffer. Choices same as the “From file mode” part.

✧ **From File address**

Specify the initial address for the sub-file loading from

✧ **To Buffer address**

Specify the initial address for the sub-file loading to buffer address

✧ **Buffer size**

Specify the files loading space to buffer

✧ **Clean Buffer before loading the file**

Before loading files to the buffer, you have followed choices to clean the buffer:

- Don't clean
- Clean it to 00
- Clean it to FF (default value)

● **SAVE FILE**

Click the “Save” button of Tools bar (or of “File” menu) to get a standard save files dialog box , just like you save files in Windows System. Input the specified file name, and press “Save” button to get followed options

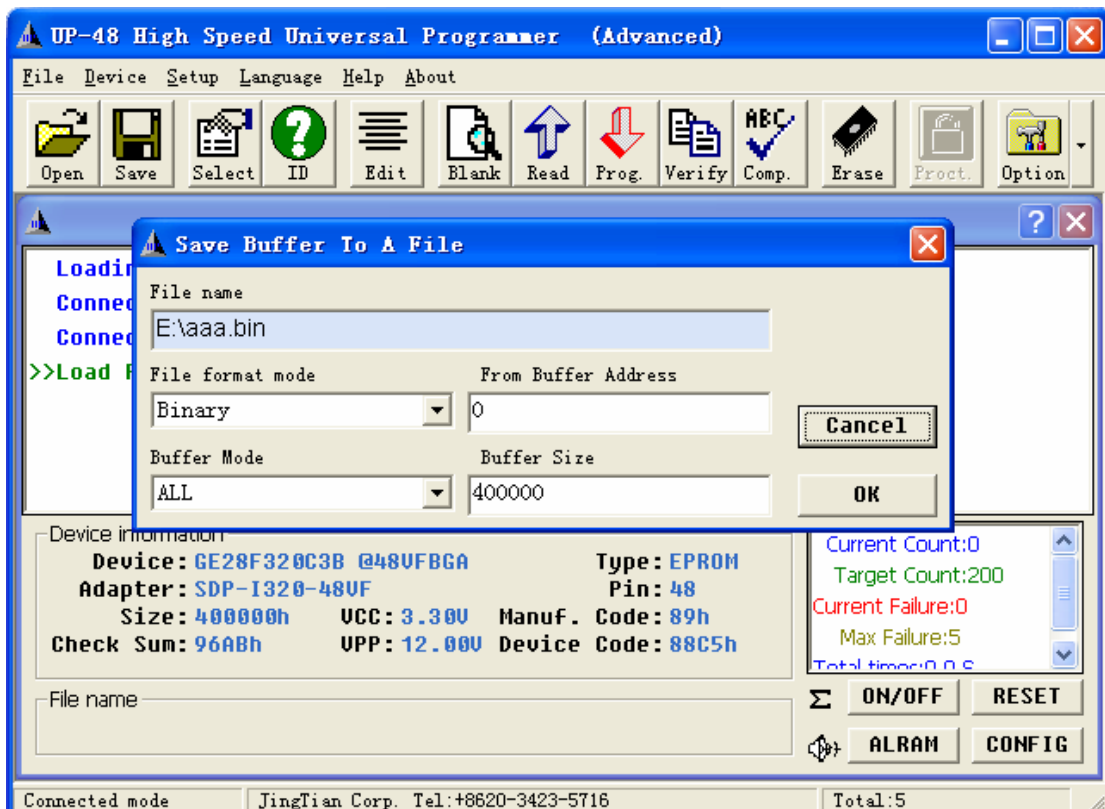


Fig. 3

- ✧ **File name**  
To tell you the file name and its directory
  - ✧ **File format mode**  
The default is binary format for saving files.
  - ✧ **Buffer mode**  
Just like the option of “From file”, you can save the data in buffer to file when you save files. There are 7 choices too, but it’s from Buffer to file, “From file” option is the opposite.
  - ✧ **From buffer address**  
Assign the initial address of buffer to save files
  - ✧ **Buffer size**  
Assign the space for buffer saving.
- **SELECT**  
Click the “Select” button of Tools bar (or of “Device/Select” menu) to get a window of five boxes as follows:

