



TELINK SEMICONDUCTOR

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Brief:

This document is the user guide for Telink download_tool
v5.1.1.

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|---------|-----------------|--------|-------------------|
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1 Brief Introduction

Telink download_tool applies to all engineers who want to develop applications based on Telink SoCs including 8267, 8266, 8366, 8368 and 8255 currently.

This document presents the guide on how to use Telink download_tool v5.1.1.

1.1 Function

During SDK development, by using Telink download_tool, firmware can be directly downloaded into the target board (e.g. development board) via USB mode or burning EVK mode.

Its main function includes “Erase flash sector”, “Download firmware file and reboot” and “Activate MCU when firmware downloading failed”, “Debug MCU”.

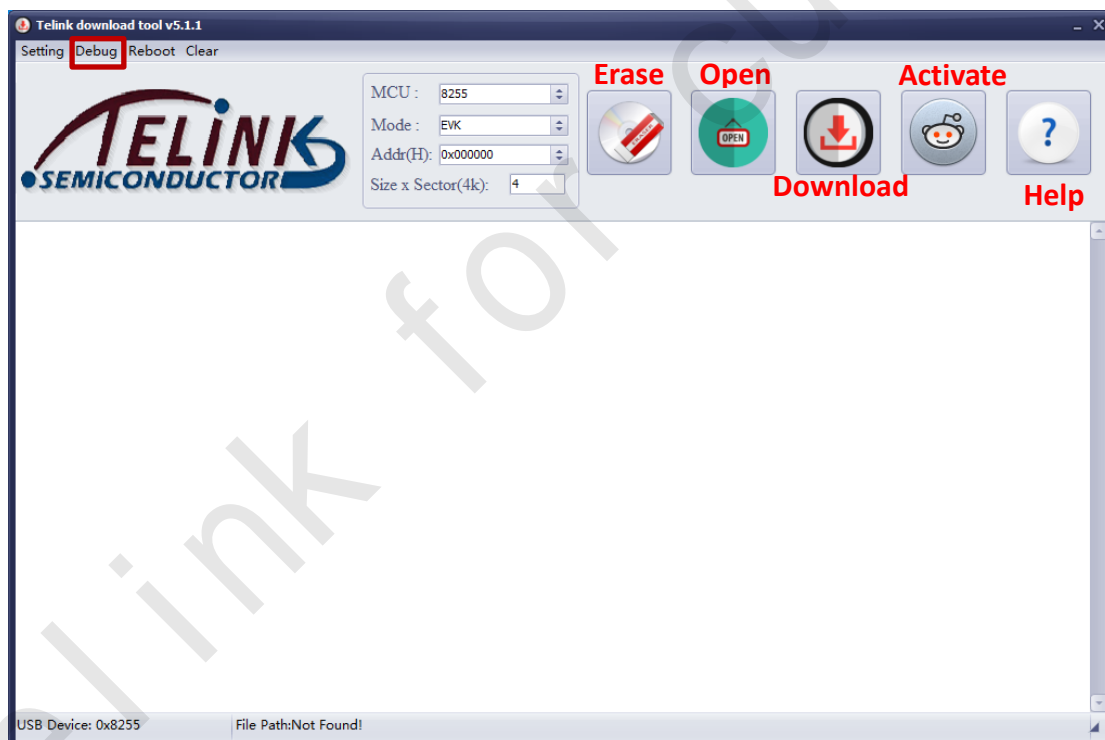


Figure 1 Main interface of Telink download_tool v5.1.1

2 Operation Guide

2.1 Download firmware

2.1.1 Connect hardware

Before using Telink download_tool, it's needed to connect the target board with PC.

There are two methods to connect the target board with PC, as shown below.

1. Method 1: Directly connect the target board with PC via USB method. This method only applies to target board with USB interface, e.g. a dongle board.

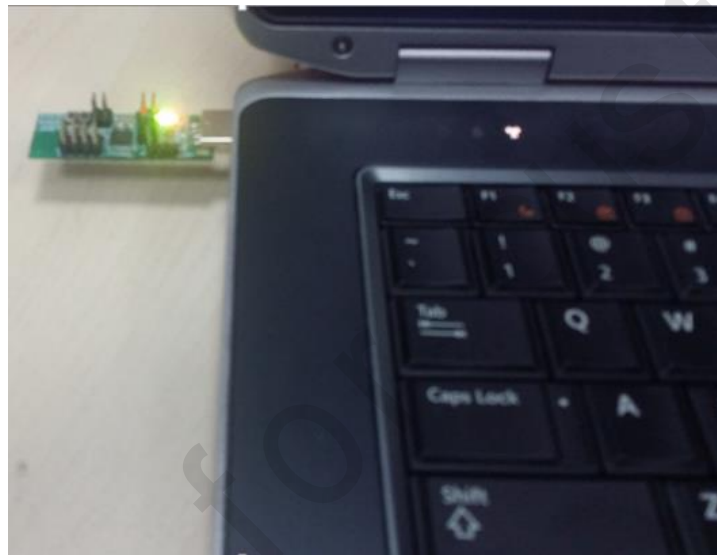


Figure 2 Directly connect target board with PC

2. Method 2: Connect the target board with PC via Telink burning EVK TLSR8266BR56.
 - 1) Connect the burning EVK with PC via an USB cable. Observe the indicating lights of the burning EVK: The indicating lights will blink once to indicate that the burning EVK and its connection with PC is OK.



Figure 3 Connect burning EVK with PC

2) Connect target board with burning EVK.

There are two methods to connect the target board with the burning EVK.

- a) Connect the target board with the burning EVK via USB interface directly, as shown below. This connection method only applies to target board with USB interface, e.g. a dongle board.



Figure 4 Connect target board with burning EVK via USB

- b) Connect the target board with the burning EVK via Swire (Single wire) interface, as shown below.



Figure 5 Connect target board with burning EVK via Swire

Please refer to Telink document “AN_18010500_User Guide for Telink Burning EVK TLSR8266BR56” for the detailed guide of TLSR8266BR56.

After connecting the target board to PC via USB method or burning EVK method, there are two methods to download firmware into the target board, which respectively correspond to the two hardware connection methods above.

2.1.2 Download FW into target via USB mode

If the target board is directly connected to PC via USB method, please follow the guide in this section to download firmware into specific flash space of the target board via USB mode.

Step1: Select chip type of the target board, e.g. 8255 (default option).



Figure 6 Select chip type

Step2: Select download mode as “USB”.

