Application Note

Document No.: AN1085

APM32F4xx_Download Application Note

Version: V1.0

1   Introduction

This application note guides beginners to learn how APM32F4xx series products use the simulator to download programs to the development board.

It mainly contains:

The introduction to the simulator, the hardware connection method, and the description of simulator configuration and download in KEIL and IAR software.

All materials involved in this application note can be obtained and downloaded from the website of www.geehy.com.

Contents

2   Use Geehy-Link To Program

2.1   Introduction to simulator

Geehy-LINK is a development tool integrating simulator and programmer, which can debug and simulate the APM32 full-range MCU products online in Keil, IAR and other integrated development environments. Support full-speed operation, single-step debugging, breakpoint setting and other debugging methods. Refer to the document of *GEEHY-LINK User Manual V1.0.0.pdf* on the official website.

2.2   Hardware connection

As shown in Figure 1, connect the interface 2 of the simulator to the USB interface of the computer through the USB cable. If the indicator light of the simulator is on and Geehy DAP USB Device appears on the device manager of the computer, as shown in Figure 2, the simulator is normal. Then connect the interface 1 at the other end of the simulator to the JTAG interface of the development board, and power on the development board through the external power supply. Or power the motherboard through Geehy-Link downloading. Press and hold the middle power supply button until the indicator light turns from green to orange, indicating that the motherboard has been powered by Geehy-Link. Finally, download the program to the development board through the software KEIL or IAR.
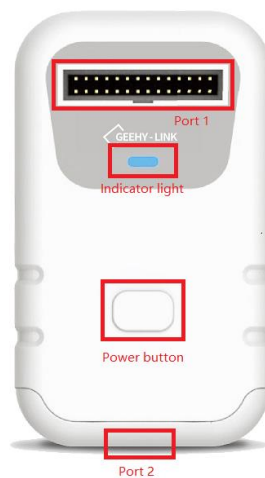

Figure 1

Figure 2

2.3 Configure and download the program

Keil MDK IDE：

a) As shown in Figure 3, open the project file and select "Options for Target" tab.

Figure3

b) As shown in Figure 4, in the "Debug" option, download and select the simulator as "CMSIS-DAP Debugger" and then select "Setting".