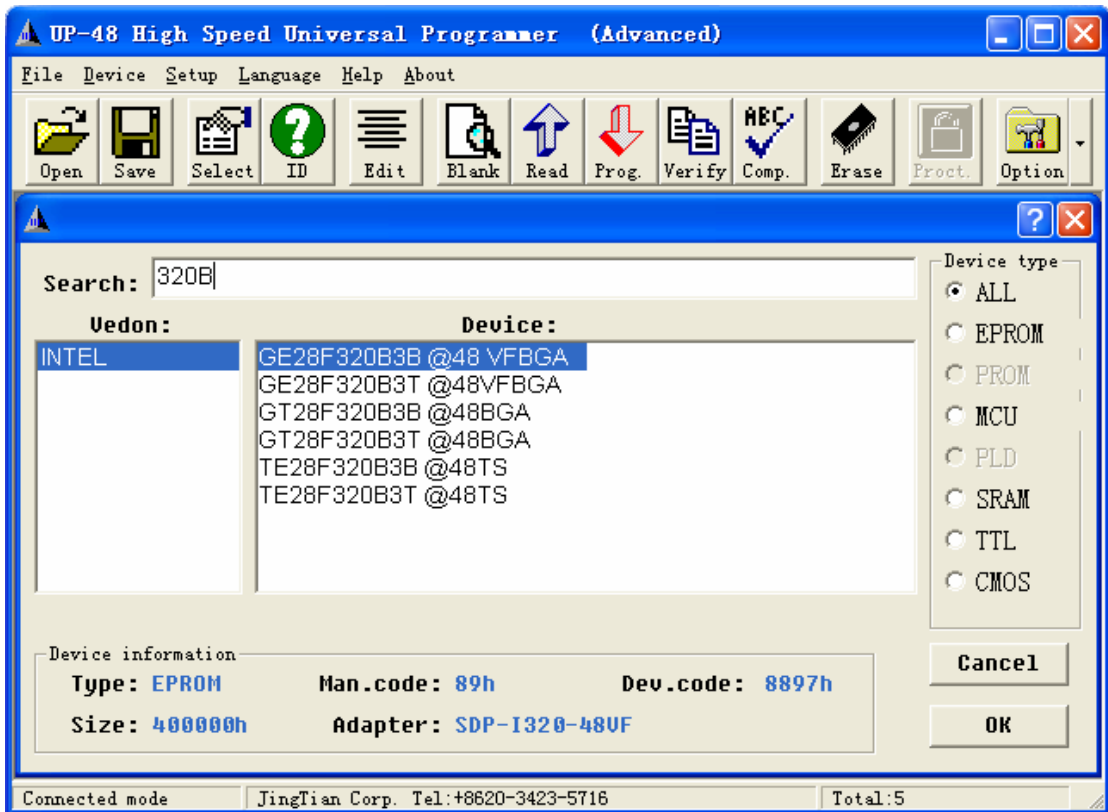


Fig. 4

- ✧ **Search**  
Input all or part of the chip’s name to quick-search it. The input letters/numbers must be sequent, for e.g. TE28F320B3B @48BGA, or 320, 20B3, TE28. If you input 32B or TE8F or 28320, it won’t run. The searching conditions must be accordant with “Search box” and “Device type”.
- ✧ **Vendo**  
Display all the supplier candidates. Click the correct name and the corresponding details of supplier, chip type and “Search box” will response automatically
- ✧ **Device**  
List candidates of device’s model. Click the correct model, the “Device information” box will response to display its details
- ✧ **Device information**

Display the information of chosen chip, such as capacity, supplier code to help user select the right device model

✧ **Device type**

In order to select and search device easily, it describes them into eight types:

- 1) ALL: all the chip
- 2) EPROM: rewriteable and erasable ROM, including FLASH, electronic EEPROM, serial SEEPRM, ultraviolet erasable EPROM
- 3) PROM: one-way program ROM
- 4) MCU: microcontroler
- 5) PLD: logistic chip
- 6) SRAM: test SRAM devices
- 7) TTL: test TTL devices
- 8) COMS: test COMS devices

After you confirm the model, just double click it or click “OK” button to finish select and search.