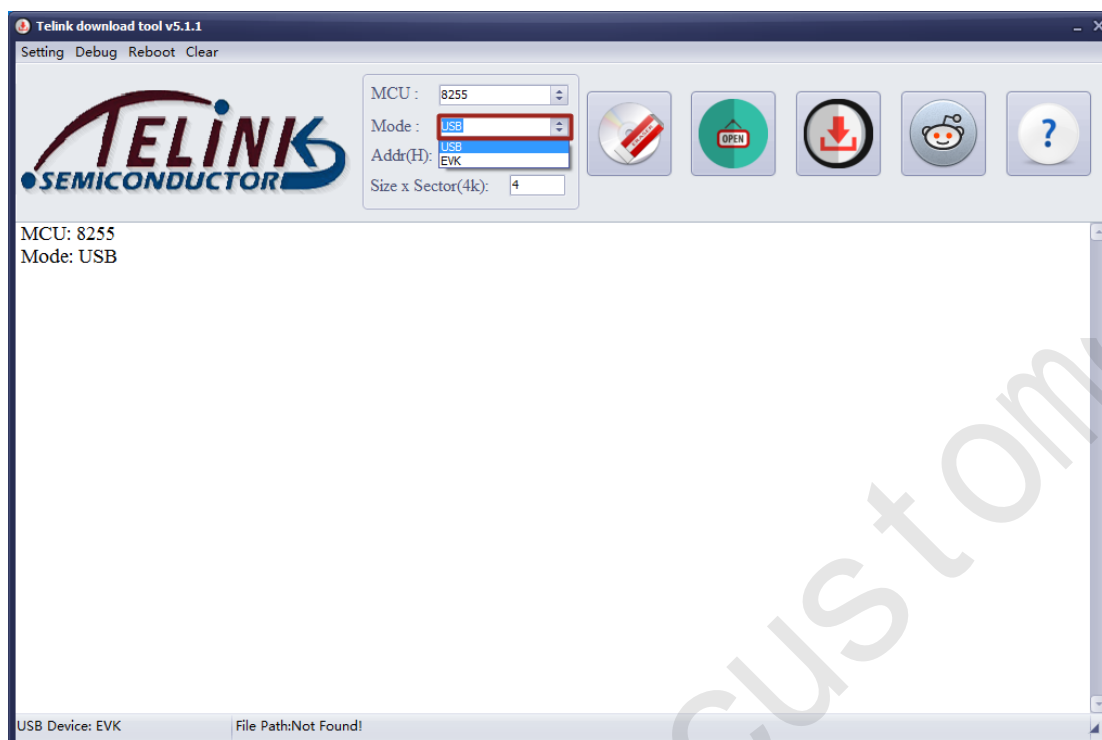


Figure 7 Select download mode as “USB”

Step3: Set the offset of flash starting address for target firmware, e.g. 0x000000 (default option).

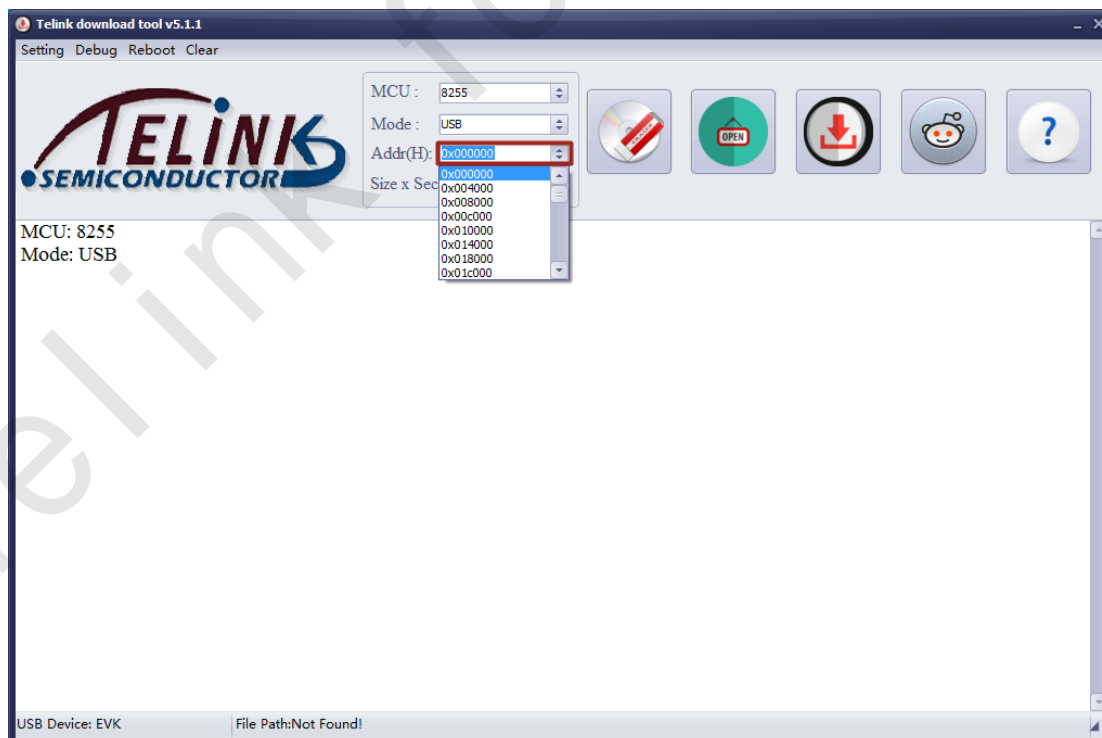



Figure 8 Select flash starting address offset

Step4: Select the target firmware file to be downloaded into the target board.

Click the “OPEN” button  on the main interface to open the file select window.

