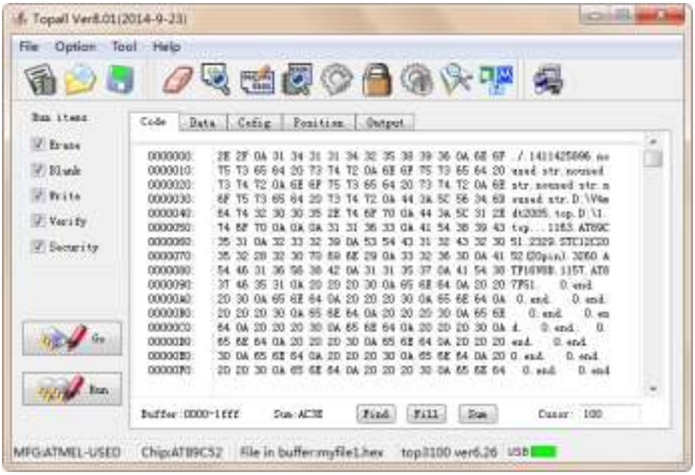
Topall
Version 8.x
Universal programmer
Software User's manual
For windows



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Directory

Chapter 1 Install Topall

1.1 Setup

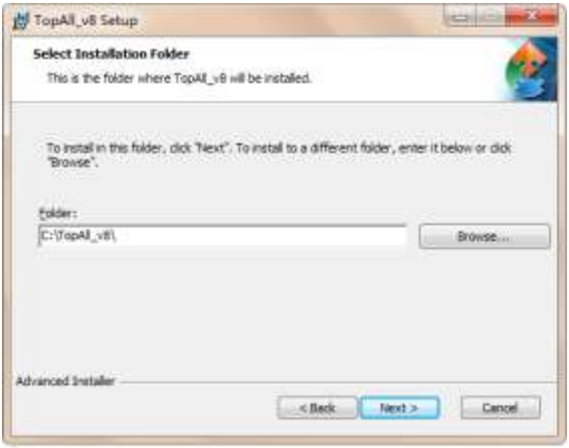
For system:
Windows10/Windows8/ Windows7/Vista/XP
X64 or X86
For TOP programmer firmware >=5.00,(TOP2008 limited on XP)
Require hard disk space: 50M

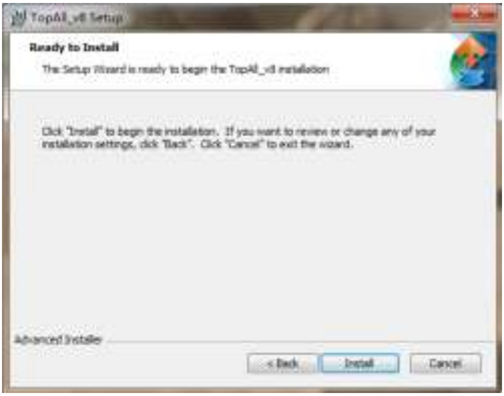
(1) Prearrangement

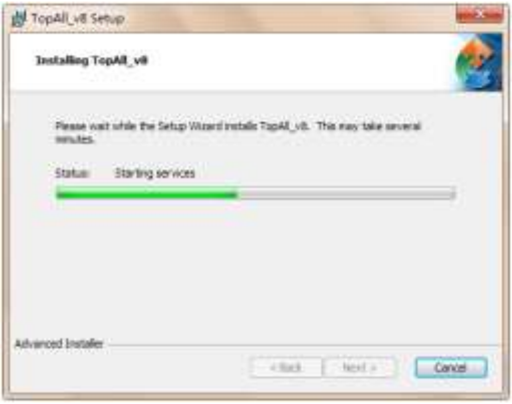
- Start computer with 'Administrator';
- Connect programmer with the cable;
- Prohibition of antivirus software;

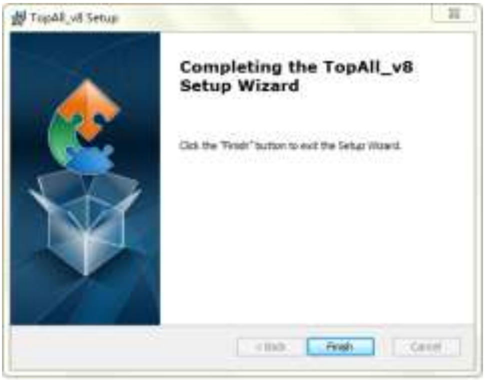
(2) Run Setup.exe;


TopAll_v8 Setup
Welcome to the TopAll_v8 Setup Wizard
The Setup Wizard will install TopAll_v8 on your computer. Click "Next" to continue or "Cancel" to exit the Setup Wizard.
< Back
Next >
Cancel

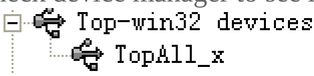

TopAll_v8 Setup
Select Installation Folder
This is the folder where TopAll_v8 will be installed.
To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse".
Folder:
C:\TopAll_v8\
Browse...
Advanced Installer
< Back
Next >
Cancel


TopAll_v8 Setup
Ready to Install
The Setup Wizard is ready to begin the TopAll_v8 installation
Click "Install" to begin the installation. If you want to review or change any of your installation settings, click "Back". Click "Cancel" to exit the wizard.
Advanced Installer
< Back
Install
Cancel

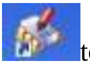

TopAll_v8 Setup
Installing TopAll_v8
Please wait while the Setup Wizard installs TopAll_v8. This may take several minutes.
Status: Starting services
Advanced Installer
< Back
Next >
Cancel



Check device manager to see if the USB driver is installed correctly.



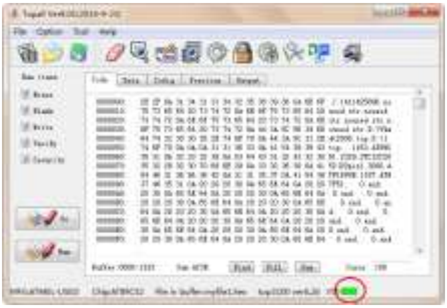
If no this line,you had to restart computer with “Prohibition of digital signature” and then setup topall again.Plese see windows system help for how to do “Prohibition of digital signature”.

(3) Click the desktop icon  to run Topall:

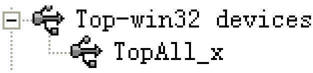
If the first run Topall,may be a dialog comes as:

Chose Reload USB driver to continue.