● **ID (Tools bar)**

Press the “ID” button of Tools bar to check if the device’s ID is correct. If the device’s ID is error, it will display a window as follows:

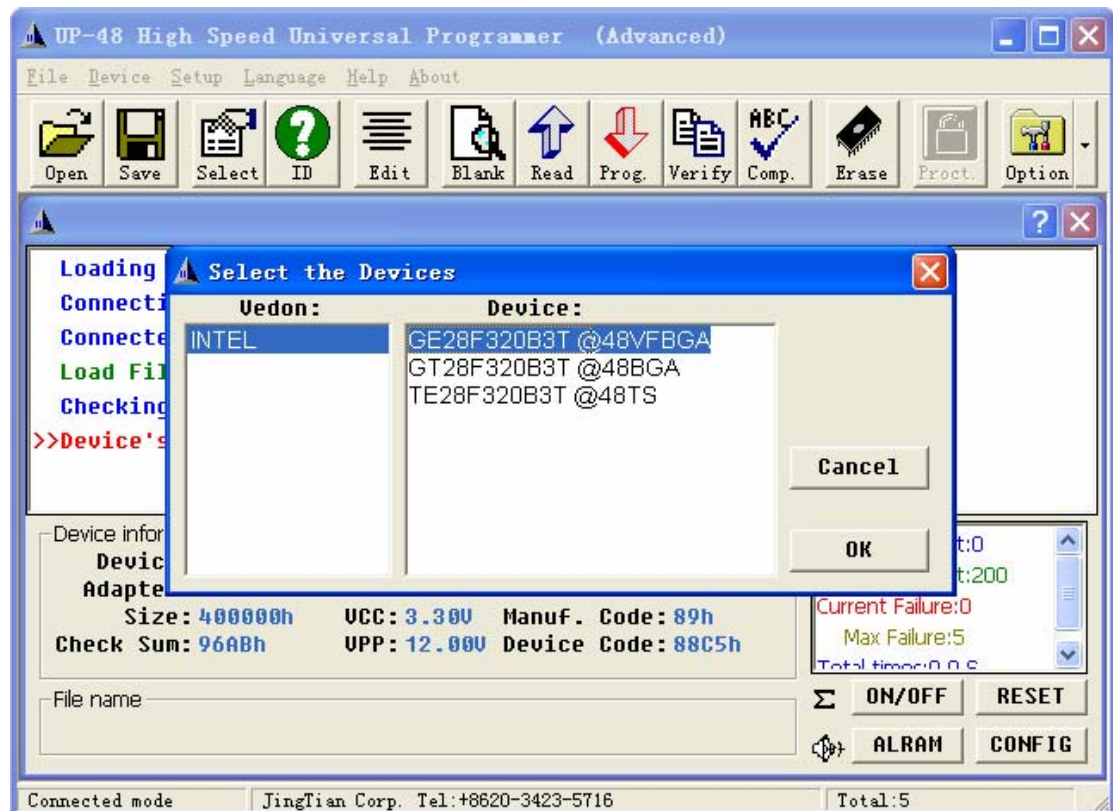


Fig. 5

● **Auto select device (Menu)**

Press “Device/Auto select device” menu, it will choose out the correct device by its ID, connection pins, pins feature etc. This step is useful only to chip with ID. To those EPROM, it may occur high voltage to some pins (A9), please pay attention.