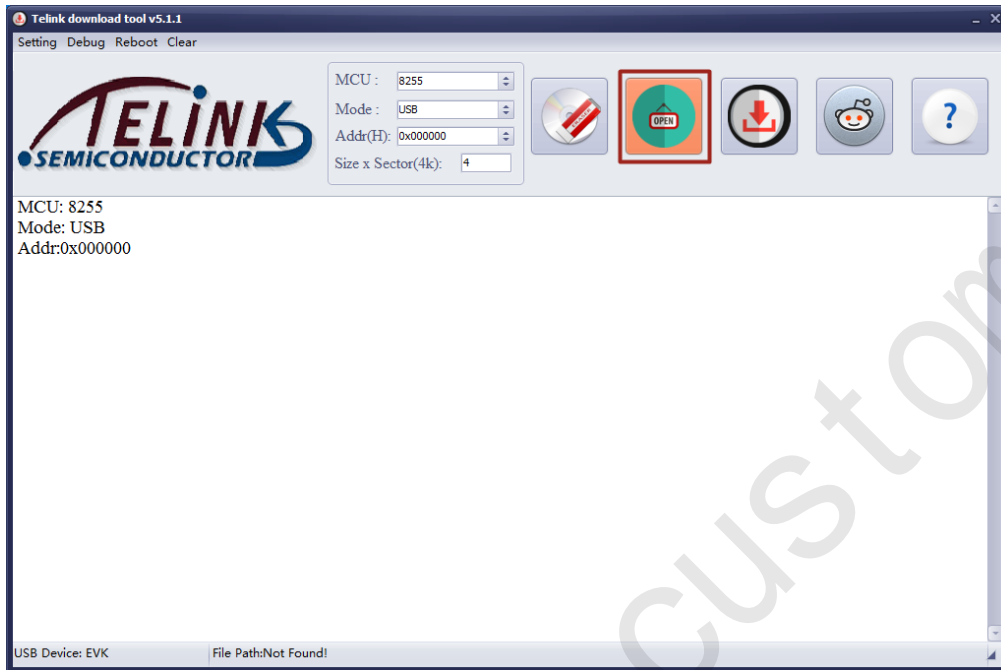


Figure 9 Open file select window

On the file select window, select the target bin file (e.g. GPIO_Demo.bin) and then click the “Open” button. The file path will be available at the bottom of the main interface.

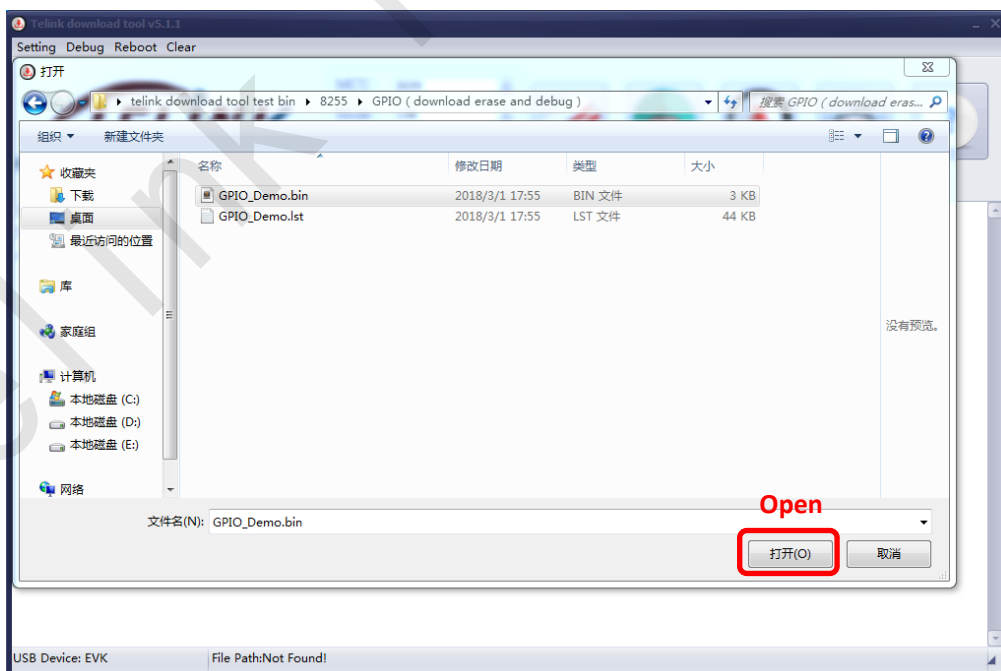


Figure 10 Select target file

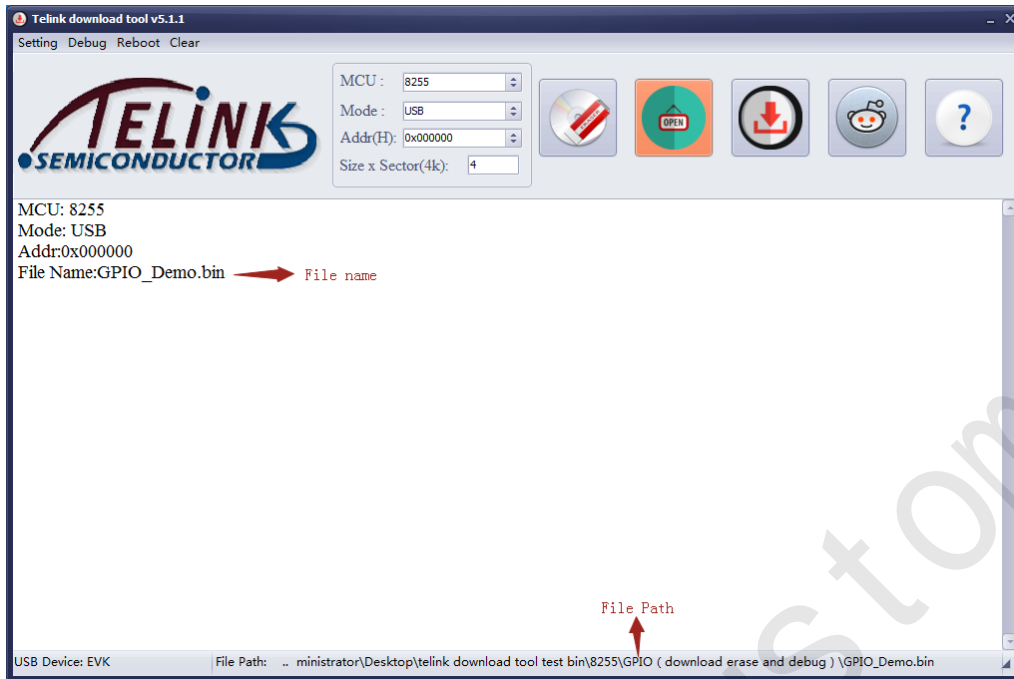



Figure 11 Log information

Step5: Download the selected file into the target board.

By clicking the “Download” button , the selected firmware file will be downloaded into the specified flash space of the target board. The log window will indicate corresponding log information, as shown below.

