

## 2.7 Use H-JTAG to rapid Program Development Board BIOS

### 2.7.1 H-JTAG Introduction

Description: on the part of the H-JTAG help instruction manual; please refer to its official website <http://www.hjtag.com>

The current study and development of ARM is very popular, as the ARM software development is relatively more complex in terms of previous single-chip miscellaneous, hardware, and more consideration, and therefore a good choice of method will be able to debug the debugging process allowing developers to become more plus direct and simple.

There are now many emulator to sell can be used to debug ARM, but their prices are often more expensive. This general simulator has its own dedicated software and hardware, in terms of speed and flash programming, etc. they have own advantages. However, early scholars, the cost of these simulators are too high. And the emergence of simple simulator, we can make use of even ARM hardware emulator.

With the hardware debugger, but also with debug agent software, as an intermediary, the debugger front-end software (such as AXD) the debugging information of the goal and objectives of on-board chip interactive in order to finally complete the simulation task. At present, can be used free of charge simple ARM software emulator of the agent are many more differences, mainly in the degree of ease of use, the target device support speed debugging. H-JTAG as a summary of recent new ARM emulator debug agent, the support device comparison more front-end debugger support more software, especially in support of keil, the debugging advantages of speed is also useful.

H-JTAG is a free twentyone introduced software debugging agent. The official home page is: <http://www.hjtag.com/>

The current version 0.4.4 supports the following characteristics (the updated versions of H-JTAG please download the trial):

1. Support RDI 1.5.0 and 1.5.1;



2. Support the ARM7 and ARM9 (including ARM9E-S and ARM9EJ-S);
3. Support the thumb with the arm instruction set;
4. Support little-endian and big-endian;
5. Support semihosting;
6. Support the wiggler, SJF-JTAG and simple user-defined hardware interface debugger;
7. Support Windows 9.X/NT/2000/XP;
8. Support the flash device programming

Note: The development board used for JTAG board is SJF-JTAG

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## 2.7.2 Installed and Setup H-JTAG

### (1) Installation H-JTAG

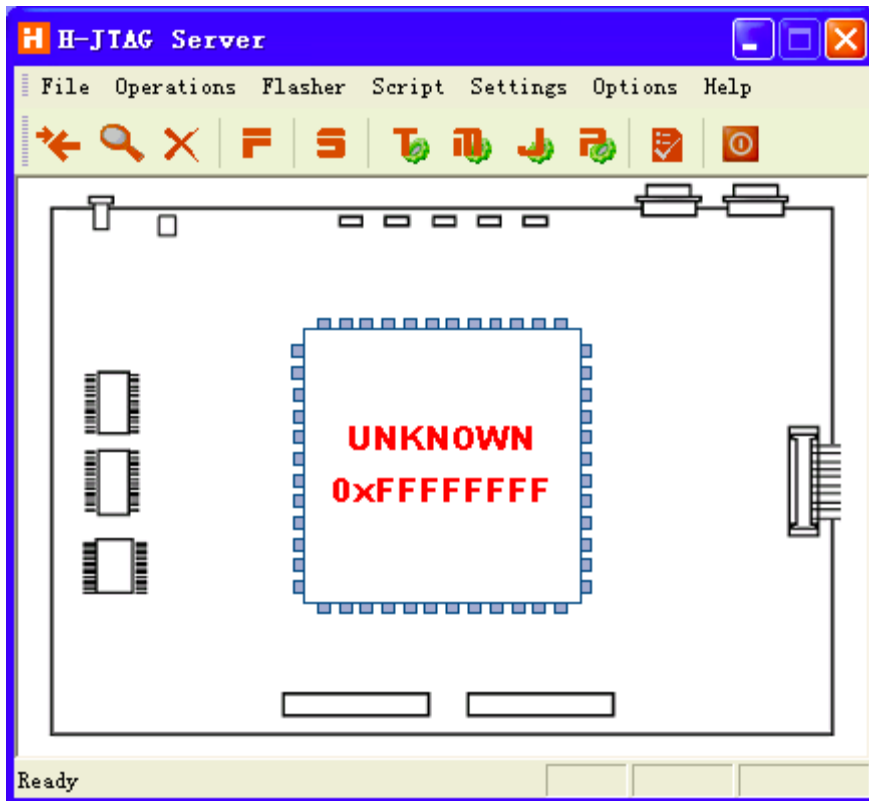
H-JTAG installation CD-ROM file is located in the "Windows platform tools\H-JTAG" directory, double-click operation, in accordance with their tips can be installed.