● **EDIT**

Press “Edit” button to get an edition window, and it is divided into 6 parts

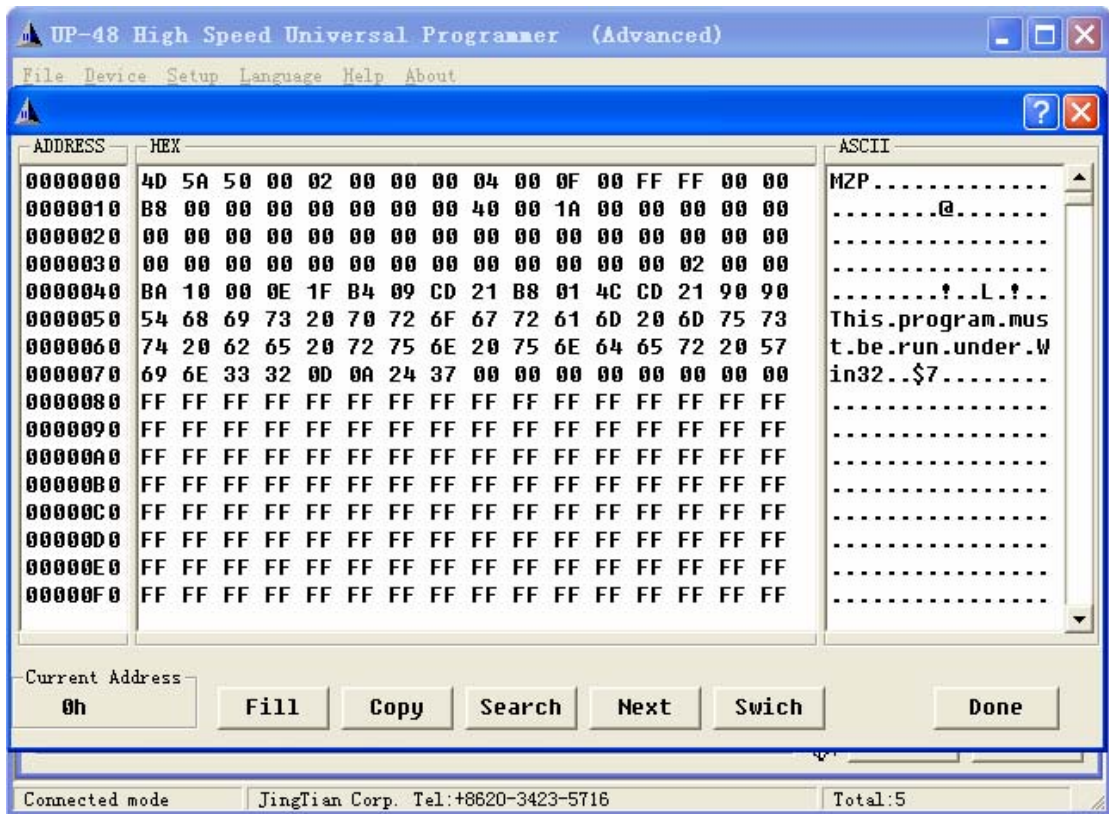


Fig. 6

✧ **Address**

Show the address details. Each line matches the start point of “Hexadecimal column”. The second venue of first line is fixed as “00”. Click the first line to input directly.

✧ **Hex**

Display the data of buffer in hexadecimal digit, and it can be changed by keyboard with 0-9 and A-F.

✧ **ASCII**

Display the data of buffer in characters, and they match the hexadecimal digits one by one. The non-character digit represents as “.” and it can’t be changed directly, when you modify the hexadecimal digit they will auto-change correspondingly.

✧ **Scroll bar**

Pull the scroll bar or click the scroll arrows up or down, you can make page up or down quickly.

✧ **Current address**

Display the current address of buffer. When you click “Hexadecimal box” there will display the current address of buffer in the “Current address” box.