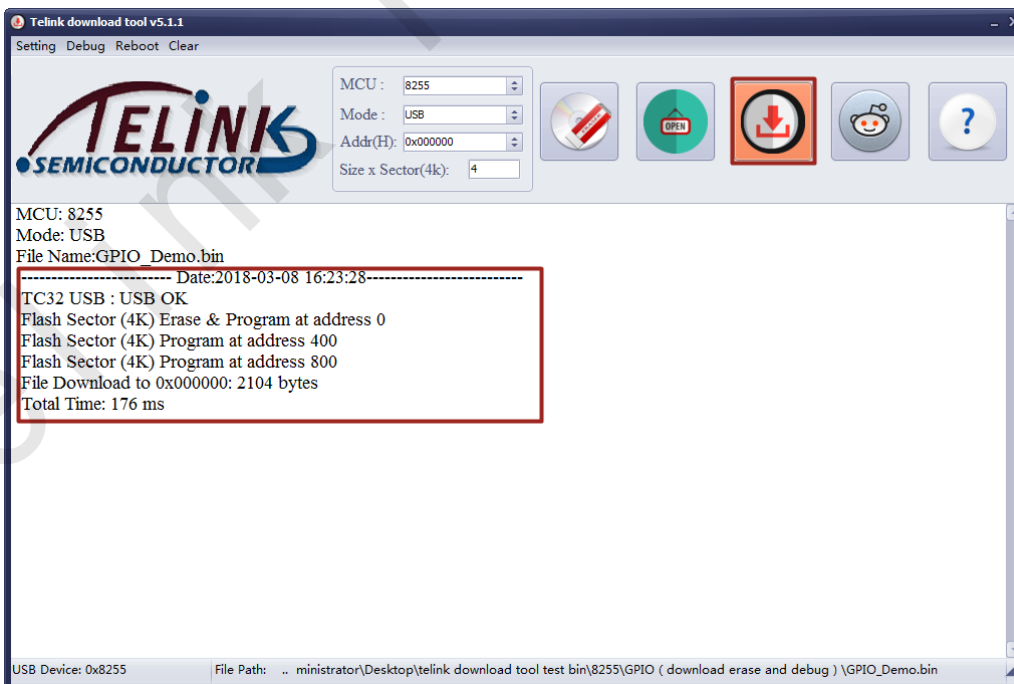


Figure 12 Download FW via USB mode

2.1.3 Download FW into target via burning EVK mode

If the target board is connected to PC via burning EVK method, please follow the guide in this section to download firmware into specific flash space of the target board via burning EVK mode.

Step1: Select chip type of the target board, e.g. 8255 (default option).

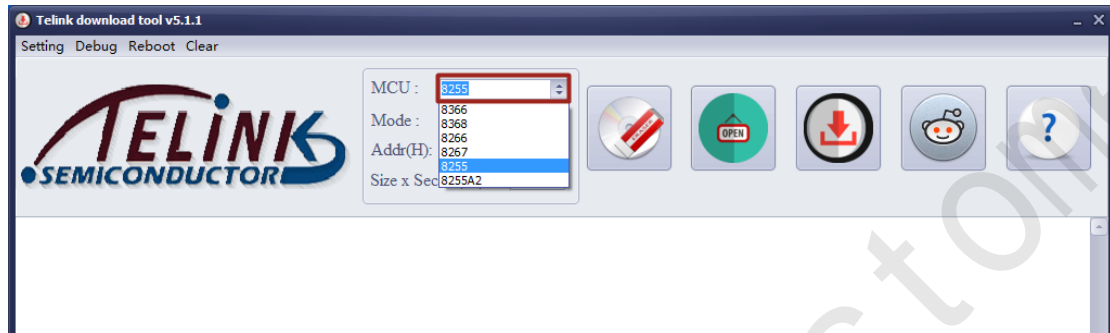


Figure 13 Select chip type

Step2: Select download mode as “EVK”.

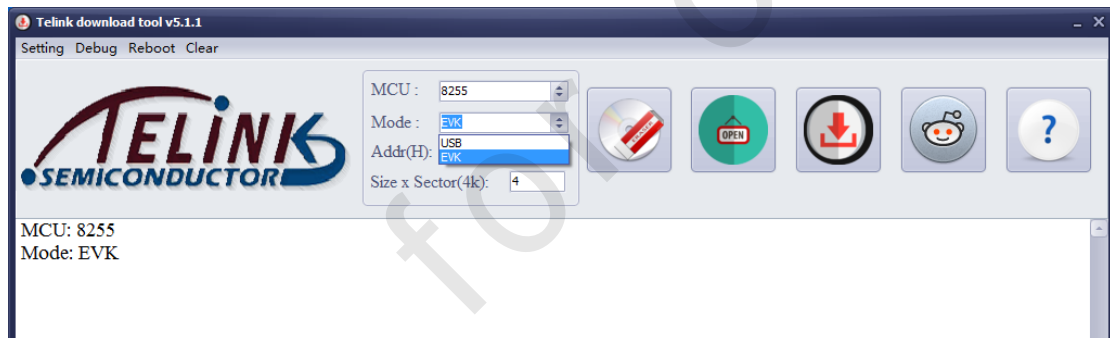


Figure 14 Select download mode as “EVK”

Step3: Set the offset of flash starting address for target firmware, e.g. 0x000000 (default option).

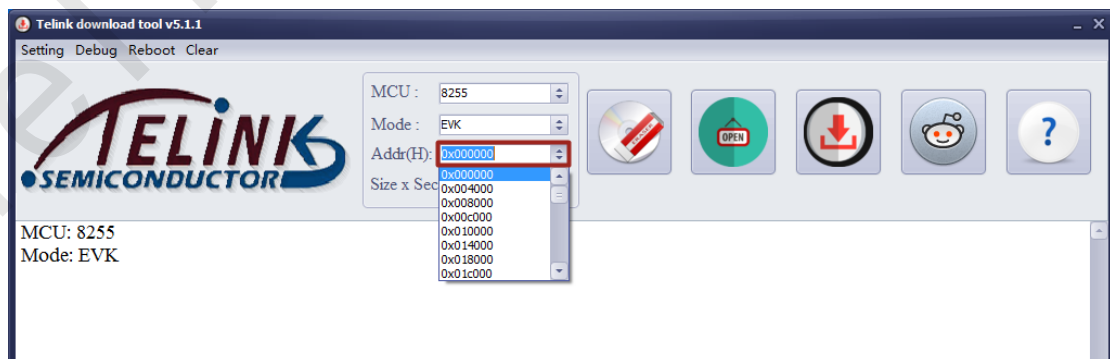



Figure 15 Select flash starting address offset

Step4: Select the target firmware file to be downloaded into the target board.

Click the “OPEN” button  on the main interface to open the file select window. On the file select window, select the target bin file and then click the “Open” button. The file path will be available at the bottom of the main interface.

