

aFlasher8

Flash Download Program for
E-OCD II Debugger

User's Manual

Version 1.0.1

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1 Overview

1.1 aFlasher8 Program

Flash download program 'aFlasher8' supports users who use E-OCD II Debugger to program ABOV 8051 series devices. The users can select a device to load and download a corresponding HEX file.

The E-OCD II Debugger is an On-Chip Debugger and Programmer for ABOV Semiconductor's 8051 series. It can be used as a debugger, but it can be also used as a simple on-board programmer for the 8051 devices. ABOV provides more information of the E-OCD II Debugger in the E-OCD II Hardware Manual that is available at ABOV's website: www.abovsemi.com

The E-OCD II Debugger has the main features as listed below:

- Availability for in-system programming
- Two types of valid power sources: external power and internal power.
- Automatic detection of the type of the E-COD II Debugger when connected.
- If the power consumption of a Target Board is less than 50mA, USB Power can be used. However, if the power consumption of the Target Board exceeds 50mA, external power must be used instead of the USB Power.

1.2 System Requirements

The aFlasher8 is compatible with the following operating systems:

- Microsoft Windows Vista
- Microsoft Windows 7
- Microsoft Windows 8 & 8.1
- Microsoft Windows 10

This software can be run on a basic PC and does not require powerful specifications. However, the PC performance affects the USB communication speed.

2 Installation

2.1 Program Download

Users can download the installer at the ABOV's website. It is ideal for users to always have the latest version of the software, as ABOV continues to add new devices and features.

Setup file's name shows the version number and generated date. For example, the setup file "Setup_aFlasher8_V1.234.56(201012).exe" indicates the following information in the file name:

- The installer is for the aFlasher8 programmer S/W package.
- Its version is 1.234.56. Of these version numbers, each number divided by a period has the meaning listed below:
 - Major version = 1
 - Minor version = 234,
 - Patch version = 56
- It was released on October 12, 2020.

Once the aFlasher8 application is launched, it searches for newer versions from the ABOV website. When it finds a newer version, it informs to users.

2.2 Program Installation

Once the program installation is finished, users can see the message shown in Figure 1. Users can run the installer without demanding software license nor a driver.