✧ **Function buttons**

- 1) Fill: fill specified data to assigned address in buffer
- 2) Copy: copy specified data of assigned address to assigned address in buffer
- 3) Search: search the specified data in buffer
- 4) Next: search on the specified data accordance with upper conditions
- 5) Switch: change the arrangement sequence of data. For e.g. the original order is 00,01,02,03, and it can be changed by binary into 01,00,03,02.
- 6) Done: finish the display or modification to buffer and close the window

● **Device operation**

Operation on devices followed by: check Blank, Read, Program, Verify, Compare, Erase and Protect. If you just operate these functions separately, you can press the corresponding button

or sub-menu of “Device” menu. The programmer will auto-check before each function according to “Insertion check” and “ID check” options, and we suggest you to follow this step to ensure security. Insertion check as follows:

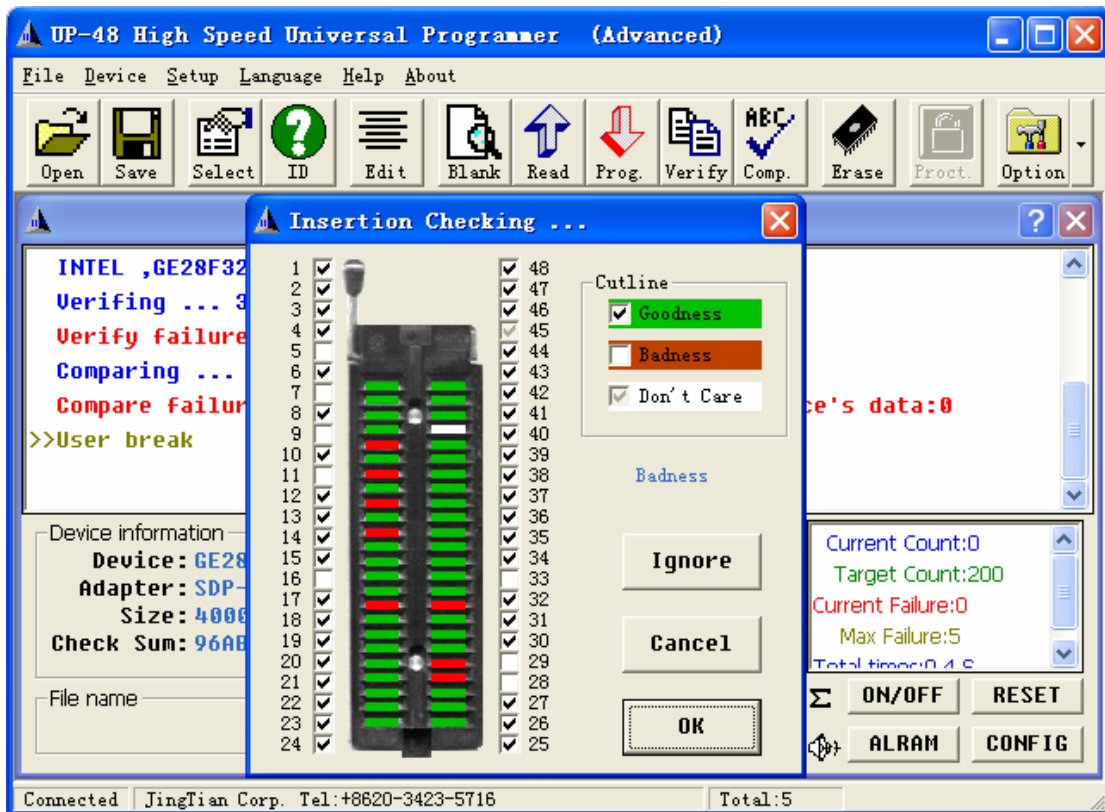


Fig. 7

✧ **Check Blank**

Check if the chip is in blank mode. In this mode all data are FF.

Click “Blank” button of Tools bar or “Blank” button of “Device” menu, it will start the operation

✧ **Read**

Read the data of device into the buffer

✧ **Program**

Including Check Blank, Erase, Program, Verify and Protect steps, they will auto-run. You can choose any by “Option” menu

✧ **Compare**

Compare one by one the data between device and buffer. Compare is different from Verify: Verify process will auto-stop when it find any un-matched data, but Compare won't auto-stop whenever there is any un-matched data found, unless it run to end or user stop it. The process just like is as follows:

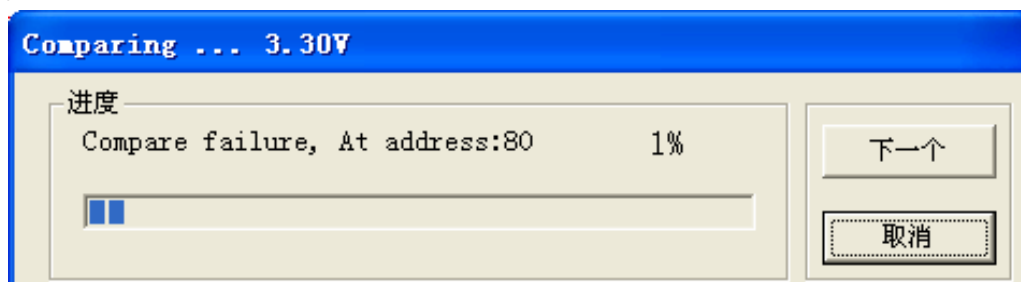


Fig. 8

✧ **Erase**

Clean up the chip data to Blank status. Only the FLASH, EPROM, EEPROM, part of MCU, part of PLD can be erased. If it's PROM, OTP MCU, the “Erase” button can't be used and

then button is unavailable.

✧ **Protect**

After Protect, write or read operation can't be done. If the device you selected can not be Protect, this button is unavailable.

● **Option**

Display and modify operation options, including programming voltage information , Verify option ect. Click "Option" button to go into, as follows. We suggest you do modification after you studied carefully.

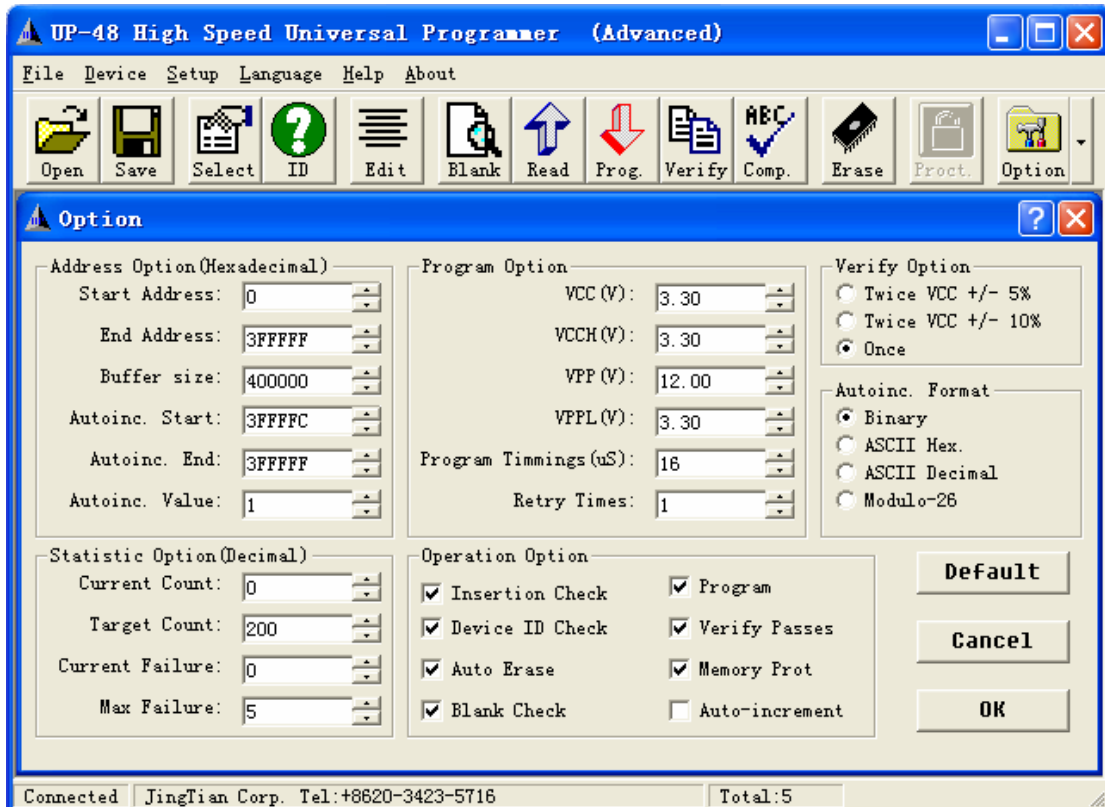


Fig. 9

Instructions to each option

✧ **Address option (hexadecimal)**

➤ **Start address**

The start address of check Blank, Read, Program, Verify and Compare operations to device.