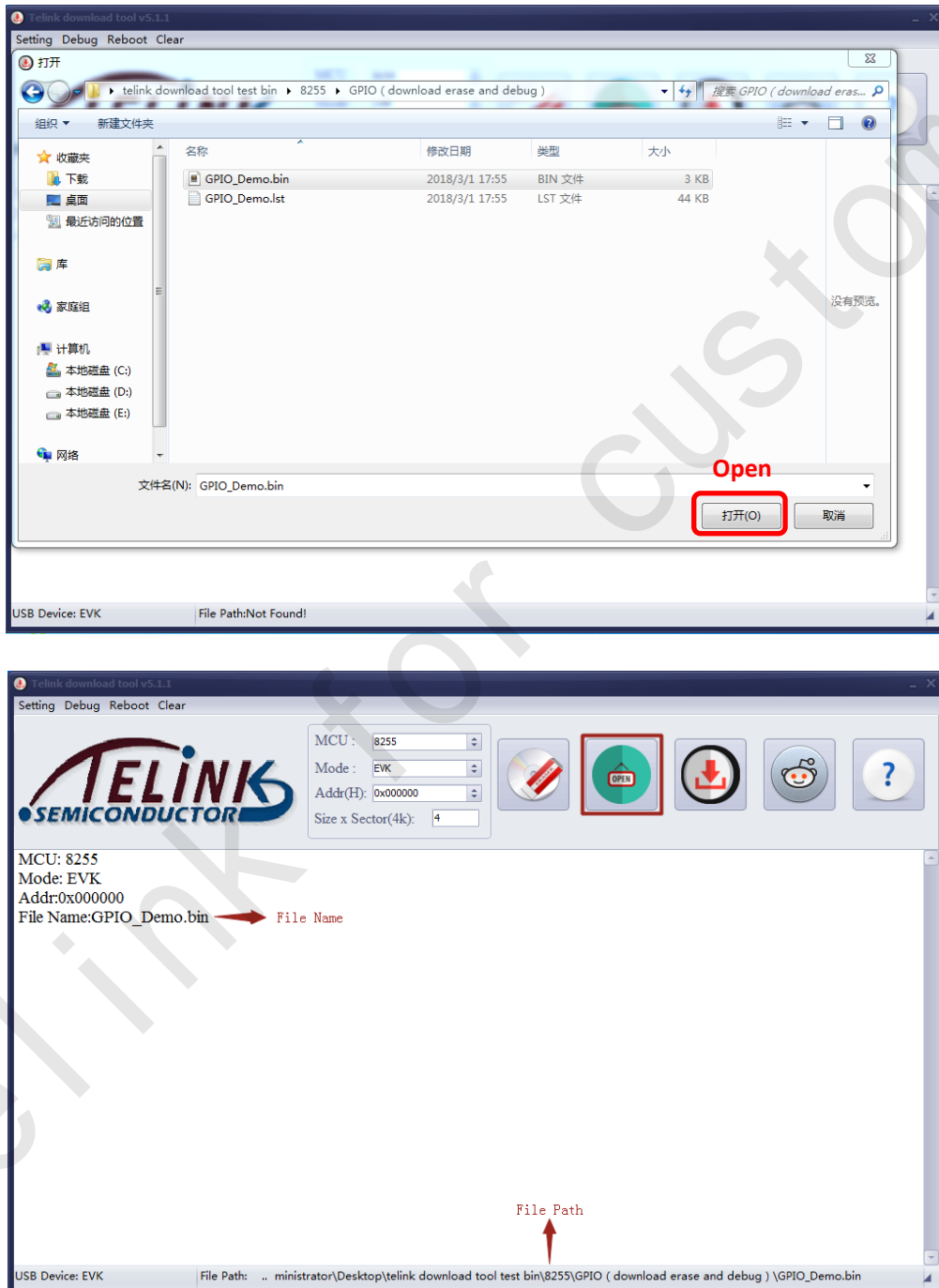



Figure 16 Select target file

Step5: Download the selected file into the target board.

By clicking the “Download” button , the selected firmware file will be downloaded into the specified flash space of the target board. The log window will indicate corresponding log information, as shown below.

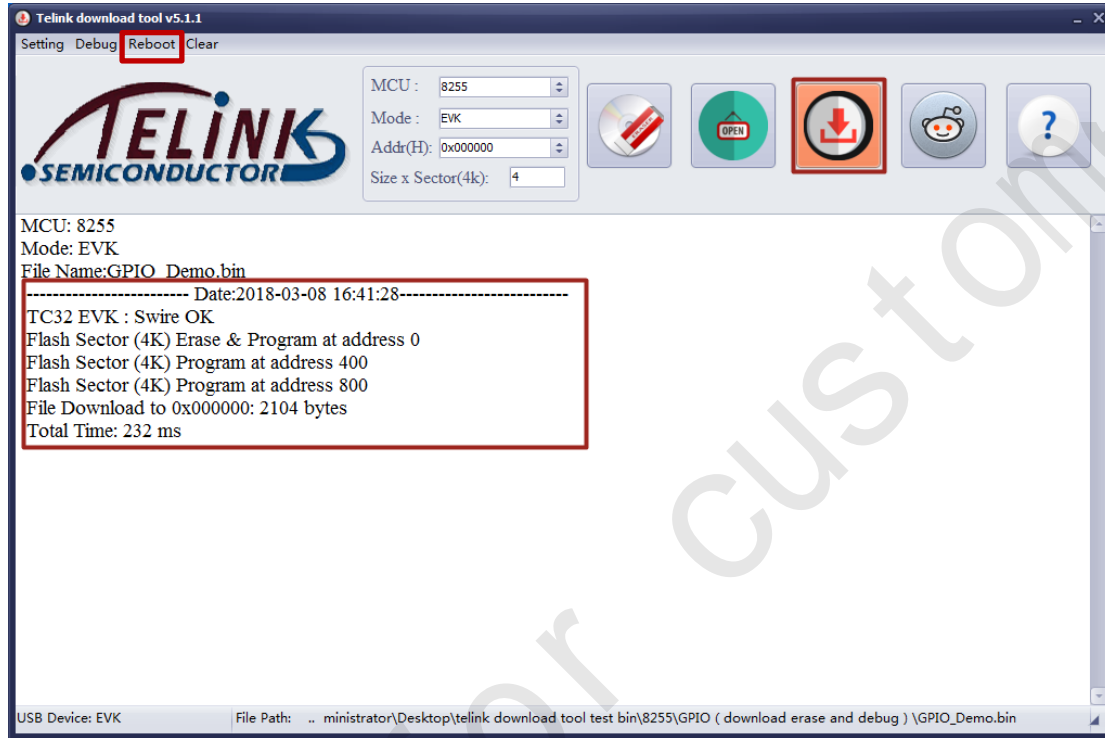


Figure 17 Download FW via burning EVK mode

After downloading file, to make MCU boot and run, user can directly click the “Reboot” icon at the top left corner of the download_tool or press the combination keys “Alt + R” of the keyboard.

2.2 Flash sector erase

The “Flash sector erase” function is used to erase specific flash space starting from specific address in the unit of sector (4kB).

For example, to erase 4kB flash space starting from address 0x004000, user can follow the steps below.

Step1: Select the starting flash address to be erased, e.g. 0x004000 (default option: 0x000000).