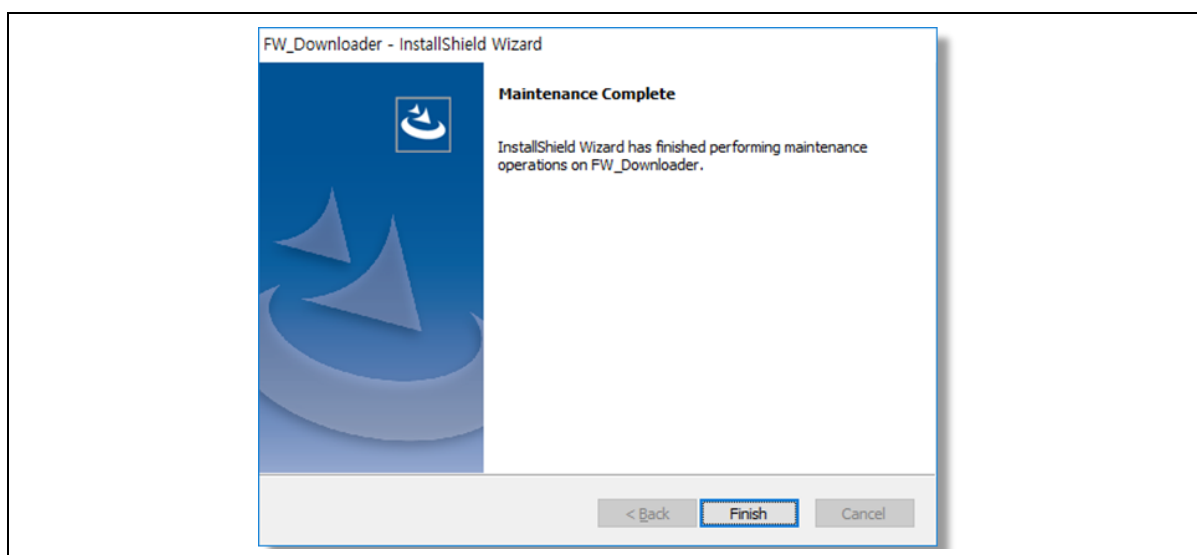


Figure 1. Run Downloaded Installer

3 How to Use aFlasher8 Program

3.1 Overview

First when users start the aFlasher8 program, the users can see the Start menu as shown in Figure 2. There are several functions supported by the aFlasher8 as presented in the Start menu and listed below:

- Device Selection & Load HEX file
- Status Information
- Power Selection
- Device Programming
- Hex Viewer