Installed, will be on the desktop to generate H-JTAG and H-Flasher shortcut, double-click to run H-JTAG, program automatically detect whether or not connected to the JTAG equipment, because we do not have to do before any settings, it will prompt out a window:

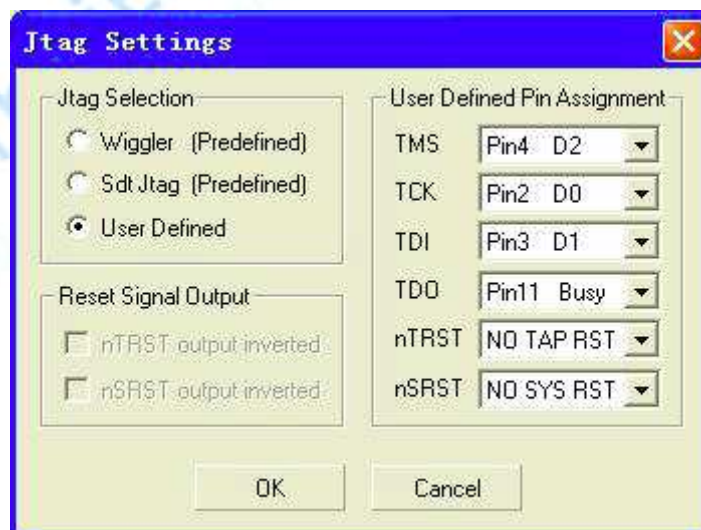


Click OK to enter the main program interface, because there is no connection to any target device, it displayed as shown:



(2) Set JTAG Port

H-JTAG in the main menu interface click “Setting > Jtag Settings”, make the following settings in the figure below; click OK to return to the main interface.



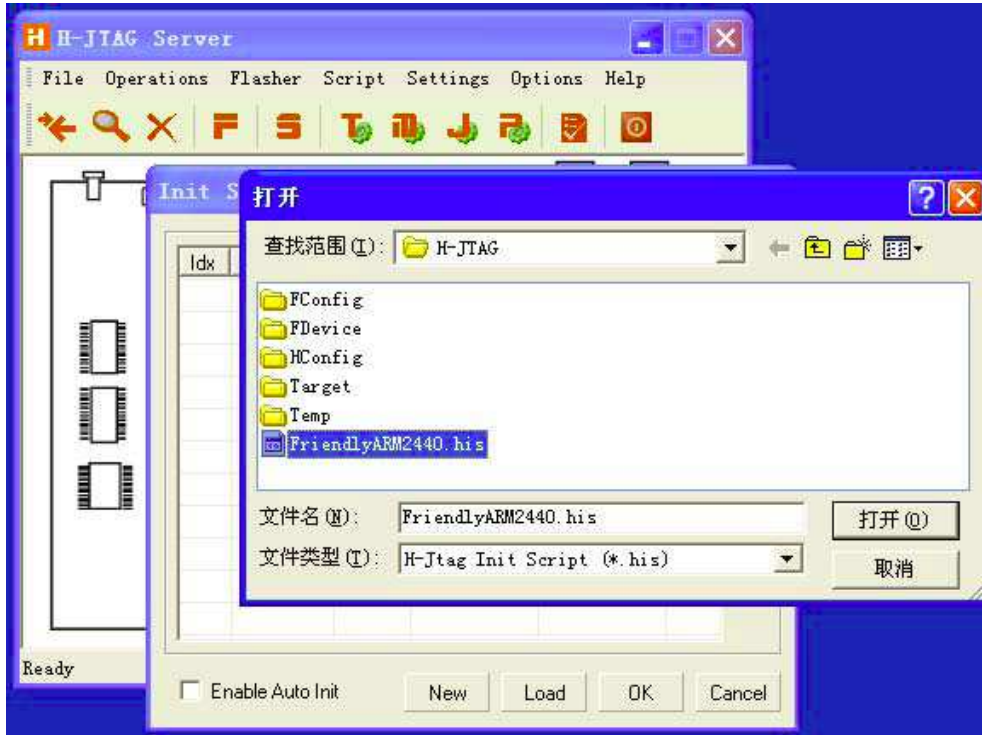
(3) Set Initialization Script

Copy files FriendlyARM2440.his and H-Flasher\_QQ2440.hfc in "Windows Platform Tools\H-JTAG" directory on CD-ROM to the H-JTAG installation directory, as shown in figure:

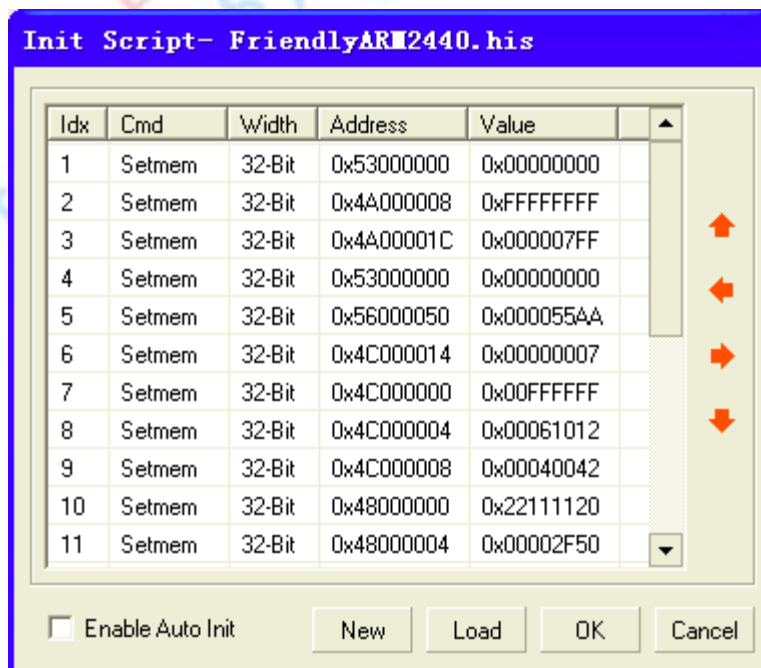


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H-JTAG in the main interface, point Script-> Init Script, out of Init Script window, the following points in the window load button, and locate and select the open FriendlyARM2440.his just copy files, figure:



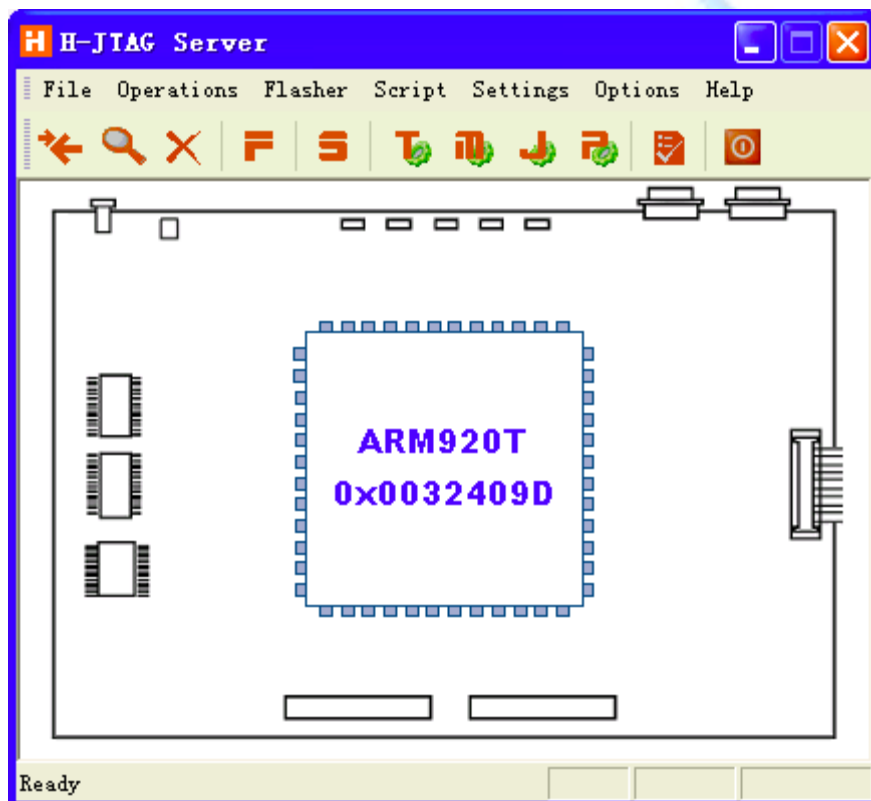
At this time, Init Script window will be included in the script filled, figure, careful not to click on "Enable Auto Init", then click OK to return at the main H-JTAG interface:



(4) Detection Target Device

Development board using a small plate attached to the JTAG board to connect the JTAG interface, and connected to open the power supply. At the main menu Operations > Detect Target, or at the corresponding toolbar icon can be, at this time can be seen on the head has been detected a standard device.

Tip: If you do not set the initialization script can also be detected by CPU, but can't carry out the following single-step debugging.

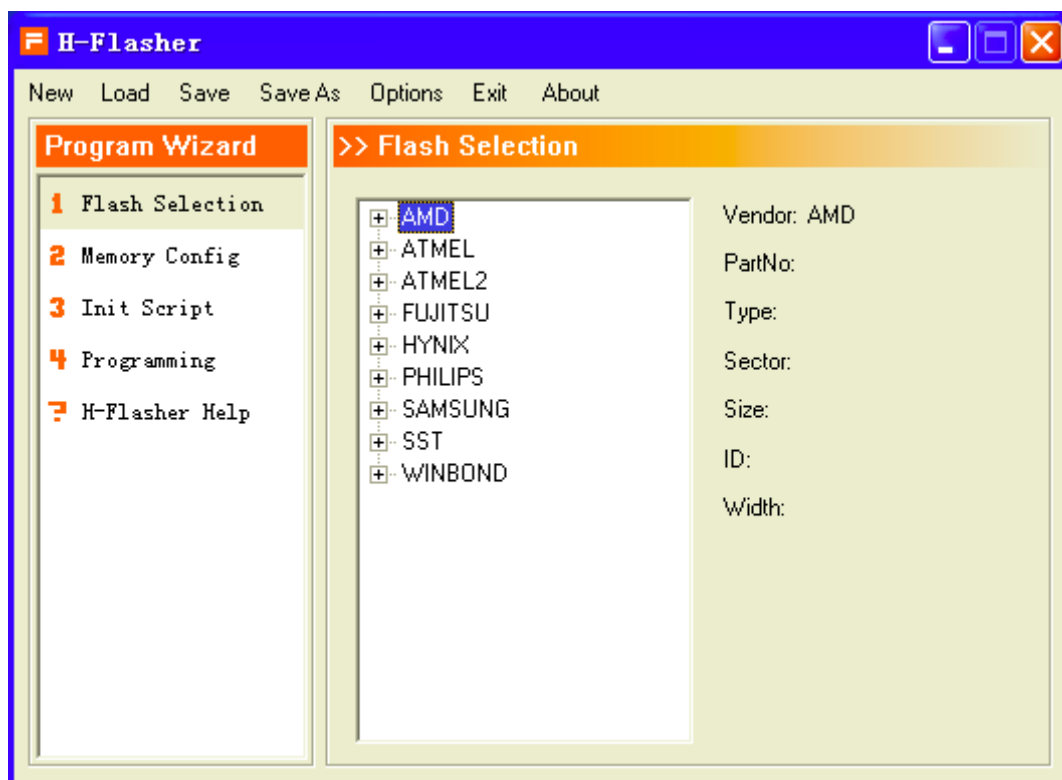


### 2.7.3 Model Settings and Program Flash BIOS

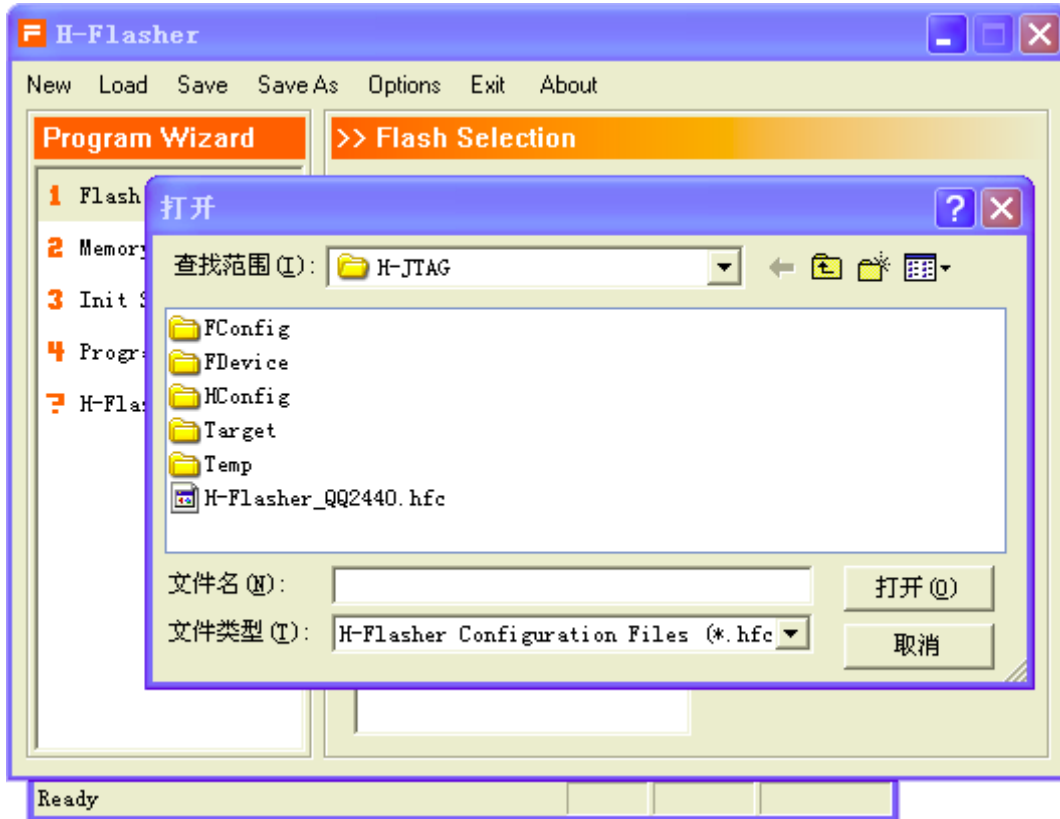
Note: Before performing the following steps to ensure that the development board to choose to start from the NOR flash, **Keep this in mind!**

Then the above steps:

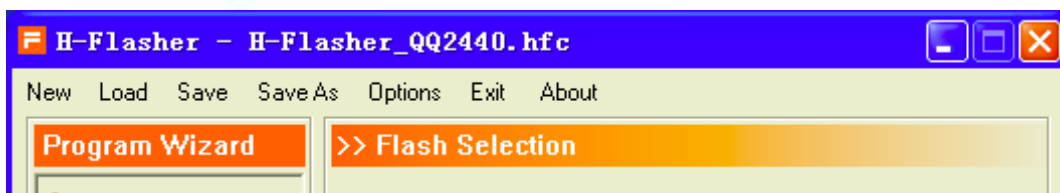
(1) H-JTAG main menu of the Flasher > Start H-Flasher to open H-Flasher programmer window, shown in figure:



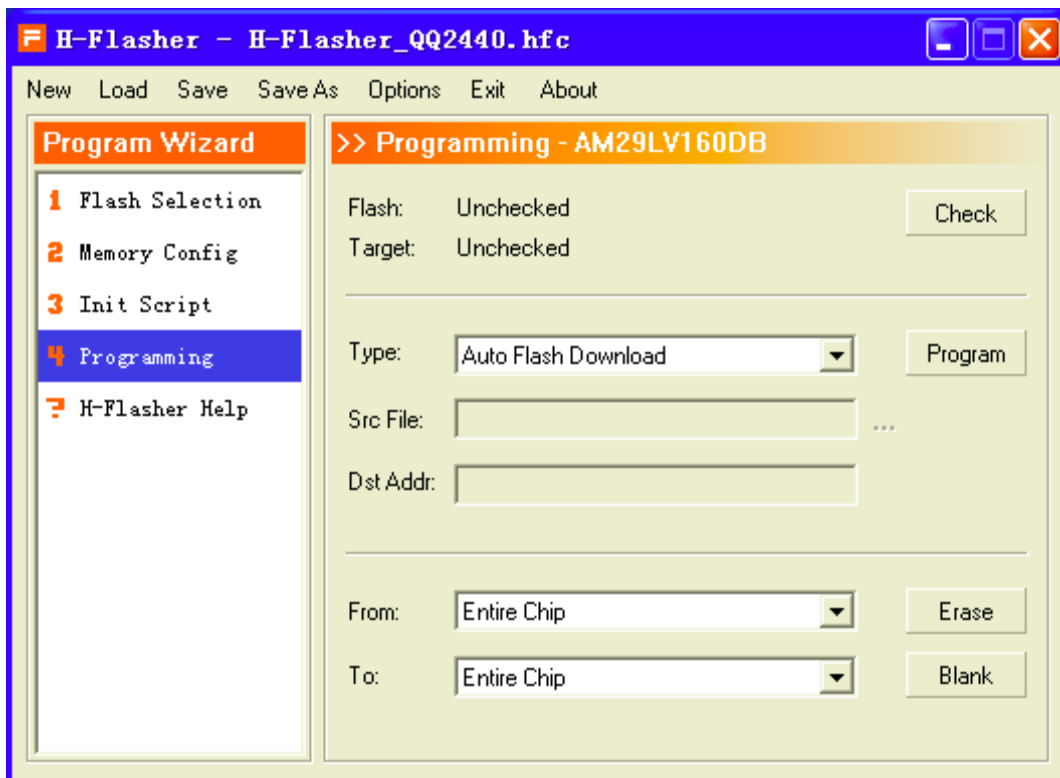
(2) H-Flasher window menu, select "Load", open the file selection window appears, select the above steps to copy the H-Flasher\_mini2440.hfc documents, shown in figure:



(3) can see that Flash has been included in the initial paper and displayed in the H-Flasher window title bar, shown in figure:

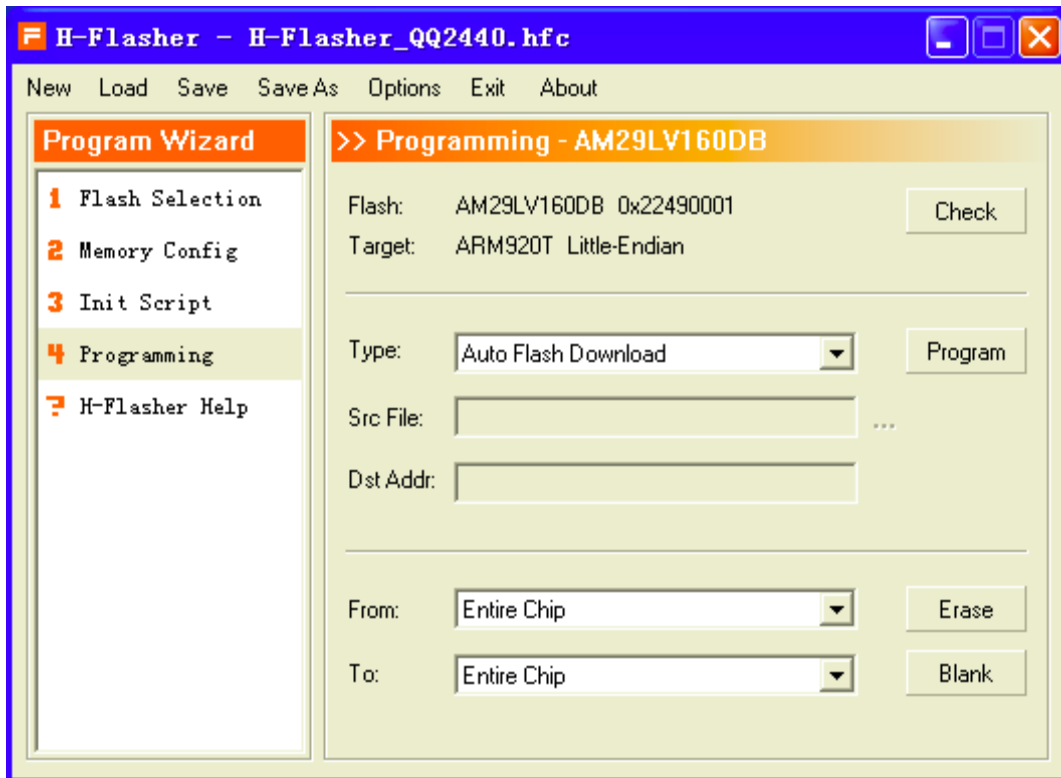


At this time, H-Flasher at the left navigation bar of the "4 Programming", appears in figure interface:

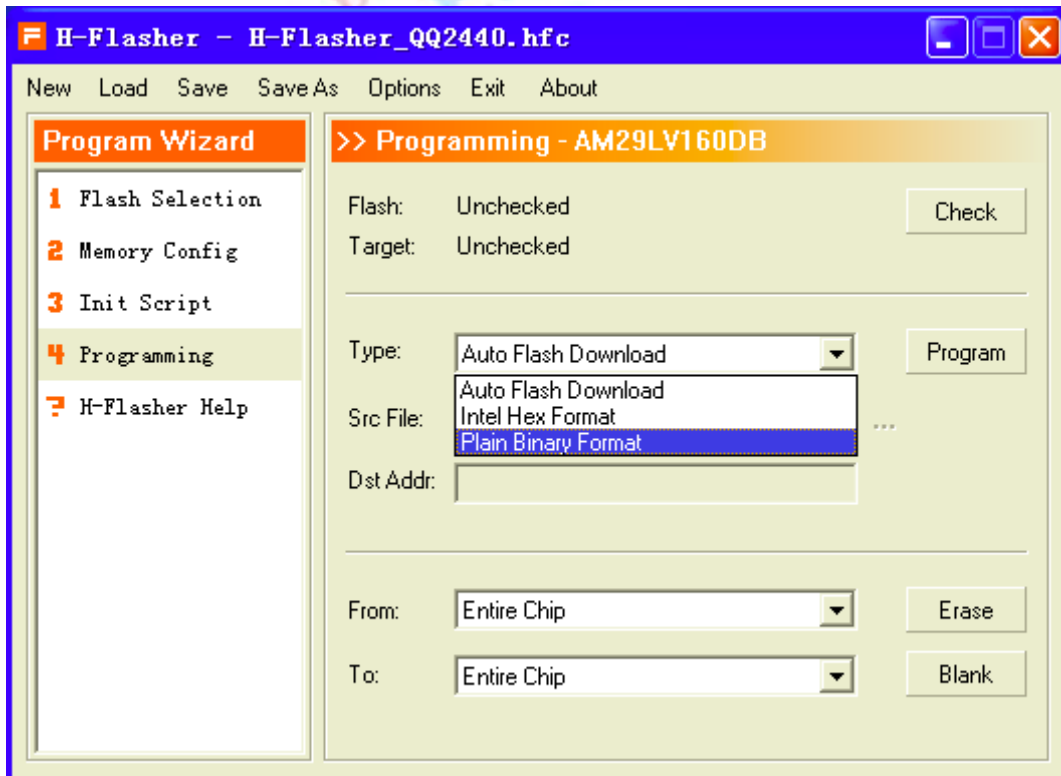


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(4) Click "Check" button, H-Flasher will be used to detect the mini2440 used NOR flash  
Type for AM29LV160DB, figure.



(5) Select "Plain Binary Format" from Type drop-down list, figure.