➤ **End address**

The end address of check Blank, Read, Program, Verify and Compare operations to device.

➤ **Buffer size**

Buffer size is the same as chip capacity usually.

➤ **Autoinc. start**

Start address of automatic serial number. It's often less 16 bytes than device end address.

➤ **Autoinc. end**

End address of automatic serial number. It's often the device end address too.

➤ **Autoinc. value**

Increased value each time of automatic serial number. Its effective range is from 1-1000 (hexadecimal digit), and usually it's 1.

✧ **Statistic options (decimal)**

➤ **Current Count**

Set the current count, and it can't overcome the Target count.

➤ **Target Count**

Set the Target Count; the mass program will auto-stop when count to the Target count, and its range: from 0-100000.

➤ **Current Failure**

Set current failure, and it can't overcome the max failure

➤ **Max Failure**

Set the Maximal failure. When current Failure overcomes the Max Failure, mass program will auto-stop.

✧ **Program options**

➤ **VCC(V)**

Set the device VCC voltage, from 0.00V~8.00V. VCC voltage can't exceed VCCH, VPP and VPPL. VCC is the power voltage. If the program can't be succeed in some devices (such as old or bad quality chips), you can adjust the voltage properly. For e.g. to 105% VCC, it's in the floating limits of VCC voltage.

➤ **VCCH(V)**

Set the device VCCH voltage, from 0.00V~8.00V. VCCH voltage can't exceed VPP and VPPL, and can't be less than VCC. Some chips (such as ST27C322) voltage will increase in programming, so we describe it as VCCH.

➤ **VPP(V)**

Set the device VPP voltage, from 0.00V~25.00V. VPP voltage can't be less than VPPL, VCC and VCCH, and it works in high-speed program mode. If the program can't be succeed in some devices (such as old or bad quality chips), you can adjust the voltage properly. For e.g. to 105% VPP, it's in the floating limits of VPP voltage.

➤ **VPPL(V)**

Set the device VPPL voltage, from 0.00V~25.00V. VPPL voltage can't exceed VPP, and must exceed VCC and VCCH. It works in Verify.

➤ **Program timings (uS)**

Set the impulse width of device program. Measurement unit is uS, and its range is 0-10000 uS. Every device has its typical impulse width, but if the chip is worn or of other seasons, it may need a little wider impulse. Short impulse can shorten the programming time. Program timings is works for EEPROM.

➤ **Retry times**

Set the retry times when program may fail. When the program failed, it will auto-retry according the set times to improve the program efficiency.

✧ **Operation options**

➤ **Insertion Check**

It will check the connection status of device during operation. We suggest you click this option. If there is any bad connection of any device pin, mistake will occur during the program, especially it may damage for PROM and OTP devices.

➤ **Device ID Check**

If check the chip ID during operation, we suggest you click it to prevent from choosing wrong model.

➤ **Auto Erase**

If auto-erase the chip before program. To old chip we suggest you click it, to new chip we suggest to waive this option to save time. To PROM and OTP chip, forgive this option means not to erase.

➤ **Blank Check**

This option is to check if the chip is Blank before program. To new chip we suggest you don't click it to save time, to old chip we suggest to click it.

➤ **Program**

If do Program on chips. When you run "Batch mode" which can check chips in batch, you needn't click this option.

➤ **Verify Passes**

Auto Verify passes after programming on chips to ensure the data are the same both in chip and in buffer. We suggest click it.