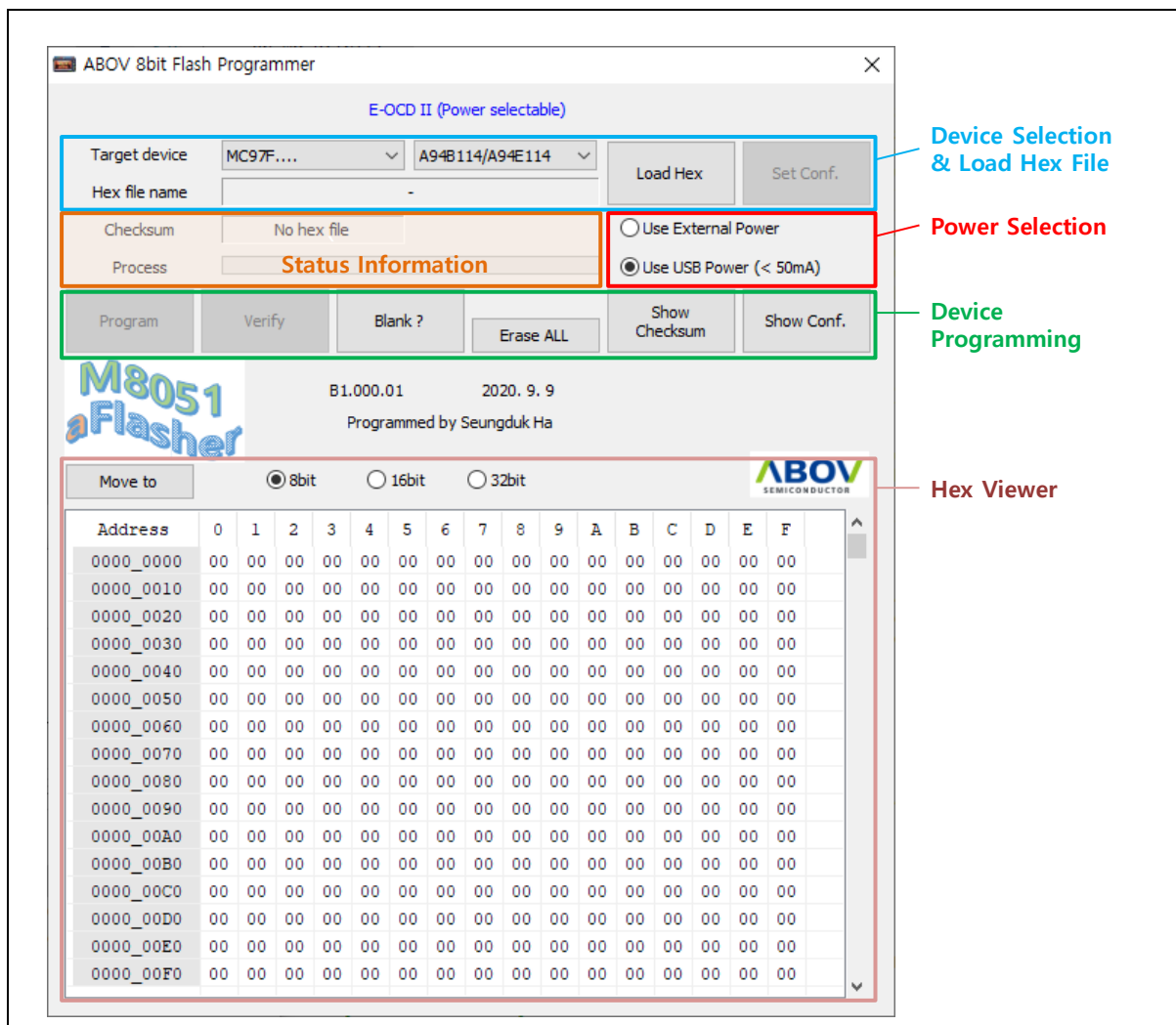


Figure 2. aFlasher8 Program

3.2 Device Selection and Load HEX File

3.2.1 Target Device Series Selecting

Users must select a target device before loading a HEX file. To select a desired device, users must select a series first and then select a device in a 'Target device' field.

Figure 3 shows how to select a series that includes a target device. As shown in the figure, select a series that includes the target device from the 1st drop down menu. Then, select the target device in the 2nd drop down menu.

Since the lists of the series and devices vary depending on the version of the program, it is recommended that users download and install the latest version.