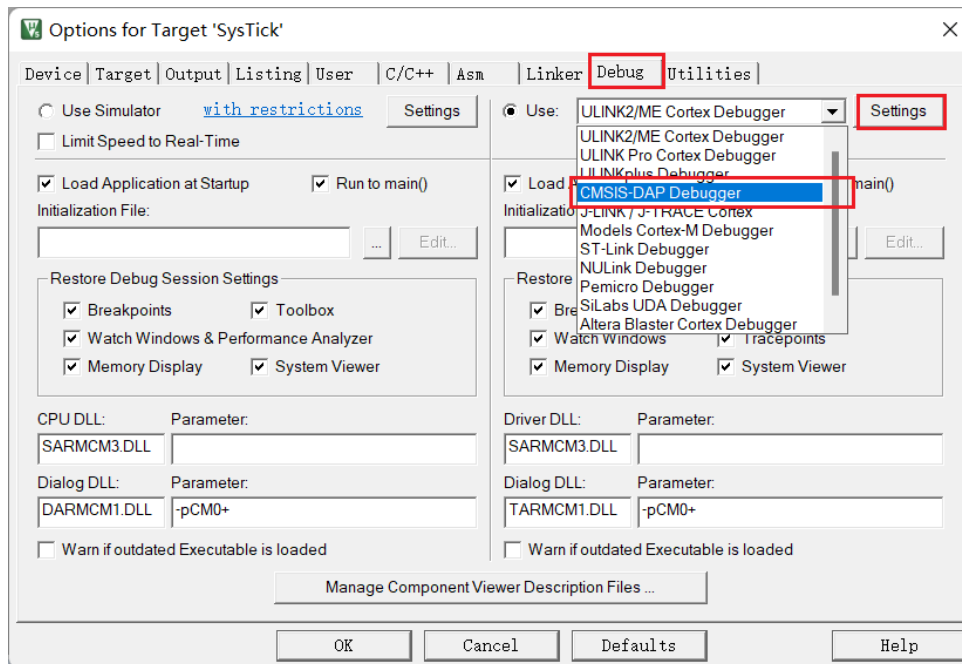
Figure 4

c) As shown in Figure 5, after entering the Settings option configuration, select Debug, select "Geehy CMSIS-DAP" (the old version is "Apex CMSIS-DAP") in the "CMSIS-DAP Cortex-M Driver Setup" interface, check SWJ, and select the SW interface. If the simulator is connected to the computer and the development board, and the development board has been powered on, the simulator will recognize the chip of the development board and display it in SW Device.
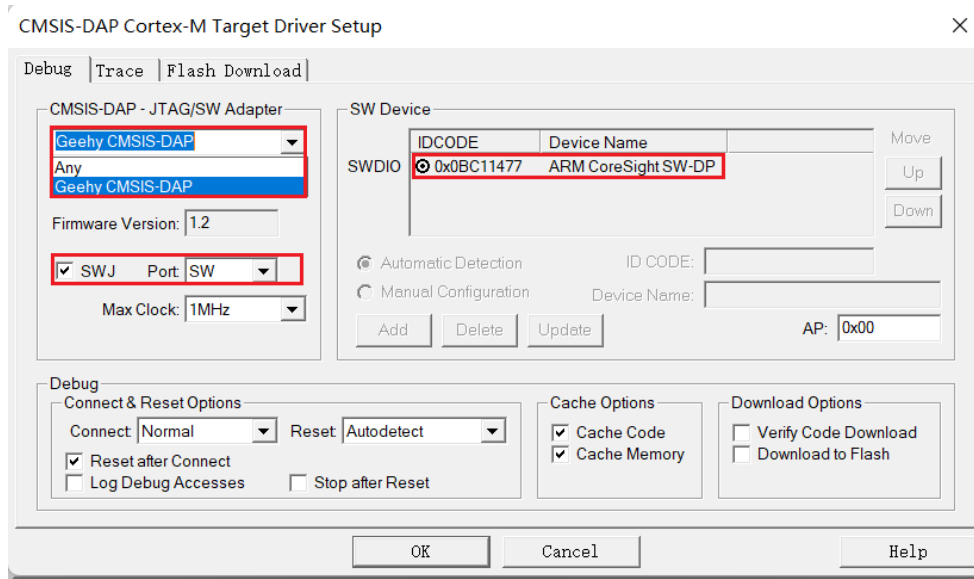
Figure 5

d) As shown in Figure 6, select the Flash Download tab and Erase Sectors. If you select Full Sectors, the erasing process will be slow. Check Reset and Run at the same time, so that the program can run automatically after downloading, not needing manual resetting. Finally, select in the "Programming Algorithm" interface according to the actual model, and click "OK".
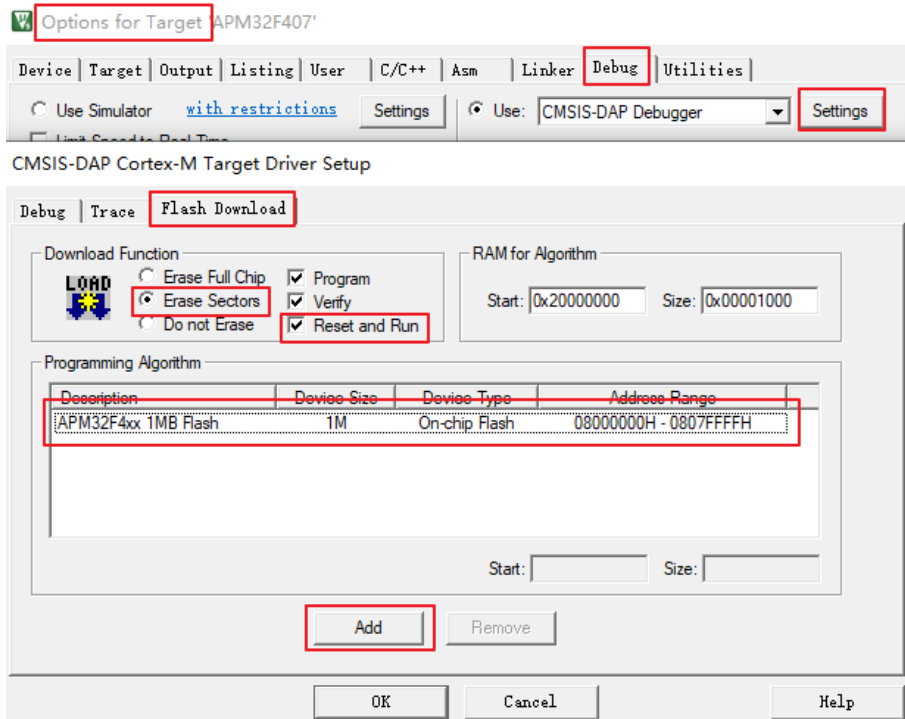