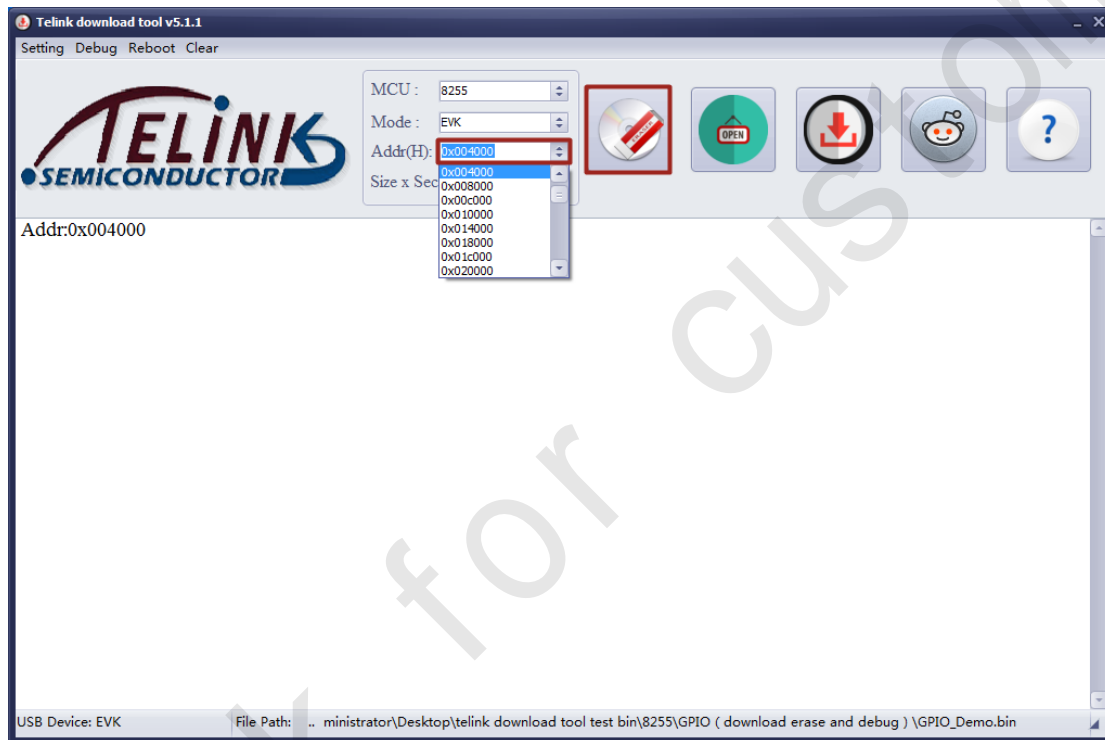


Figure 18 Select start address

Step2: Select the flash size to be erased in the unit of sector (4kB), e.g. 16*4kB (default option: 4*4kB).

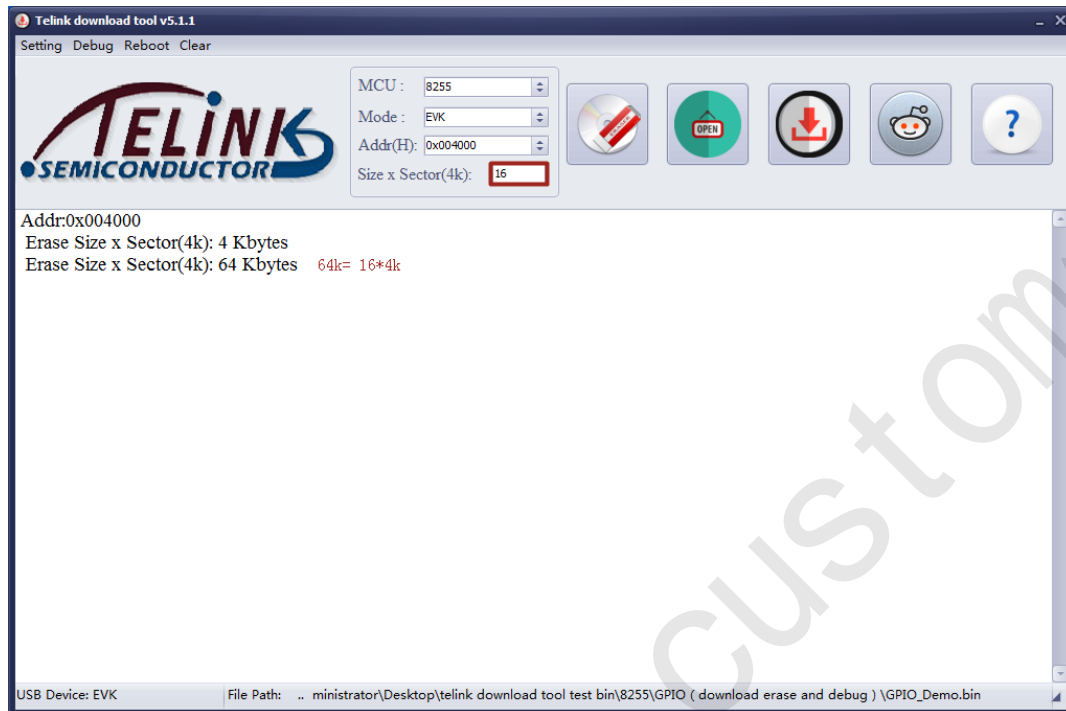


Figure 19 Set erase size

Step3: Click the “Erase” button  to start flash erasing.