Run Topall again,it shows as:

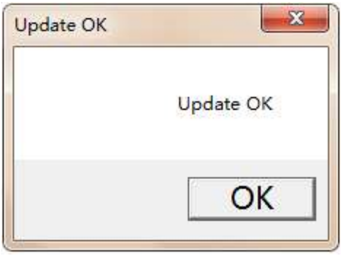


The installation is complete, (do not disconnect the programmer) device manager can be found in：



1.2 Uptate Topall

Start from menu [Help] or toolbar:

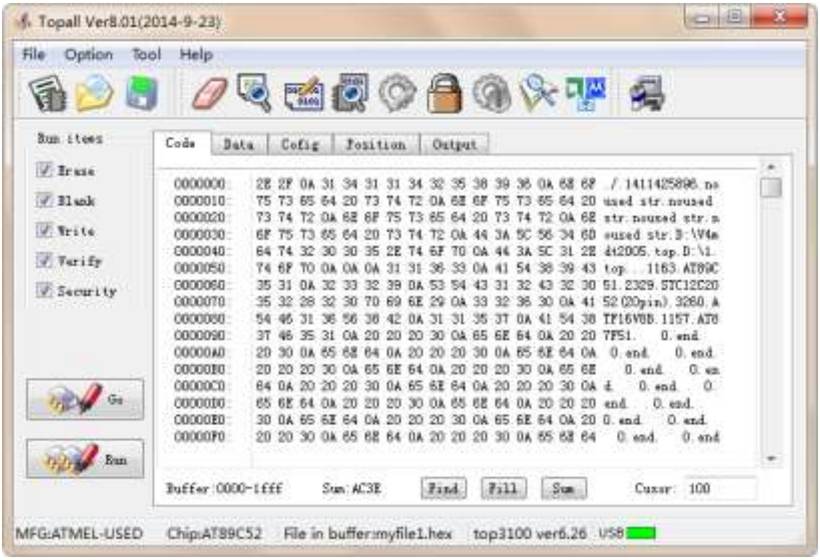


1.3 About Software

Topall Software Performance

- Support Model : TOP2011/2013/3000/3100/3200;
- For Windows64/32bit;
- Support English language.

The main form:

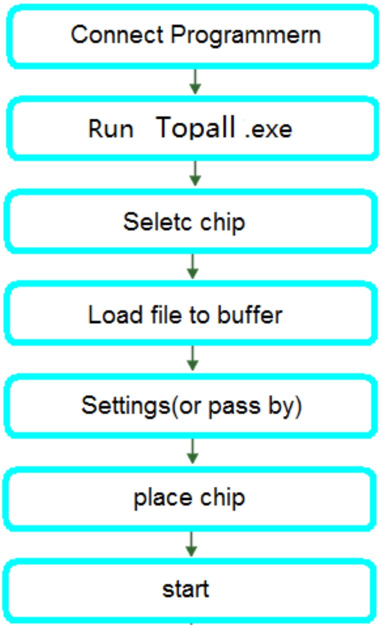


Chapter 2 Quick start

2.1 Workflow

If you already install Topall in you computer and the USB driver works well(Green LED Lighting),you can quickly start now.

Workflow as: Connect your Top Model to computer-USB->Run Topall->Seletct chip->Load file to buffer->Setting(or pass by)->place chip->start.



2.2. Procedure:

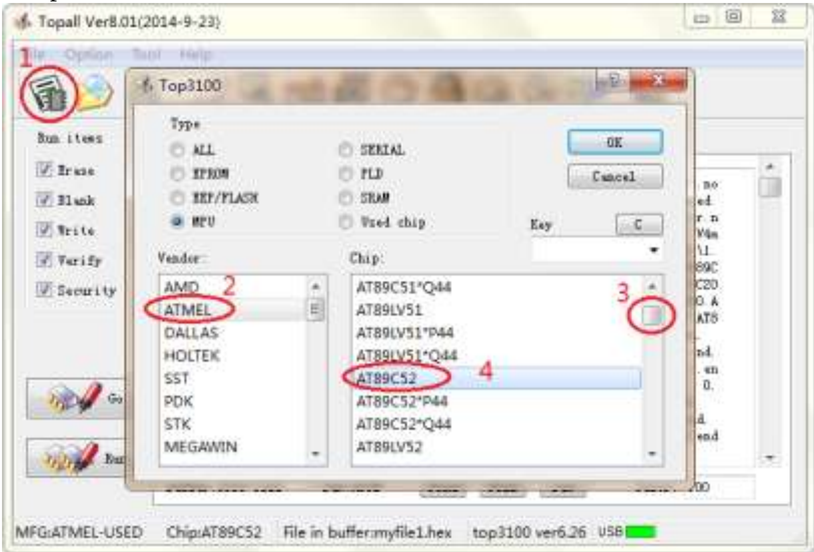
Connect programmer and the red LED light;

Run Topall.exe and the green LED light;

2.1 Click [List] in tool-box

First select chip such as [MPU] on “select device”radio box;

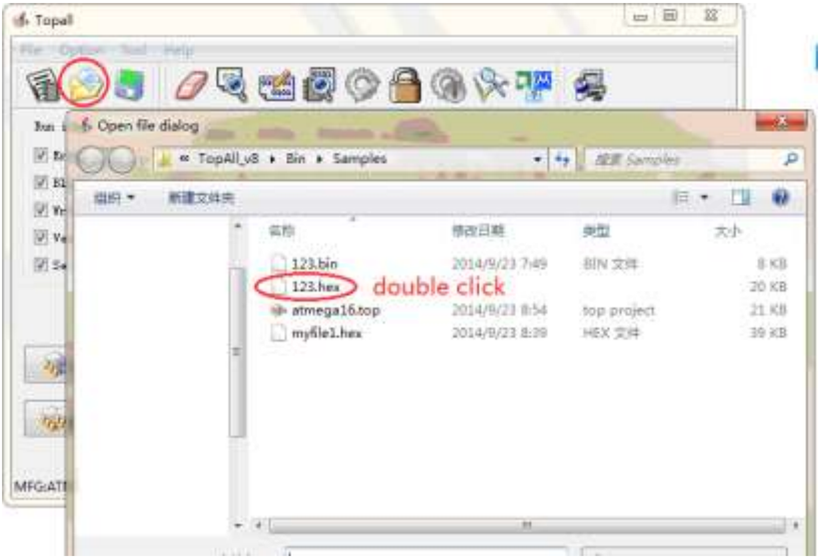
Then select Manufacturer on left list box such as[ATMEL];and select chip on mid list box such as [AT89C52]。

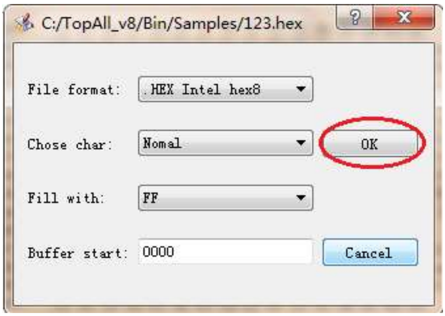


2.2.1 Click tool box of open dialog，Select file as[123.hex]，and click [OK]，popup a choosing dialog and don’t change anything but click [OK].

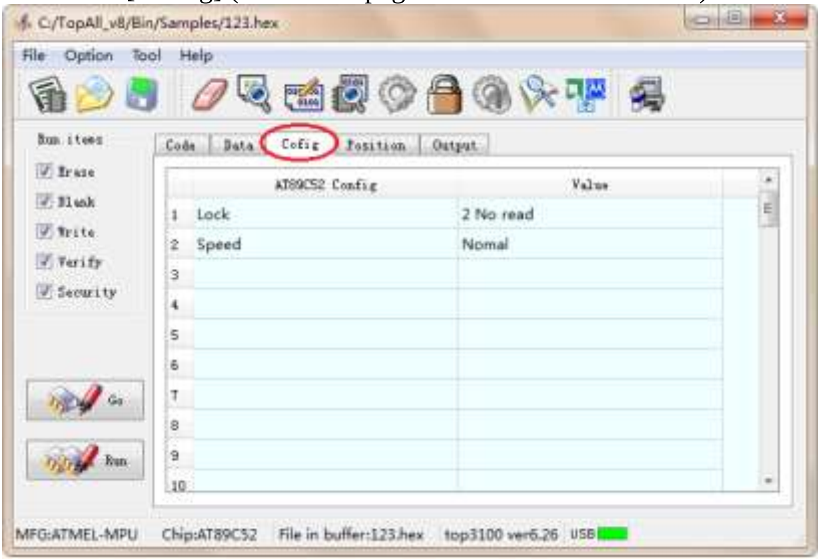
TOP Programmer support several file format.The normally are

Binary (.BIN) and Hex(.HEX).For more information refer to chapter III of file format details.