Figure 6

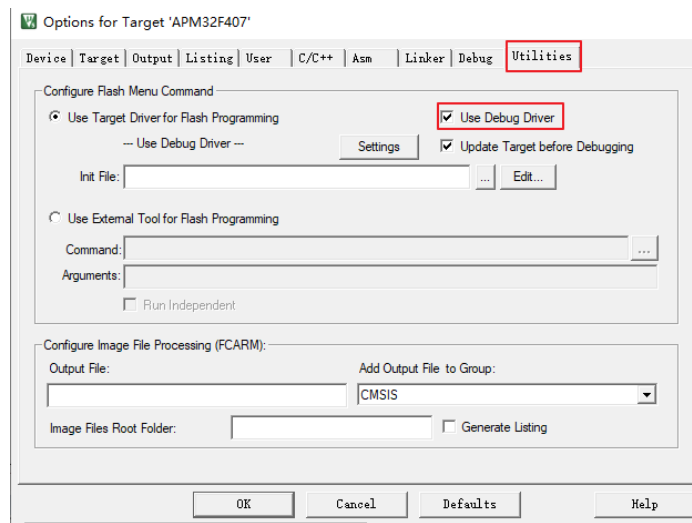e) As shown in Figure 7, check the default configured simulator in the Utilities option configuration

Figure 7

f) As shown in Figure 8, after the previous steps are completed, we can download the compiled program to the development board and run it. In the download process, you only need to directly click the LOAD button in KEIL.
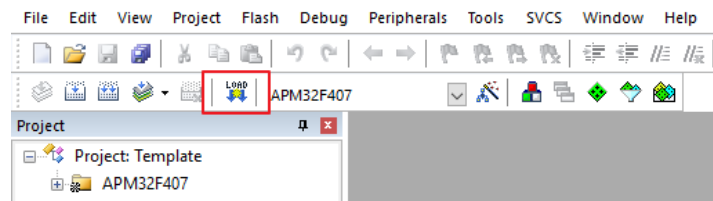

Figure 8

g) After downloading, as shown in Figure 9, you can see Programming Done in the Build Output tab. If "Reset and Run" is checked in the above steps, you will also see Application running... in the tab, which indicates that the program has been downloaded and is running automatically. Experimental phenomena can be observed on the development board. If Application running... does not appear, you need to manually reset the development board.
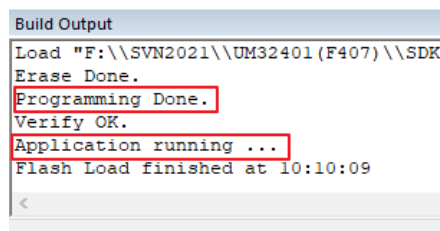

Figure 9

IAR EW for Arm IDE：

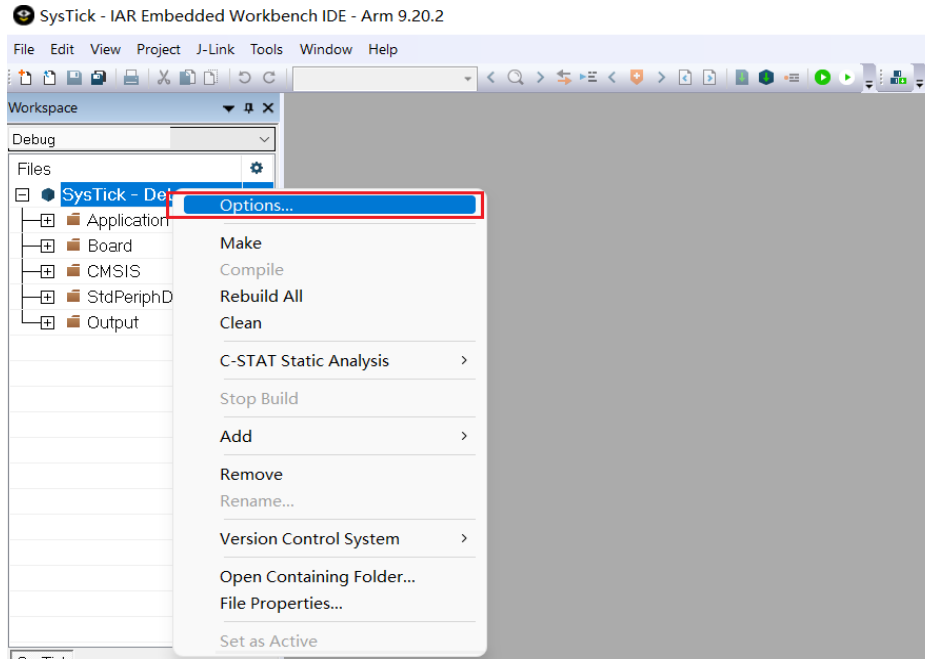a)   As shown in Figure 10, open the project file and select "Options" tab.