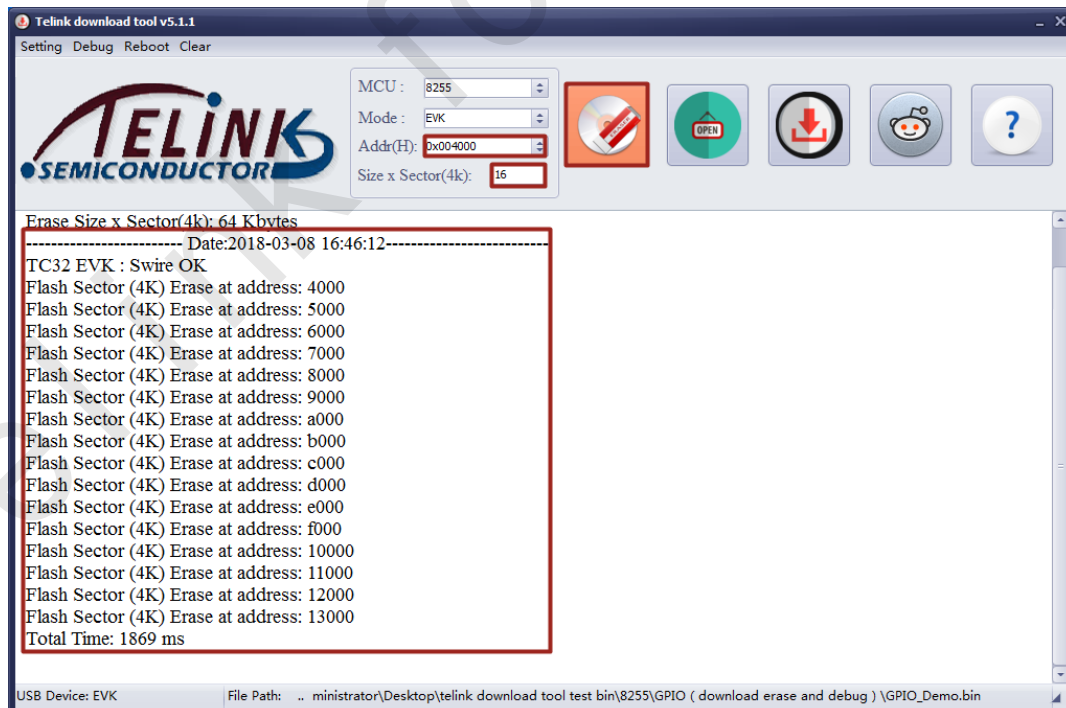




Figure 20 Erase 64kB flash space starting from 0x004000

2.3 Change “Setting”

By default, the “Setting” option is set as “Flash”, i.e. by clicking the “Download” button , the target firmware will be downloaded into flash.

User can also change the “Setting” to “SRAM”. In this case, by clicking the “Download” button , the target firmware will be downloaded into SRAM. For the TLSR8255, the starting SRAM address for target firmware is 0x040000. For other SoCs, the starting SRAM address for target firmware is 0x008000.

After the target file is downloaded successfully, the target board will run specific firmware correspondingly.



Figure 21 Change “Setting” to “SRAM”

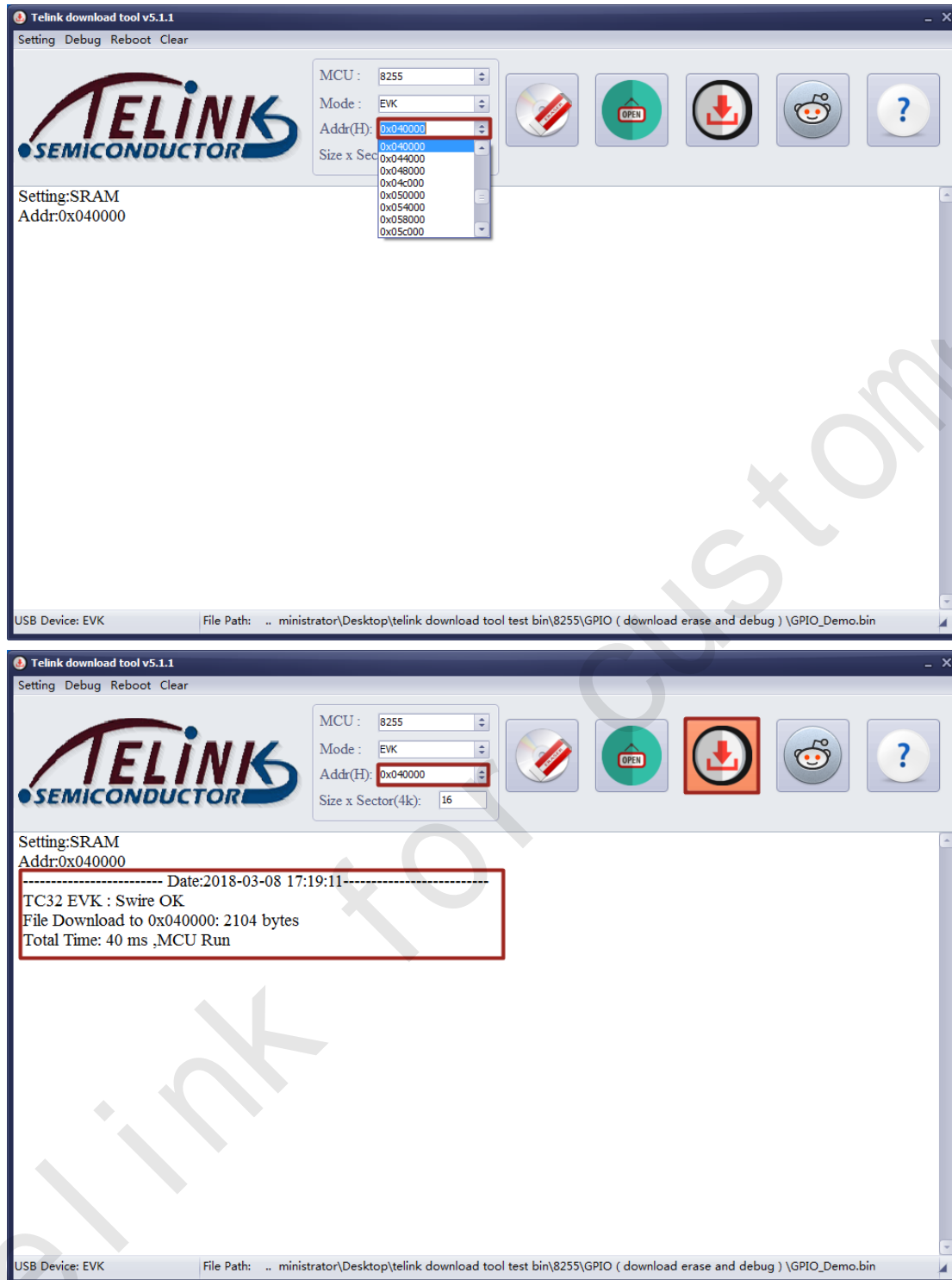



Figure 22 Change downloading address to SRAM 0x040000

2.4 Activate MCU

The function of “Activate MCU when firmware downloading failed” only applies to burning EVK method (i.e. USB method is not supported).

When firmware burning fails, ensure the target board is connected with burning EVK via Swire, and click the “Activate” button  to enable this function to activate the MCU.