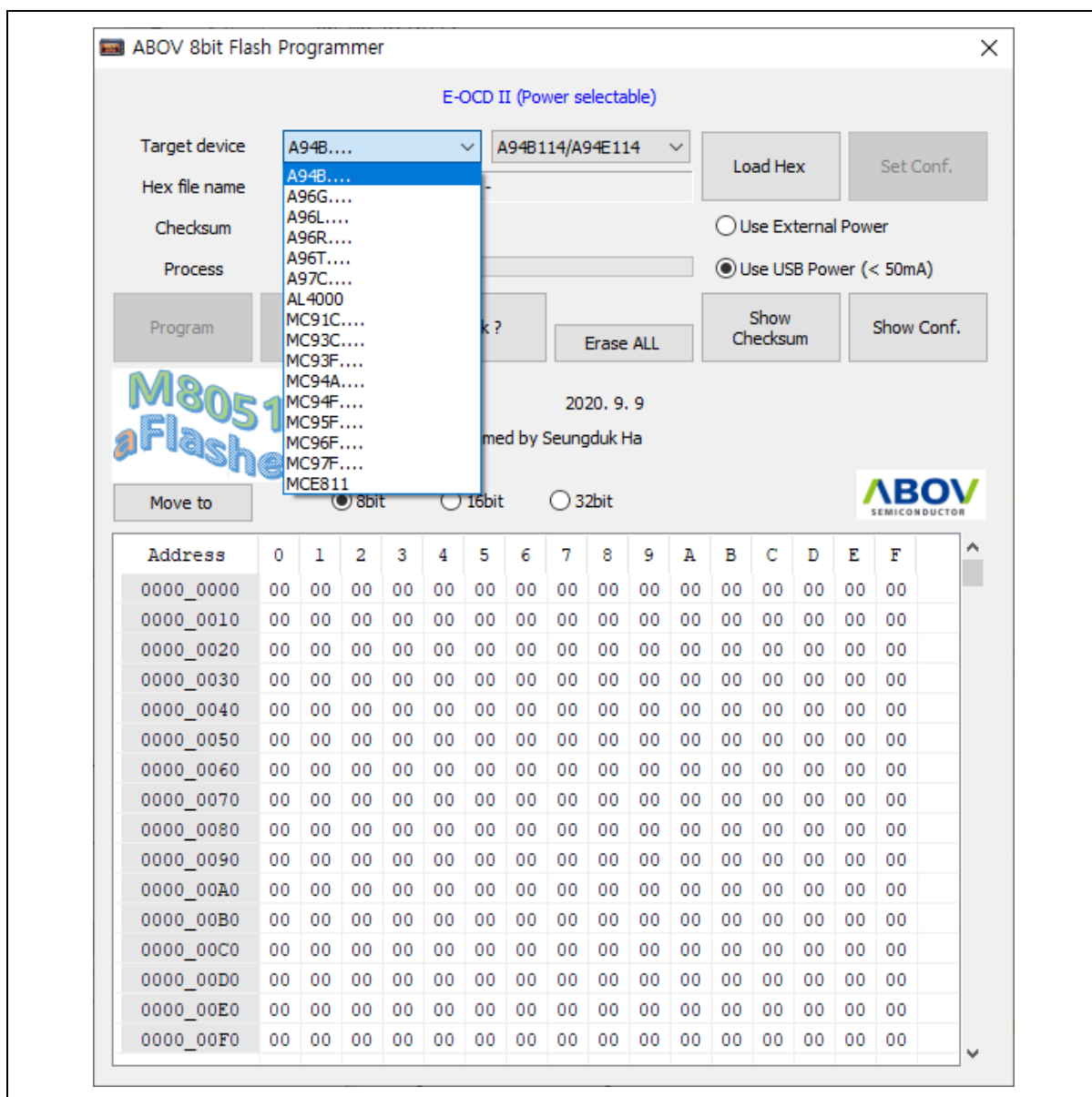


Figure 3. Target Device Series Selection

3.2.2 Device Selection

As shown in Figure 4, users can select the target device from the 2nd list of the 'Target device' field. The 2nd list presents devices that are included in the selected series.

For example, if a user want to select a MC97F2664 device as a target device, the user must select 'MC97F...' first in the 1st drop down menu, and then select 'MC97F2664' in the 2nd drop down menu as shown in Figure 4.