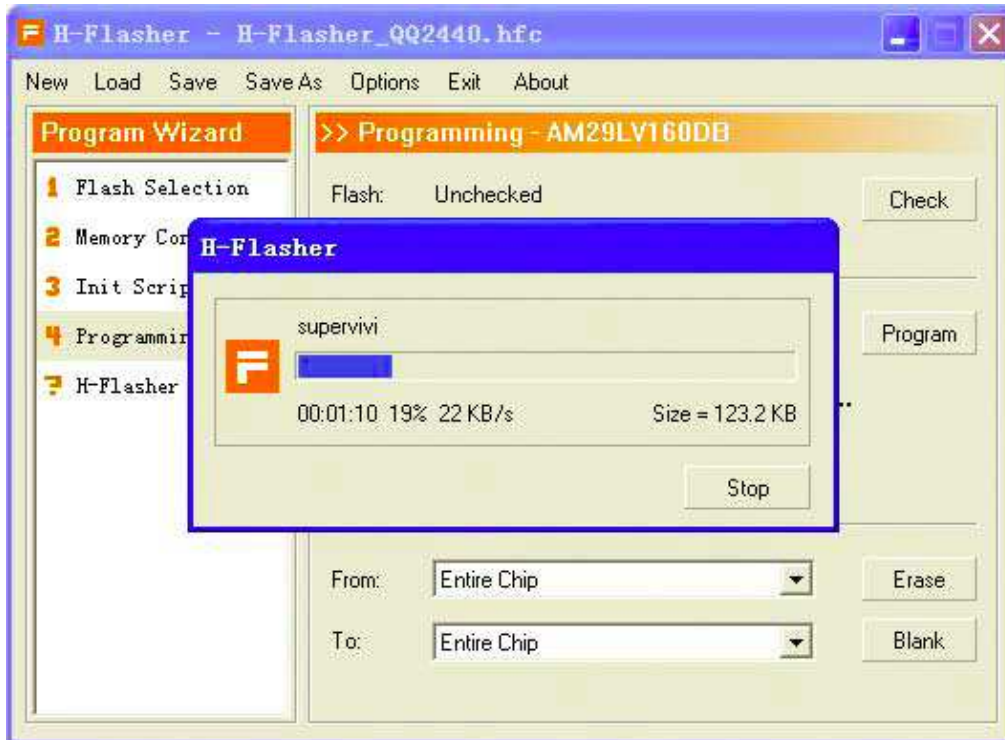


Click the Browse button to the right of Src File, select the supervivi file to program, and Dst Addr lose column programmer to the start address "0", figure.

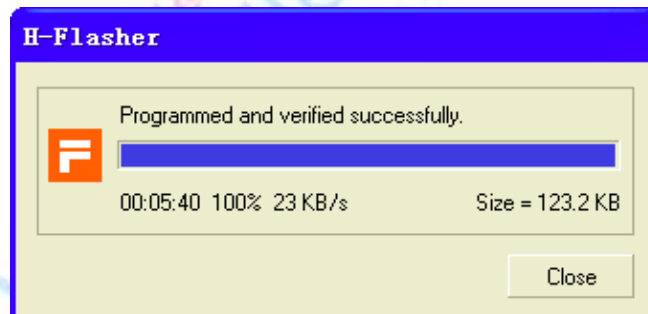


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(6) Click "Program" button to start to program supervivi, figure:



Program finished, "Stop" button will become "Close", click "Close" to remove the end of JTAG programmer and programmer board, figure:



(7) At this point, you have to write BIOS burning NOR flash, if you need program more mini2440, without repeat the above steps (the next open H-JTAG run will automatically load when the previous configuration), can be directly connected to Jtag lines, click "Check" to detect about Flash, and then click "Program" can start a new programmer.

Note: At present, only for H-JTAG programmer NOR flash, and the programmer cannot directly NAND flash, a number of development board manufacturers in order to save costs, many of them saved the NOR flash, therefore not described in this section can be quick and simple steps to burn write BIOS.

## 2.7.4 Frequently Asked Questions

In fact, we do not recommend beginners to use H-JTAG programmer NOR flash, the event will lead to errors the normal operation of the back steps.

Some users may try a programmer or documents to other programs in NOR flash, then use H-JTAG Supervivi programmer is likely to fail, usually because the system reset or reboot immediately after the implementation of the NOR flash procedure, resulting in H-JTAG not work correctly.

Can try this solution: immediately after the reset point in the H-Flasher the "Program" button, to prevent the NOR flash the further implementation of the procedures.

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