2.2.3Click [Config] (the second page of card on left-bottom).



In this case the choice is AT89c52, The configuration is very simple and does not need to change.

Note: Some microcontrollers have complex configuration, such as PICxxxx's config; Atmega's fuls.

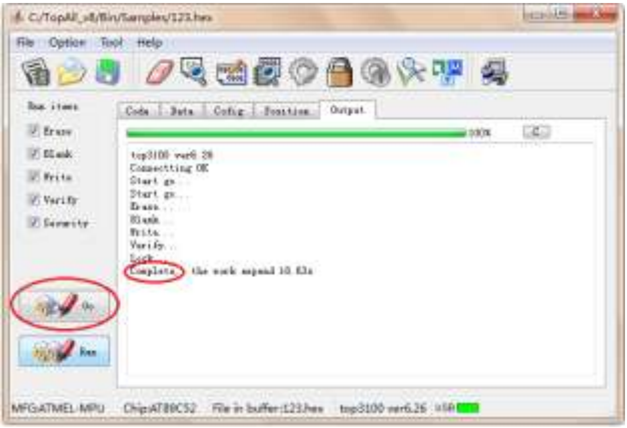
Often leads to wrong configuration program does not work correctly.

Configuration details refer to Chapter [5.1.10] and [5.1.11 write configuration read configuration].

2.2.4 Clicking on the left, select the page 3 of card [Position], according to the displayed location map placed on the chip to the

locking socket.
Picture left circle indicates locking wrench. Note that the position and orientation of the chip.

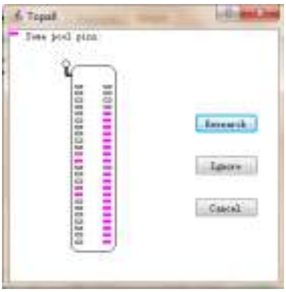
2.2.5 Press the [Go]. A progress bar indicates the implementation process, depending on the device capacity, some time in a few seconds to tens of seconds. the work is successfully completed, the output window should show



the output window should show ‘Complete’.

2.2.6 Detection poor contact socket

If poor contact pin socket with the chip, the software will automatically detect poor contact pin, and the red mark is displayed. The following figure shows the bad pins.



CHAPTER 3 User Files

3.1 File Format

Top programmer supports most popular file formats, such as Hex, Bin and so on. Not only that, it also supports some special file formats.

3.1.1 Project Files

'.top'is Topall software requirements of the project file. The project file contains the following:

Buffer code and data;

User Configuration

Selected chip

settings, such as incremental amount of code, date, etc.;

Project files suitable for long-term fixed-burning products, because all the necessary information saved, even non-professional writer, but also to ensure correct.

Project files compatible with all versions of Topall software (Topall5/6/7), but not universal file, other companies programmer is not compatible.

3.1.2 Common File

Programmer widely used file formats are three kinds:

. BIN binary files. Memory generally use this format. All documents can be displayed in binary file is opened.

. HEX Intel hex file. Most microcontrollers use this format.

. JED fuse file. GAL logic device special files.

These three kinds of file formats, different manufacturers programmer can support, so called universal.

3.1.3 Special Files

Some company provides its own proprietary format, generally can not be universal.

*.S format, Motorola's exclusive;

*.CDS, Taiwan Elan dedicated

*.SN8, Taiwan Sonix company-specific

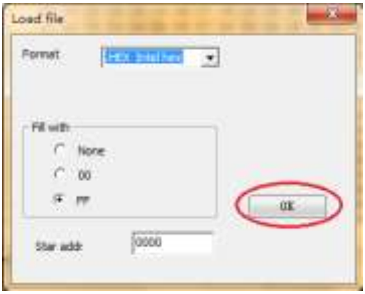
*.OTP, Hotek company-specific

Topall software will identify the format based on the file extension, you do not need to select the setting. Users also do not arbitrarily modify the file suffix, to avoid the wrong format.

3.2 Open code file

Select the menu "File / Open File", corresponding tool icon. For display in the buffer open saved files, file window pops up after the execution:

Choose their file name, if it is a binary / hexadecimal these two documents, another will pop up a dialog box:



[File Type] automatically recognize the file format, no need to change.

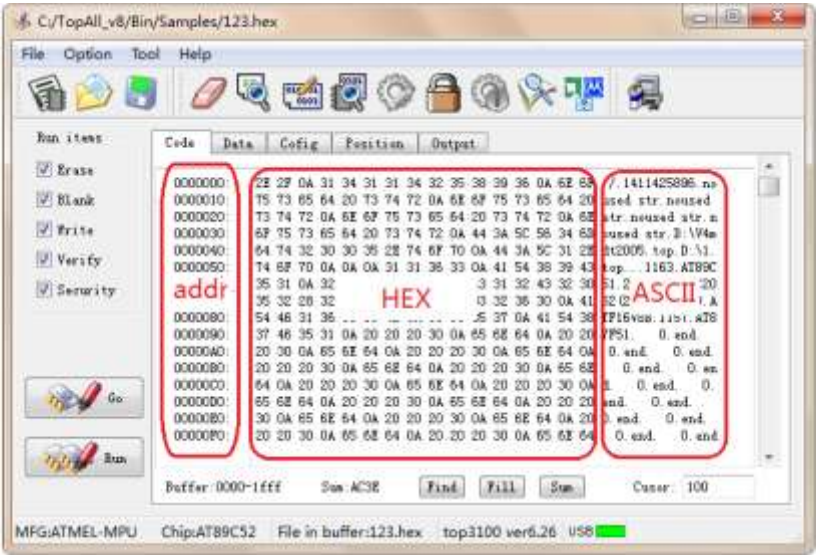
[bytes] select memory write 27,28,29 series, the user may use two 8 spliced into 16 devices use the same file to 2 times, write, write an even byte selection, and then select the odd byte write a.

[pre-filled], if the filling is 00, the buffer airspace are 00, then the airspace are filled with FF FF. If the original data is loaded, you should choose "to retain the original data."

[Buffer Start Address (0000)] If the user has only one file, generally do not need to modify the buffer start address. The default address beginning from 0000.

Click [OK], the file that is loaded into the buffer as required.