➤ **Memory Protection**

If protect on chips after programming and verifying.

➤ **Auto increment(serial number)**

If the serial number is available. We get the number by inputting specified digit in specified address (usually it is the end address of buffer). The function is open, after operating it will auto increase the serial number in sequence.

✧ **Verify options**

➤ **Twice VCC +/- 5%**

Verify Twice. First verify under 95% VCC (power voltage), the second time verify under 105% VCC (power voltage).

➤ **Twice VCC +/- 10%**

Verify Twice. First Verify under 90% VCC(power voltage), the second time verify under 110% VCC (power voltage). Before run this option, please test if the device can work under VCC +/- 10% voltage floating. If not please select the 5 +/-% option or "Once" time fixed VCC option

➤ **Once**

Verify only one time, and the VCC voltage is stable.

✧ **Autoinc. format (Serial number format)**

➤ **Binary**

Serial numbers represent in Binary number (0-FF).

➤ **ASCII Hex.**

Serial numbers represent in Hexadecimal number (0-F).

➤ **ASCII Decimal**

Serial numbers represent in Decimal number (0-9).

➤ **Modulo-26**

Serial numbers represent in Modulo-26 letter (A-Z).

## Chapter 7 Mass Mode

- Mass production needs the programmer can Auto-run, speediness and easy-to-operate. UP-48A applies intelligent sense tech, can auto judge the chip in or out, auto run mass program by pre-set statistic parameters.
- Start mass mode, you should select "Mass mode" sub-menu of "Device" menu to get one "Option" dialog box. It's the same as to click "Option" button of Tools bar to show the box, it just warn you to set a serial of relevant options. Press "OK" button of "Option" window to get one "Insertion checking..." window as Fig. 7. Now you can fix the device into the socket and UP-48A. It will auto operate by pre-set options. When operation is finished, it will prompt to "Remove device ..." and go on with another device.
- If there is any wrong operation on the chip, such as can't Erase, except the window will display the error information, the "ERROR" indicator of UP-48A Instrument will light and the buzzer inside it will warn "BiBi" twice. If your operation is correct, the "GOOD"

indicator will light and the buzzer inside it will “Bi” once (the buzzer sound switch must be ON).

- When “Current count” is large than “Target count” or “Current Failure” is large than “Max Failure”, mass program mode will be stop.

## Chapter 8            How to fix chip into socket

- No.1 pin of DIP packed chip is upside, align it and insert into socket. Some devices need adaptor, you just set them according to the instruction, and usually the front is upside.
- UP-48A has the auto-check connection function, if you fix any device improper in the socket, no connectivity can be checked. So it’s easy to set and fix device in.
- We use intelligent sense tech in UP-48A Instrument, and it can work with little electronic signal and special bus circuit in checking connection, judging the device in or out. If you don’t operate on bad connected device, it won’t damage for any chip.

## Chapter 9            Update software and Technical support

- UP-48A adapts the new tech of “soft” hardware configuration, you can just update your Instrument software to support new devices.
- Homepage: [HTTP://WWW.UP48.COM](http://WWW.UP48.COM), free software for updating
- Tech support: [SUPPORT@UP48.COM](mailto:SUPPORT@UP48.COM)
- Customer can apply for support to special chip
- If we update our software for better operation and improve its functions, we needn’t inform our customers specially. And it will hardly change its interfaces.

## Chapter 10            Maintenance & Guaranty

- **Guaranty range**
  - ✧ UP-48A Instrument (DIP48A Socket, USB flex, power wire and attached CD are not included)
  - ✧ Other problems or damages not caused by man
- **Guaranty period**

Free charge for maintenance in one year, from the buying date. Over one year, we can support your UP-48A with cost price to maintain.
- **Customer Card**

In order to give you better service, please fill the card and we suggest you do it on our website.

Name		Telephone	
Fax		E-Mail	
Company			
Address			
Zip code		Retailor	
Retailor Tel		Sale Date	
Product Model	UP48A	Serial No. (in “about” menu)	
Your evaluation and advice to our product			