Figure 10

b)   As shown in Figure 11, select "CMSIS DAP" simulator in "Debugger" and click "OK".

Figure 11

c)   After the previous steps are completed, we can download the compiled program to the

development board and run it. As shown in Figure 12, in the download process, you only need to select Download in the Project option of IAR and click the download active application button to download the program. After resetting the development board, you can see the experimental phenomenon of the routine.

Figure 12

3 Version History

Table 1 Document Version History

Date	Version	Change History
May 31, 2022	1.0	New

Statement

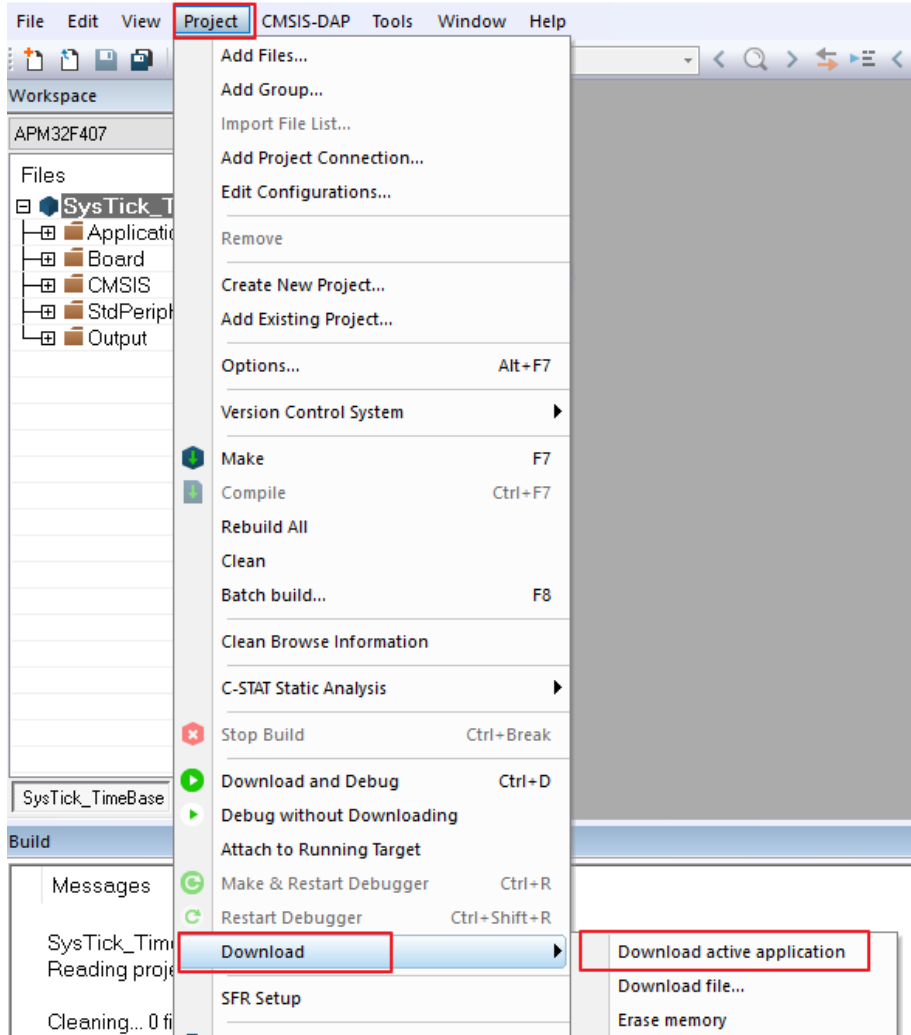This document is formulated and published by Geehy Semiconductor Co., Ltd. (hereinafter referred to as "Geehy"). The contents in this document are protected by laws and regulations of trademark, copyright and software copyright. Geehy reserves the right to make corrections and modifications to this document at any time. Please read this document carefully before using Geehy products. Once you use the Geehy product, it means that you (hereinafter referred to as the "users") have known and accepted all the contents of this document. Users shall use the Geehy product in accordance with relevant laws and regulations and the requirements of this document.

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8. Scope of Application

The information in this document replaces the information provided in all previous versions of the document.