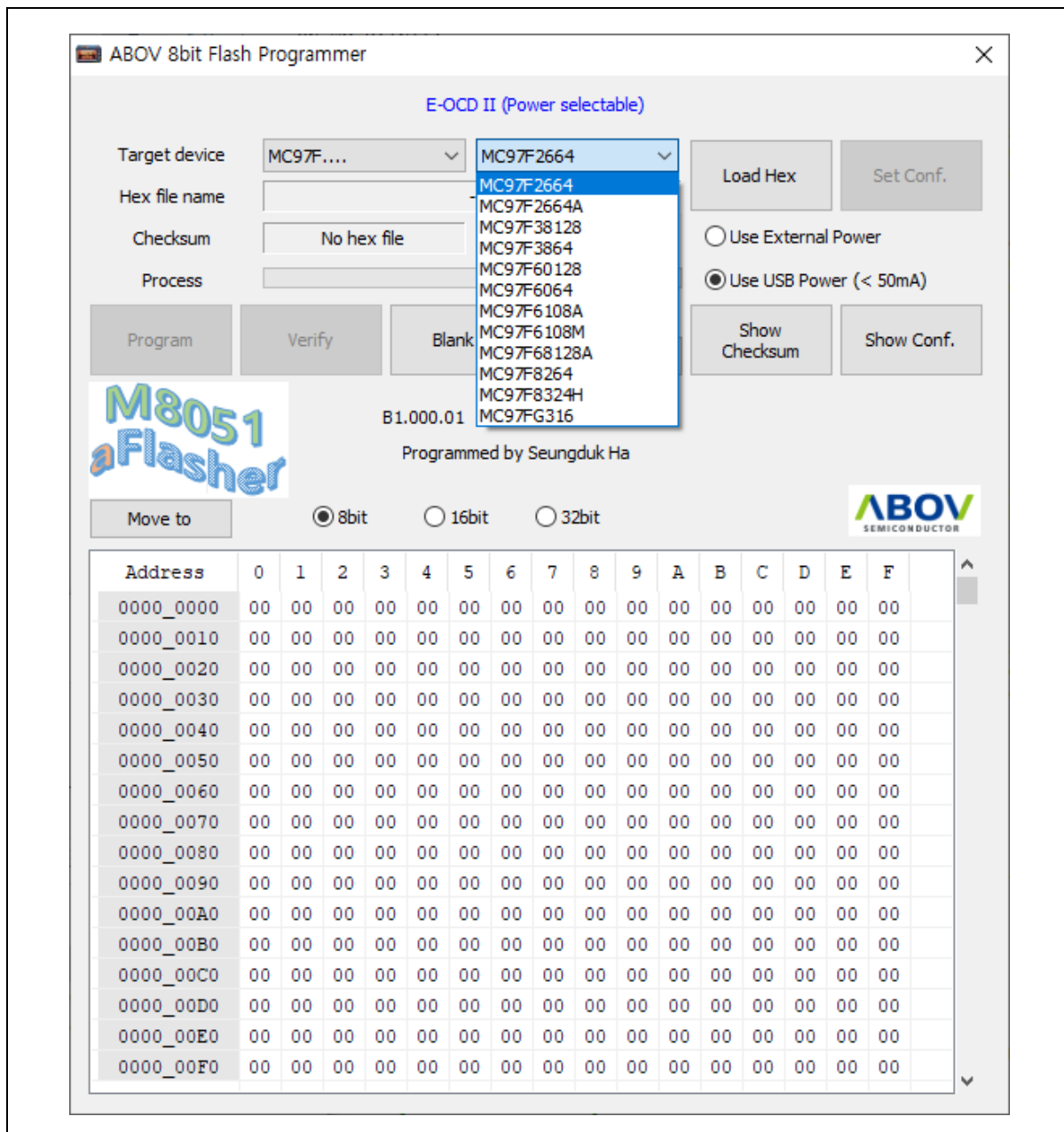


Figure 4. Device Selection

3.2.3 Load HEX File

Once a target device is selected, it is time to load a HEX file that a user want. As shown in Figure 5, use the 'Load Hex' button to load a HEX file.

Since a HEX file does not have the Device Configuration Data, users need to click on the 'Set Conf.' button if they want to insert the Device Configuration Data in the HEX file or edit.