Displayed as follows:

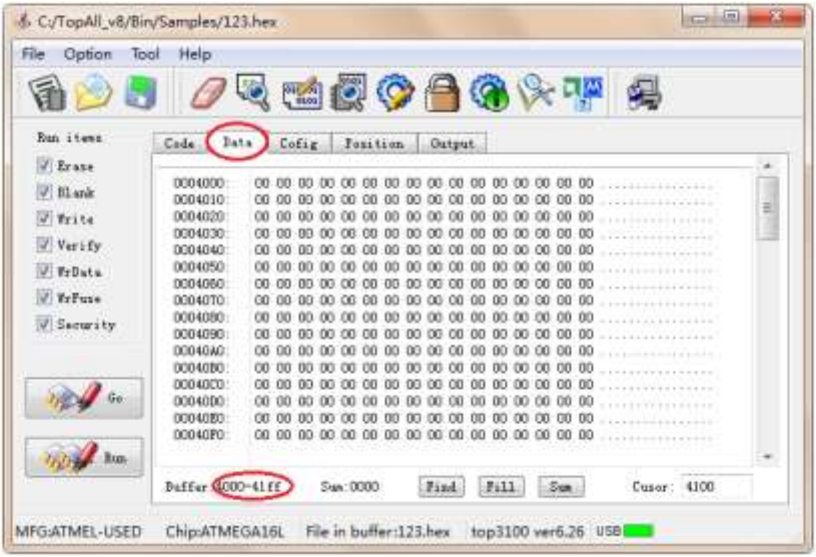


3.3 Open data file

Some microcontrollers such as PIC12f629, sst89c58, at90s8515 ... etc., in addition to written procedures, you may also write data. Program from the 0000 address to write data written to the address specified by the chip. (By the buffer window to the right directions ("Data from xxxx to xxxx")). Only chip has a data segment storage space, the buffer storage location will be open. In general there is no data memory chip (such as at89c51), so no data is displayed button.

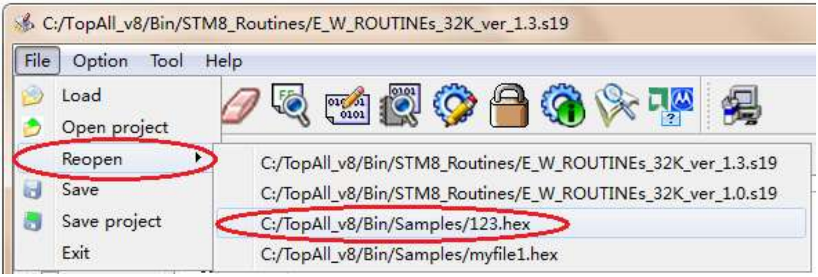
Some microcontroller has a data segment,the user needs to have two files, a code file, and a data file. This would open the file twice, put different buffer zone.

Click [Data]-page,then click open data file to buffer:

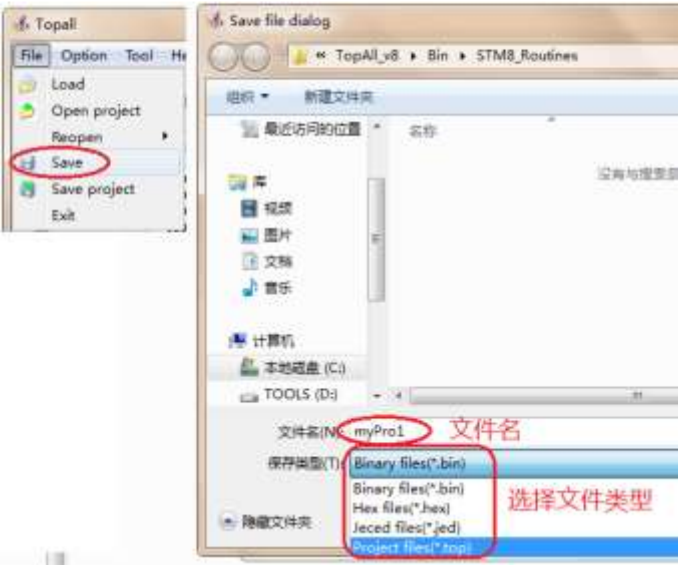


3.4 Open recent documents

Choose the file you want and load it to the buffer.



3.5 Save File



If you pre-enter the file extension (.top / jed / hex / bin), it will not pop up a small dialog box. The software will automatically determine the file type.

If you choose to. Hex or. Bin format saves only the contents of the buffer does not contain configuration and settings. If you choose to. Top project file, save all the settings intact.

To save your GAL logic device, the file name must be pre-suffix. Jed.

File type for more details consult chapter 3.1.

3.6 Open the project file (.top)

Project files suitable for long-term fixed-burning products, because all the necessary information saved, even non-professional writer, but also to ensure correct.

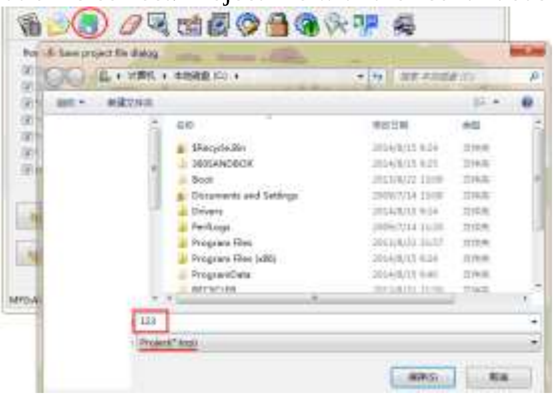
Project files compatible with all versions of Topall software (Topall5/6/7).

Project file has the extension *.top.

The figure selected project file ATMEGA16L.top, click "Open", the project file is loaded into Topall in. See page buffer and cards, you can see all of the necessary data recovery.
. top project file with the operating system of "associate" in the Topall.exe not running before you can use the mouse to double click. top file, the computer will automatically open Topall software.
File type for more details consult chapter 3.1.

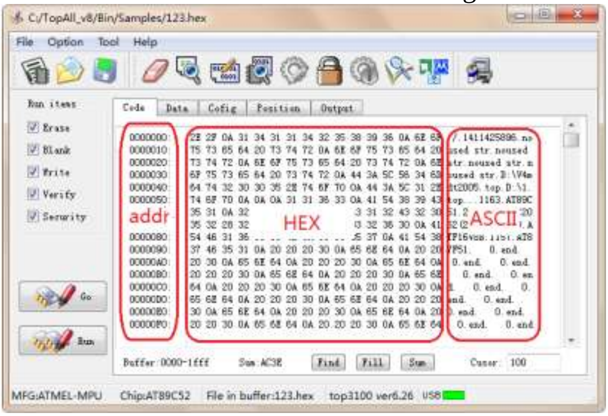
3.7 Save project to file (.top)

Burn After successful test machine, all the content can be saved as a project file, the next time you do not need to re-write and then burn settings, and directly open the project file, press the [Start] on it.
The project file contains four types of information: file buffer, device configuration, settings, models.
Project file most suitable for the production stages, you can ensure that the configuration is correct. Project file with the "continuous" Burn best.



Chapter 4 Buffer

Buffer is used to store code and data. The following window:



Mouse click display area, the character cursor flashes to indicate that the buffer is activated, you can modify its contents. Activation buffer, you can use keyboard controls:

to move the cursor up and down;

PgUp turned up one (256 bytes);

PgDn turned down a (256 bytes);

Click the [Code 0000] button to display the Code starting position;

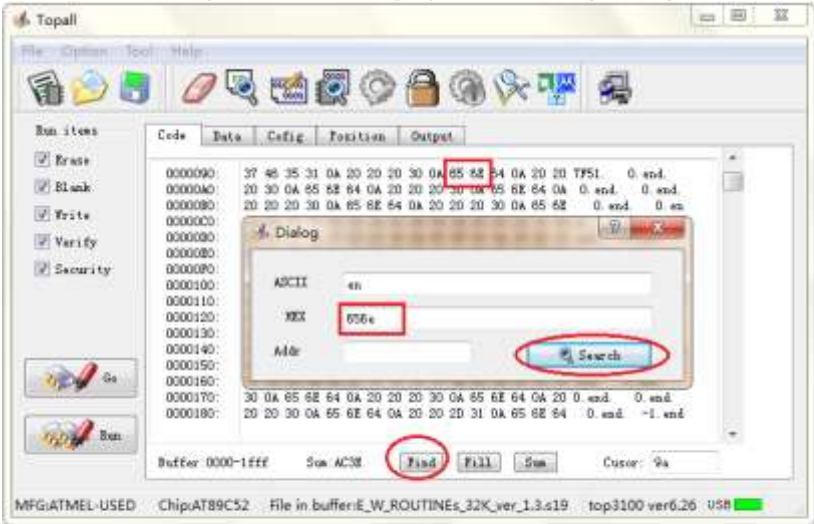
Click the [Data nnnn] button to display the data starting position;

Move the slider to view any address buffer code and data.