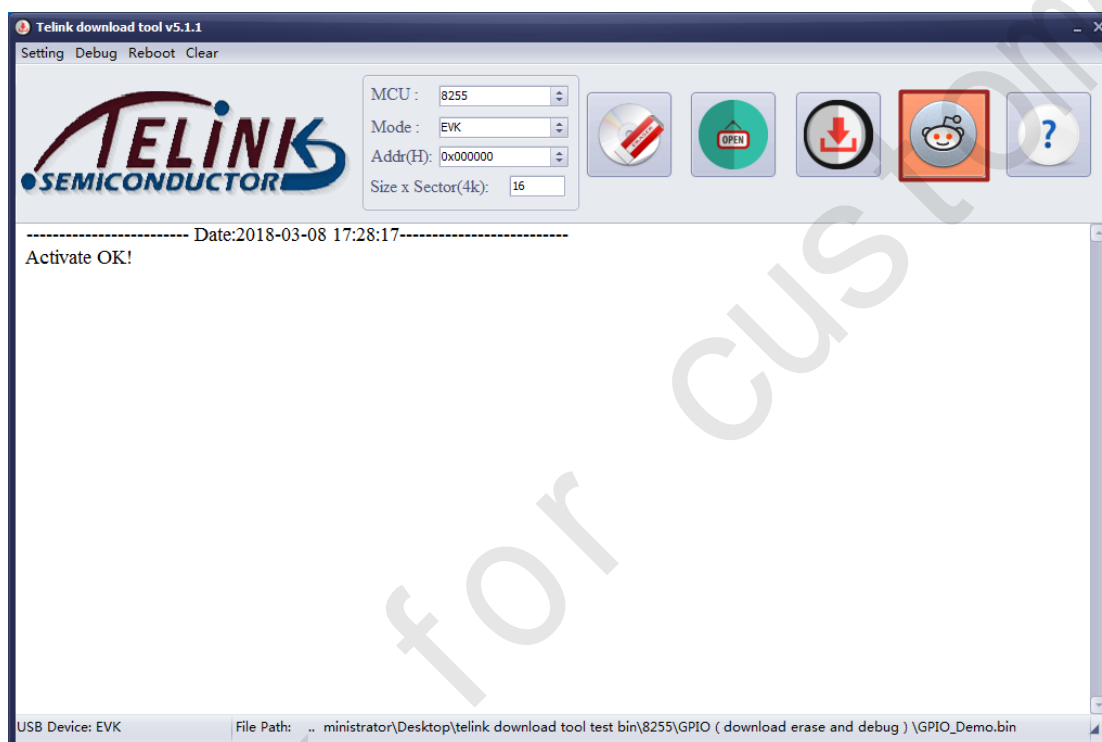


Figure 23 Activate MCU

2.5 Debug

After MCU starts running, by clicking the “Debug” icon at the top left corner of the download_tool or press the combination keys “Alt+D”, user can open the Tdebug tool so as to debug the MCU.

***Note:** To use the Tdebug tool, user must ensure the “.lst” file and the “.bin” file are placed under the same directory.

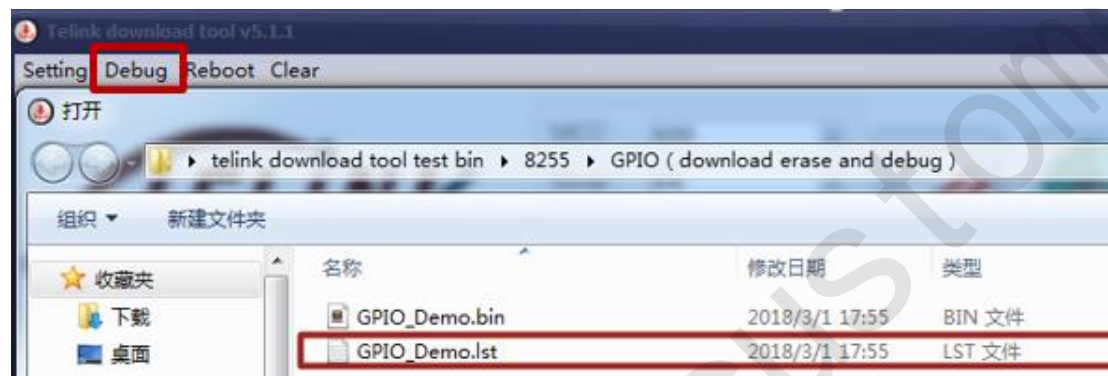



Figure 24 Debug MCU

For more details about debugging, please refer to the document “Telink Tdebug User guide”.

2.6 Help

By clicking the “Help” button  on the main interface, a “Help” window will pop up to show hint information, as shown below.

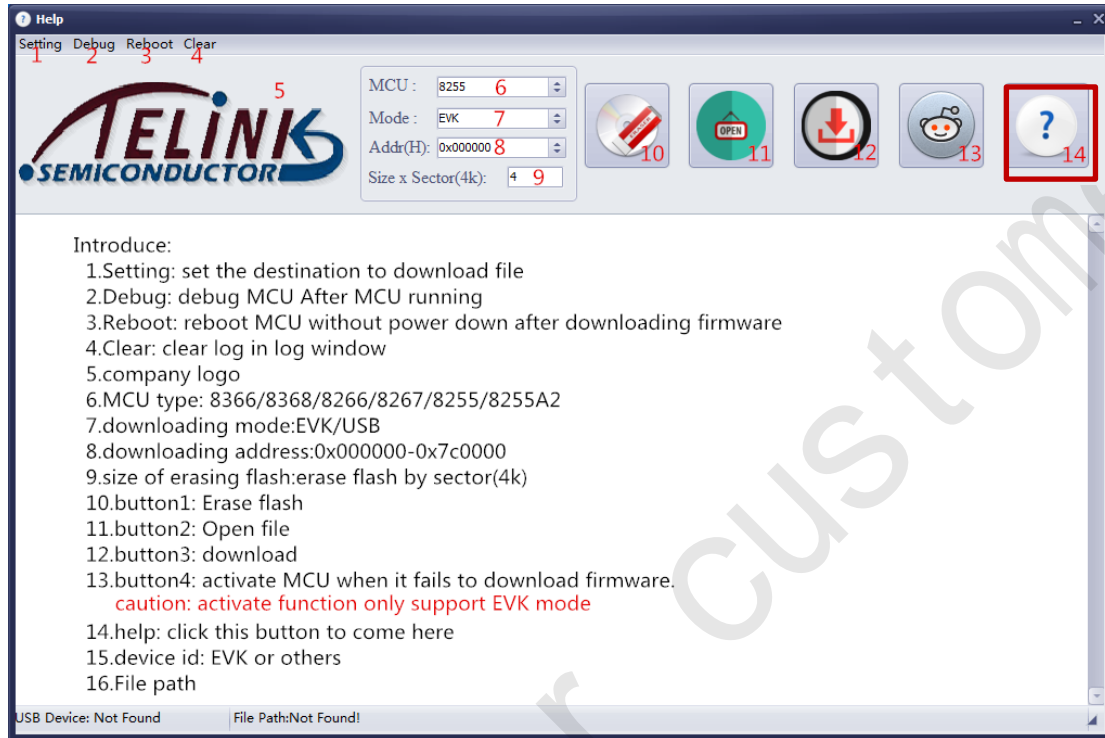


Figure 25 Help window