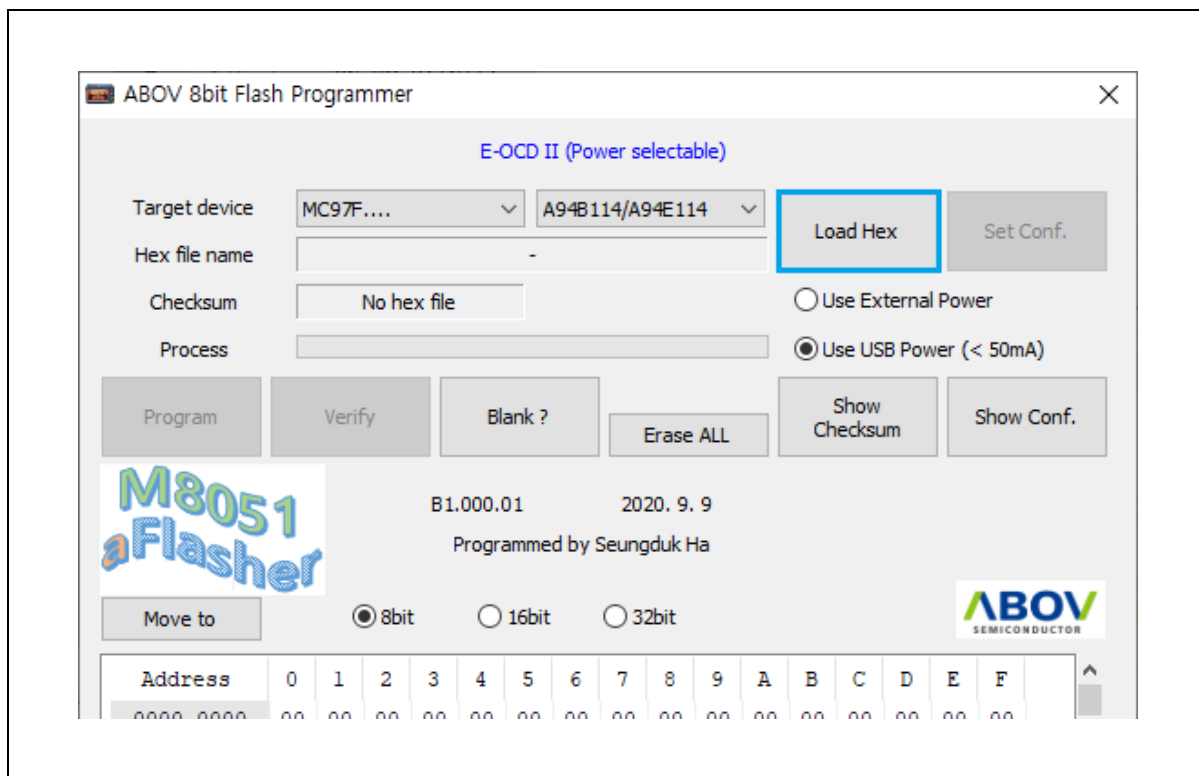


Figure 5. Load HEX File

3.2.4 Set Configuration Data

As described in the previous section, a HEX file does not have the Device Configuration Data and users need to click on the 'Set Conf.' button to insert the Device Configuration Data in the HEX file or edit the file.

Users can learn more of the settings by reference of a User's Manual of the corresponding device.

Figure 6 shows an example window when the 'Set Conf' button is pressed for A94B114.

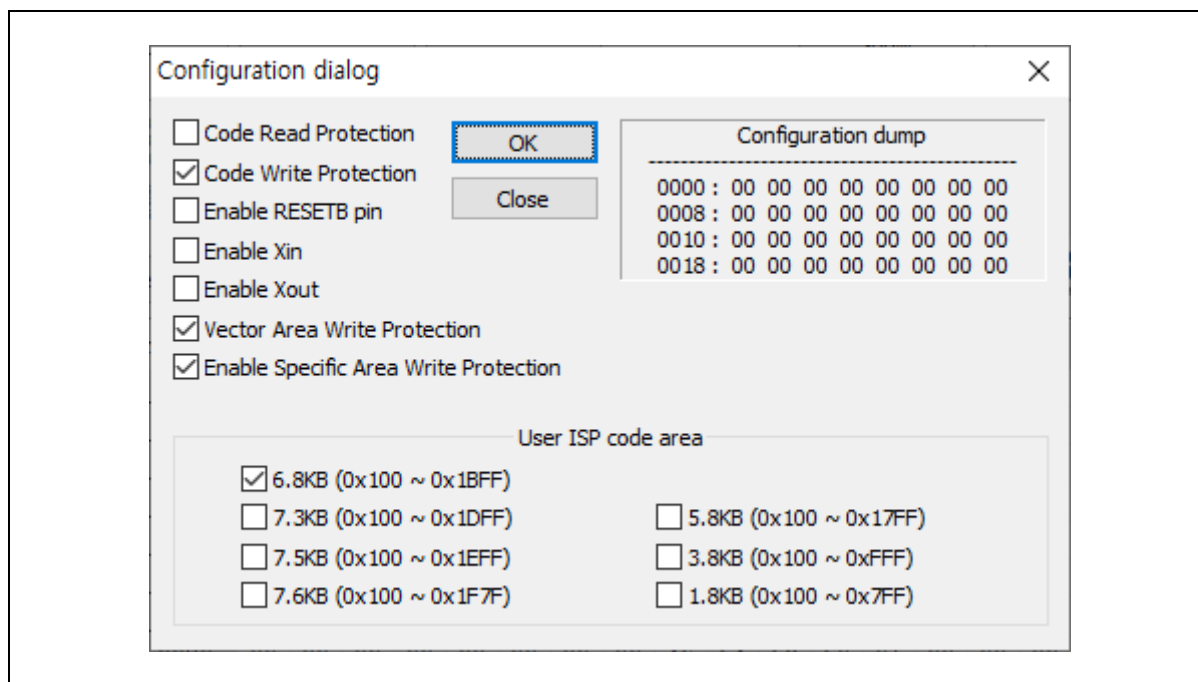


Figure 6. Example (A94B114)

3.3 Status Information

aFlasher8 program shows three information of the HEX file that a user loaded. The three information are as follows:

- HEX file name: It shows a name of a HEX file that was loaded most recently.
- Checksum: It shows a Checksum Value of a HEX file that was loaded most recently. By checking this value, users can confirm whether the HEX file was loaded normally.
- Process: It shows the current process that aFlasher8 program is performing.