Type the characters directly from the keyboard, you can modify the data at the cursor position. Hexadecimal and ASCII display area Display area can be modified. Modify a zone, the software will show another area.

4.1 Search

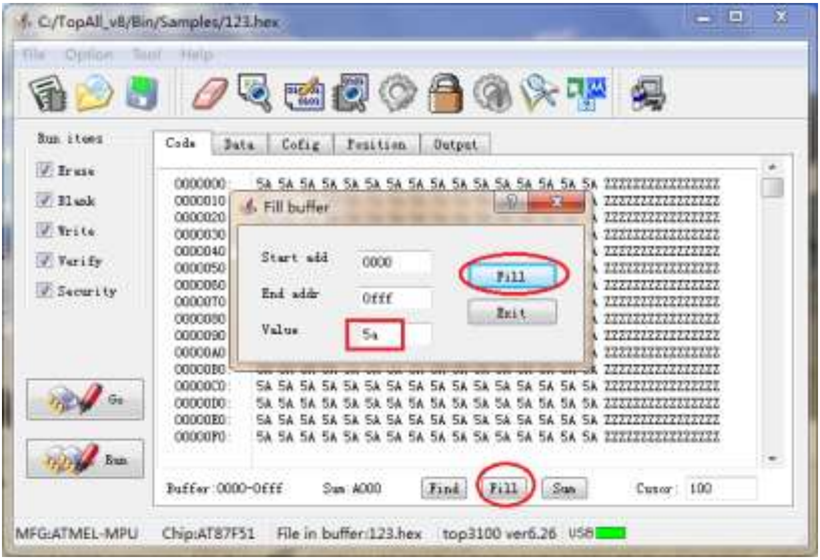
This operation is used in the buffer for the specified data. Select the menu "Edit Modify / search" to display the following dialog box.



Enter the code or the corresponding ASCL two hexadecimal characters (case insensitive). Click "Find" to start looking. Can continue to point "search" to find the next one and the same character.

4.2 Fill buffer

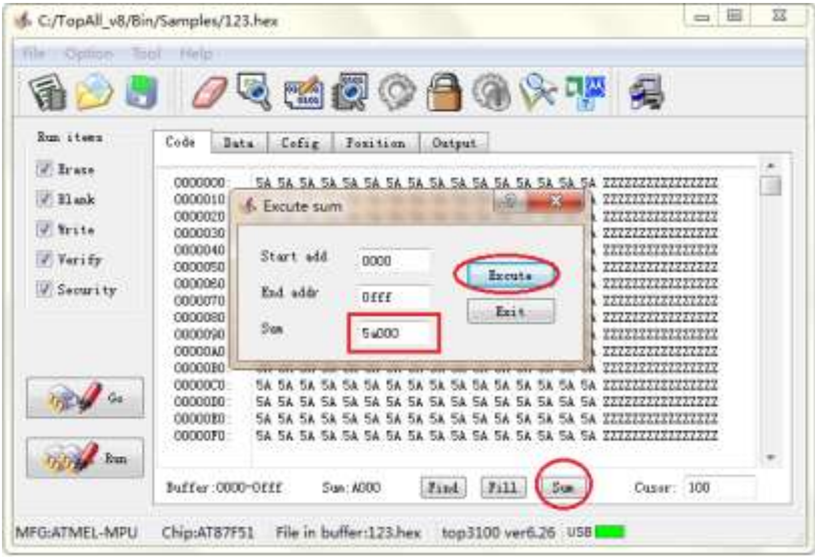
This operation can be part of the buffer unit filled with the required data.Select the menu "Edit / Fill Data" dialog box is displayed:



Enter the starting address and ending address, enter the fill value. Click "OK." Fill in the buffer to see the value of the specified address.

4.3 Check sum

Select "Change / check " pop-up dialog:

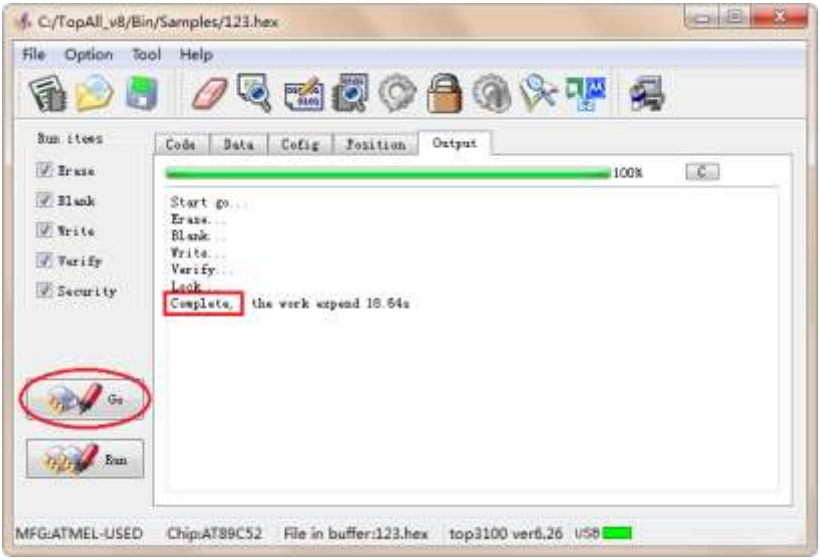


Checks and enter the start and end addresses, click on "Calculate " in the check box, and you can see the checksum.

Chapter 5 Command

5.1.1 [Go]

Combined operation starts, press [Start], the program in accordance with the combination of cards left page lists the commands executed one by one in sequence. For example atmega16L microcontroller, combined list shows the seven orders, "erase, blank check, write program code, proofreading, write data, write melting wire configuration, encryption protection", as shown below:



Users can, for the option to choose. Mouse click on one option to remove the corresponding hook, you can ignore this command.

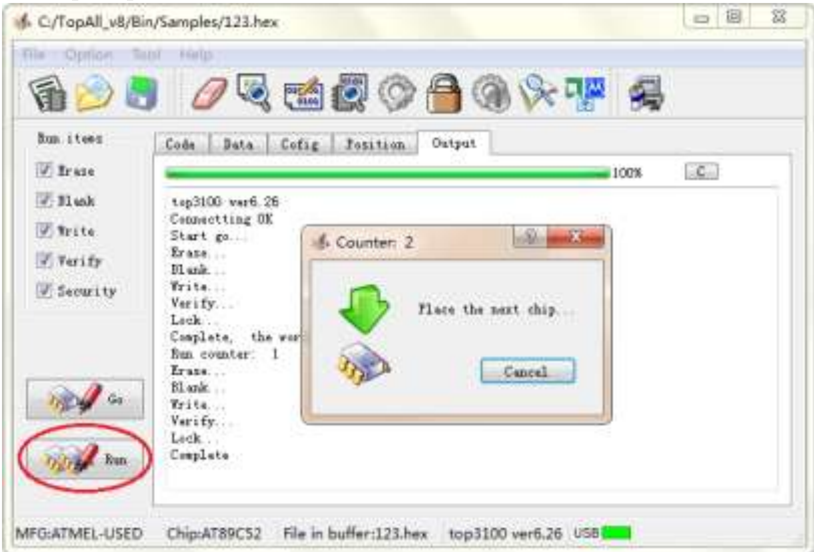
Upon successful completion, the output window should show "normal end ...."

Combined operation of the process, any one order wrong, its operation incurs interrupted. Output window will prompt an error message that the operation fails.

5.1.2 [Run]

[Run] and [Start] Burn is a combination of the same operation, use the same combination and sequence of operation options. The difference is that the [Start] only recorded once, two [consecutive] can one take a lot of burning, and not need to click a mouse, you can just follow the prompts to replace the chip.

Click [Run] Show as follow:



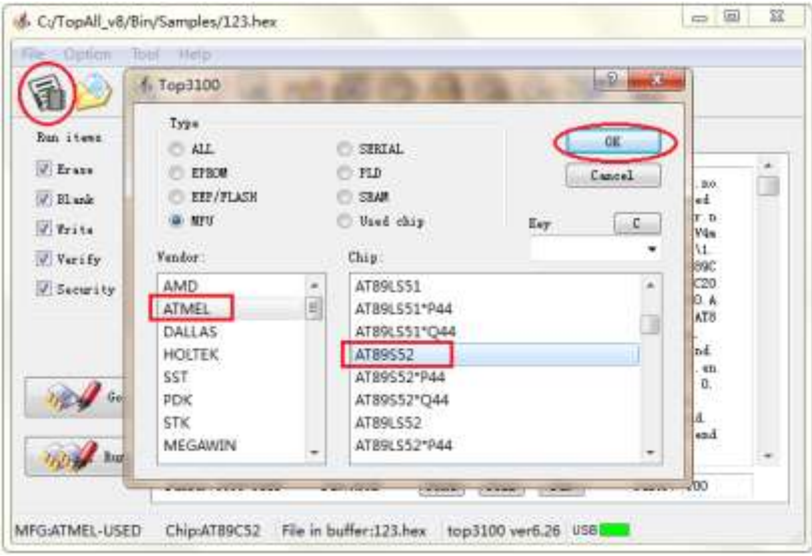
Take out The written chip away,shows:

Insert the new chip, board under lock automatically write a seat, make operation easier.

5.1.3 Select chip

Select the menu "List" after the implementation of the pop-up dialog window:

Figure selection order: type [SCM] -> manufacturers [ATMEL] -> Chip AT89S52



First select the types of chips In the "Select Device " box,, such as "MPU"

Then select manufacturers In the left list box, for example, selecting "ATMEl";

Then Select the chip in the mid list box. For example, selecting "AT89C52".

"Fuzzy search" refers to the part number or the manufacturer has blurred the concept of typing words to find, such as the type "51" is displayed 51 series microcontroller various devices. Can narrow the search to improve the search speed.

5.1.6 Erase

Erase the entire contents of the memory chip, erased all \"FF\". Only electric erasing device can use this command, ultraviolet erasing an EPROM.

5.1.7 Blank

Device before writing, to check whether the empty. An empty piece of every byte is "FF" (hexadecimal). Inspection process visual display by the progress bar, and if I found unit is not empty, empty will exit inspection operation, and displays a non-empty unit address and data. The operation check all of EPROM address space, have nothing to do with the device start address and length of data set. An EPROM can check again after ultraviolet light, still pass the device has been damaged.

5.1.8 Write

Write device is operating within the buffer data written to chip. File began to address and device address of the default is 0, implied burning all the units of the device, data length up to six hexadecimal number (HEX), maximum 8 m address space. The user can also according to the need to begin to address Settings, achieve the goal of some burning.

Note:

Device before writing should pay attention to the chip can't make a mistake, different types, using the programming voltage may be different, in order to avoid damage to the device or equipment.

5.1.9 Verify

The operation data in the buffer zone compared with the chip, proofreading, visual display, by the progress bar when proofreading unit when something goes wrong, will withdraw from proofreading, and display the wrong address, data buffer and chip data unit. In order to ensure that data written to the device is correct, "write device" operation includes proofreading, do not need to repeat operation.

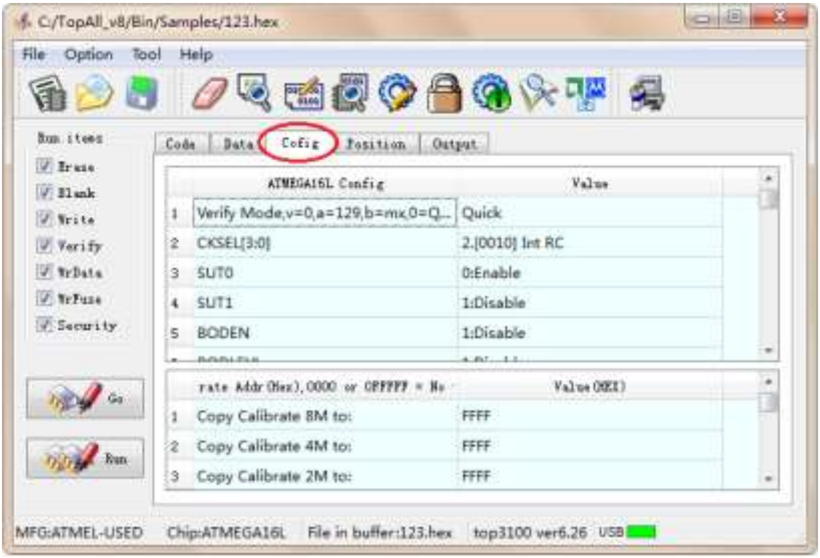
5.1.10 Config

Different models of different device configuration. With the code, configuration is designed by software engineers during the development phase. Without the correct configuration, light has the code, record the program can not be used. Understanding the detailed configuration, can go to the chip manufacturer's web site to download the device of technical documentation (Datasheet, commonly known as a PDF file)

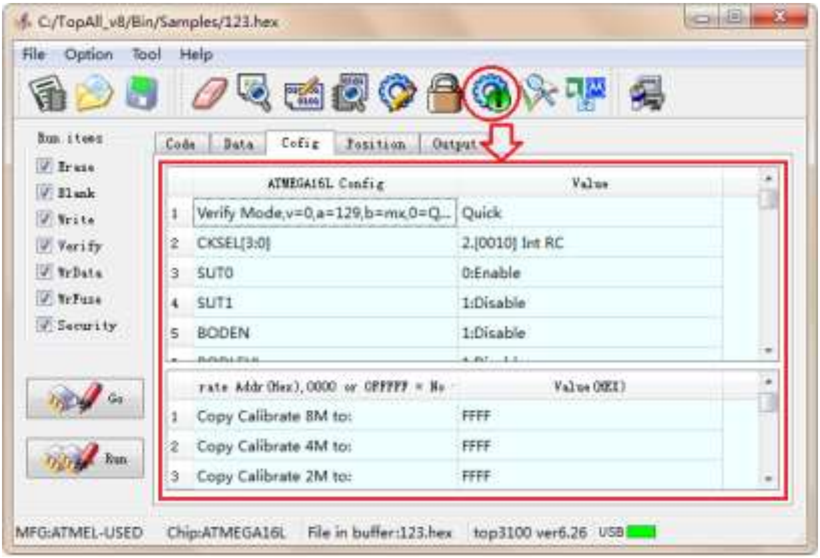
Under the condition of the mother land of, don't know how to configure, can TOP programmer read configuration command, automatic reading piece configured correctly. (must be able to run normally female). So that users don't have to manually configure.

Upper part is in the configuration card "variables", can use the mouse to double-click on the configuration line to choose different configuration. Can also right click on the line, the pop-up list box. This is particularly suited to more configuration variables, such as concussion.

The lower part of the configuration card is "32-bit variables", must use keyboard input hexadecimal number to set. Most of the devices do not need to set up this part.


C:/TopAll_v8/Bin/Samples/123.hex
File Option Tool Help
Run items
Erase
Blank
Write
Verify
WrData
WrFuse
Security
Go
Run
Code Data Cofig Position Output
ATMEGA16L Config
Value
1 Verify Mode,v=0,a=129,b=mx,0=Q... Quick
2 CKSEL[3:0] 2.[0010] Int RC
3 SUT0 0:Enable
4 SUT1 1:Disable
5 BODEN 1:Disable
Value(HEX)
1 Copy Calibrate 8M to: FFFF
2 Copy Calibrate 4M to: FFFF
3 Copy Calibrate 2M to: FFFF
MFG:ATMEL-USED Chip:ATMEGA16L File in buffer:123.hex top3100 ver6.26 USB

5.1.11 Read config



If the program is not developed, don't know how to configure in advance by TOP programmer read configuration command , automatic reading piece configured correctly. (of course, mother must be able to run normally in the chip). So that users don't have to manually configure.

Some manufacturers of chip (PIC), even with protection, can also read right configuration. Also some of them are with protection can't read, such as ATMEGA.

No encryption protection chip, usually read the configuration.

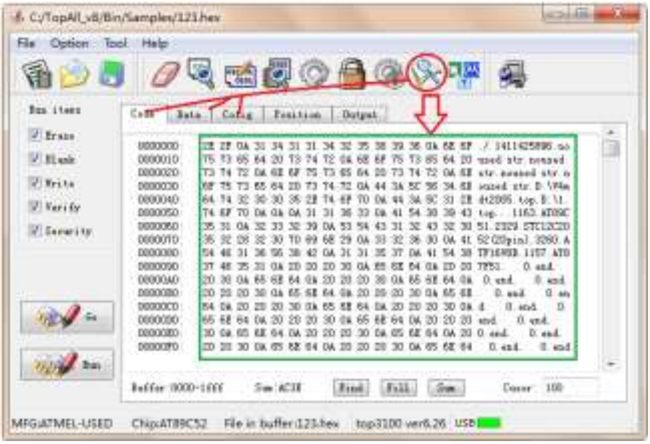
Configuration of other specifications, refer to "write configuration" command.

5.1.12 Lock

Block a lot of EEPROM and FLASH ROM has added to protect the encryption function. After add protection device can not read data, the application after completion of the write operation usually use.

Some chips (PIC) no single encryption protection operation, the protection of a included in the configuration (PIC of CP = 0 protection effectively). Write the configuration operation at the same time, the encryption protection.

5.1.13 Read



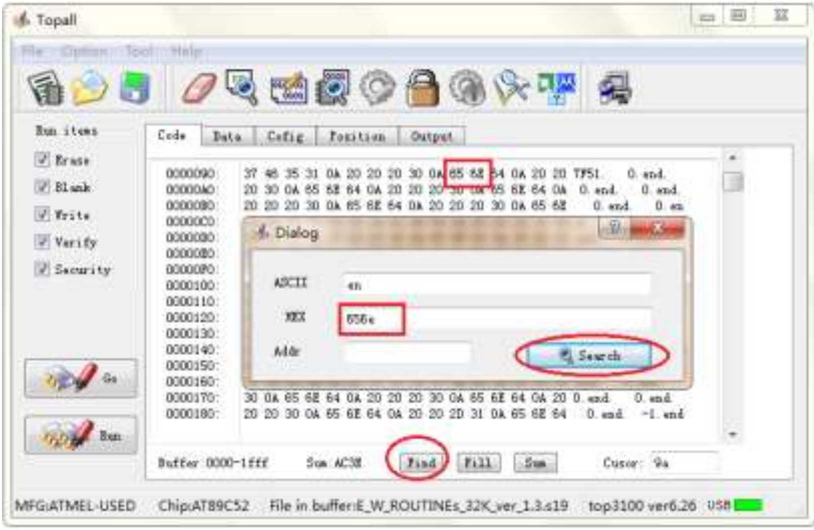
Written as not have protection device (encryption), can be read by the function device (code + data + configuration) to the buffer. The content of the reading, which can be used to copy the chip. Copy of the chip, and the same mother.

5.1.14 Read ID

Obtains the plant code, such as the AT89S52, read 3 bytes of code, the first byte (1 e) on behalf of the manufacturer Atmel, the second byte (52) on behalf of AT89S52 models. Byte represents the 'S' on the ground, the output window shows as follows:

5.2.1 Search

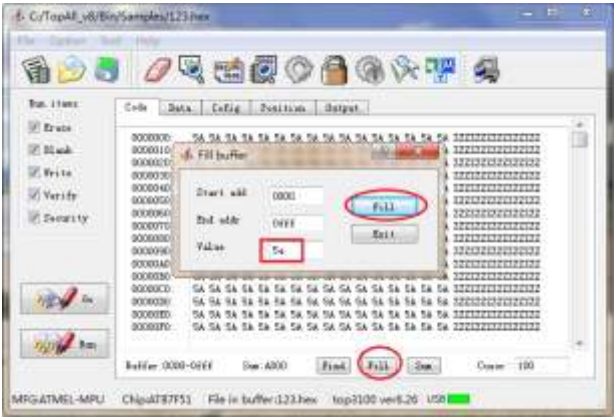
This operation is used in the buffer for the specified data. Select the menu "Edit Modify / search" to display the following dialog box.



Enter the code or the corresponding ASCL two hexadecimal characters (case insensitive). Click "Find" to start looking. Can continue to point "search" to find the next one and the same character.

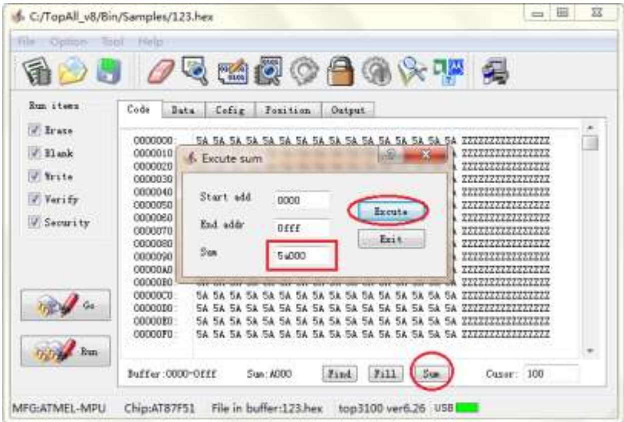
5.2.2 Fill buffer

This operation can be part of the buffer unit filled with the required data.Select the menu "Edit / Fill Data" dialog box is displayed:



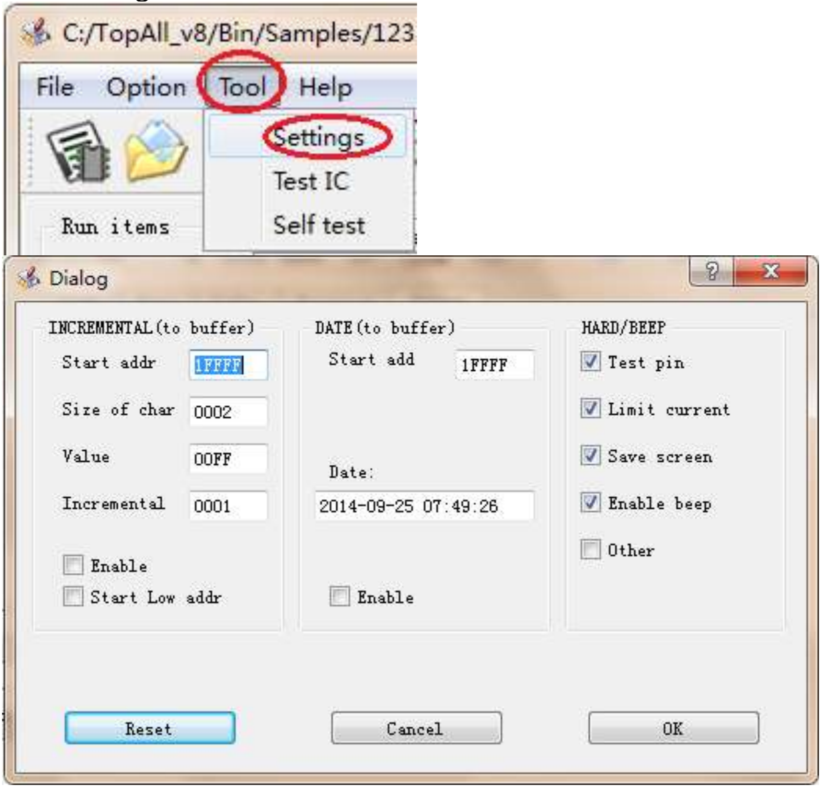
Enter the starting address and ending address, enter the fill value. Click "OK." Fill in the buffer to see the value of the specified address.

5.2.3 Check sum



Checks and enter the start and end addresses, click on "Excute " in the check box, and you can see the checksum.

5.3.1 Settings



Linear increment refers to, the use of components of the rest of the storage space, storing some user information. Such as product serial number and so on. Product serial number is a variable, and each piece is different, so each write a piece, to increase 1 or any other number.

5.3.1.1 Increment:

Start address---free storage space;

Size of char---the default 2 bytes is equal to the 16-bit integers, 4 bytes = 32-bit integer;

Value---can be set to 0, after increasing;

Incremental---each write a piece, increasing number of variables. The general is set to 1.

[Enable]---off to allow the above Settings, blank is invalid.

[Start lower addr]---2 or 4 bytes on the increase, starting from the most the right side of bytes.

5.3.1.2 date:

Start addr---free storage space;

Date---character variables, will automatically change, do not need to input;

[Enable]---off to allow the above Settings, blank is invalid.

5.3.1.3 HARD/BEEP:

[Test pin]---click allow, blank is invalid.

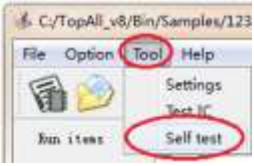
[Limit current]---tick allow current, blank is invalid.

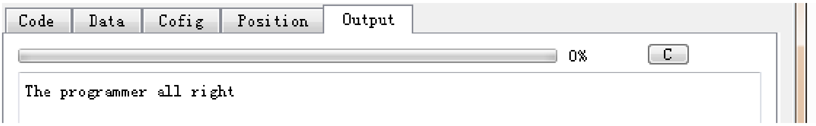
[Save screen]---click allow, blank is invalid.

[Enable beep]---click allow, blank is invalid.

[Other] ---is not used

5.3.3 Check programmer hardware

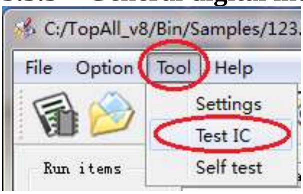




5.3.4 English/Chinese

Generally don't have to set the software will be automatically switched according to the operating system version.

5.3.5 General digital integrated circuit test



Can test 74,45,40 three series of thousands of the stand or fall of model components and logic function.

Type: test TTL/CMOS

Press the "confirm" button, the pop-up test window is as follows:

Choose the series type under test device, model after press test. If the device is good,

According to "OK", or "Bad!!!!!!!!!" .

Description: this function is additional function, because the device voltage, electric current of the bigger difference, the test result is not necessarily accurate, provide a reference: only, cannot serve as the basis. General test "OK", can be sure is good, and the test of "Bad", is not necessarily accurate, may have a miscalculation.

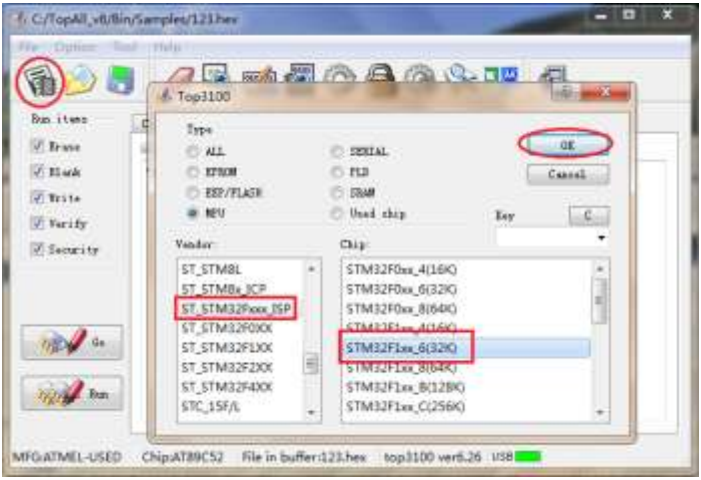
The individual cannot or exit phenomena belong to normal phenomenon.

Chapter 5　ISP/ICP

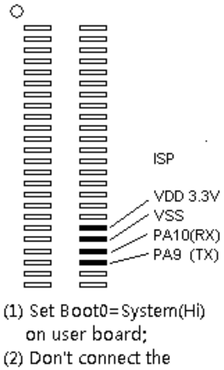
If the IC is already soldered on the user board and there is a port on it，You can connect some leads in the Top programmer socket to the online programming board. Do not connect power and GND on user board，The TOP programmer will supply power to the user board.

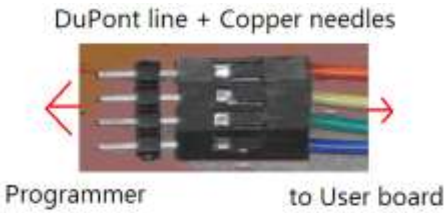
Case in STM32f103 operation is as follows:

(1) Choose the manufacturer which with a "_ISP" on the left list box and select a chip in the mid list box. In this case is "STM32F1xxx_6(32K)".



(2) According to the position to prepare four DuPont line. Insert four Copper needles in the end of DuPont line and then clip to lock socket.





(3) Connect another end of DuPont to user board UART1.
In this case the board is a demo kits.You had to close the BOOT0 config to the "System" (up to 3.3v).

(4) Load your code file and click [Start] to do your work.