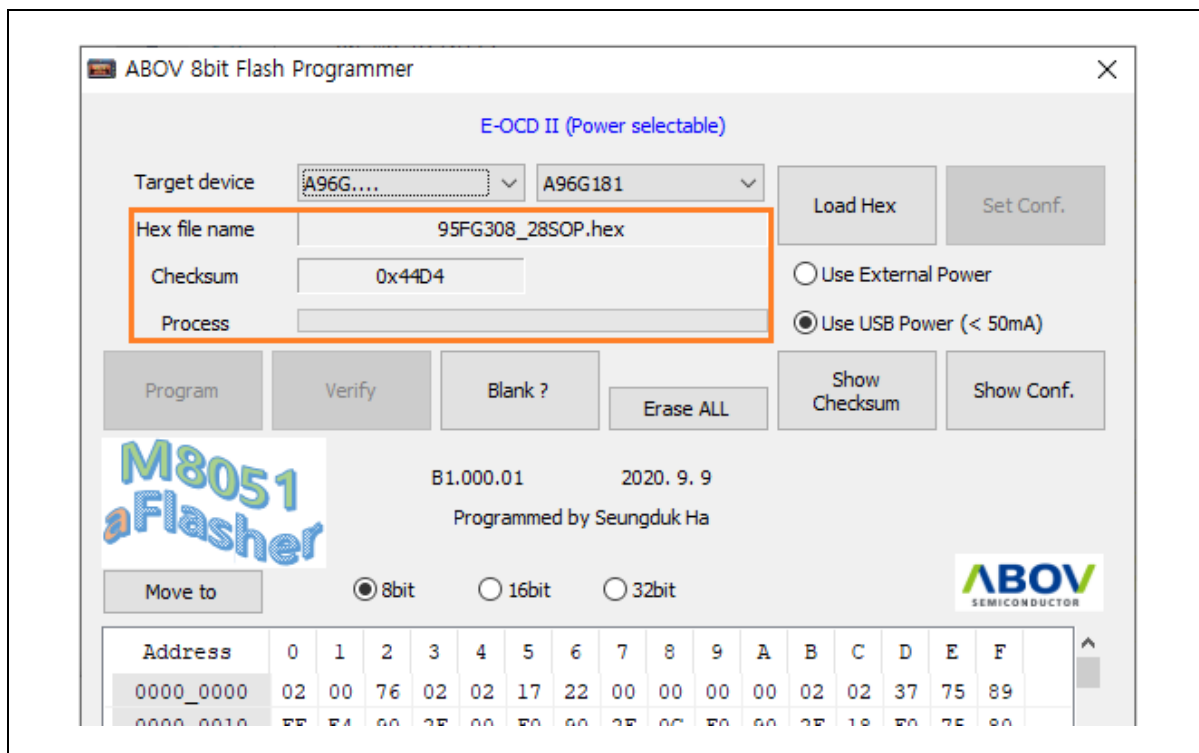


Figure 7. Status Information

3.4 Power Source

When current consumption of a target system exceeds 50mA, users must select the 'Use External Power' to connect external power. That means, if the current consumption of a target system exceeds the current capacity that E-OCD II Debugger supports, external power must be used.

A target device with less power consumption than 50mA can use USB power, and it can use external power too.

3.4.1 USB Power

Select 'Use USB Power', which is marked by a red box in Figure 8. While performing the Programming and Verification processes, the E-OCD II Debugger automatically proceeds ON/OFF sequence to allow easy Programming.

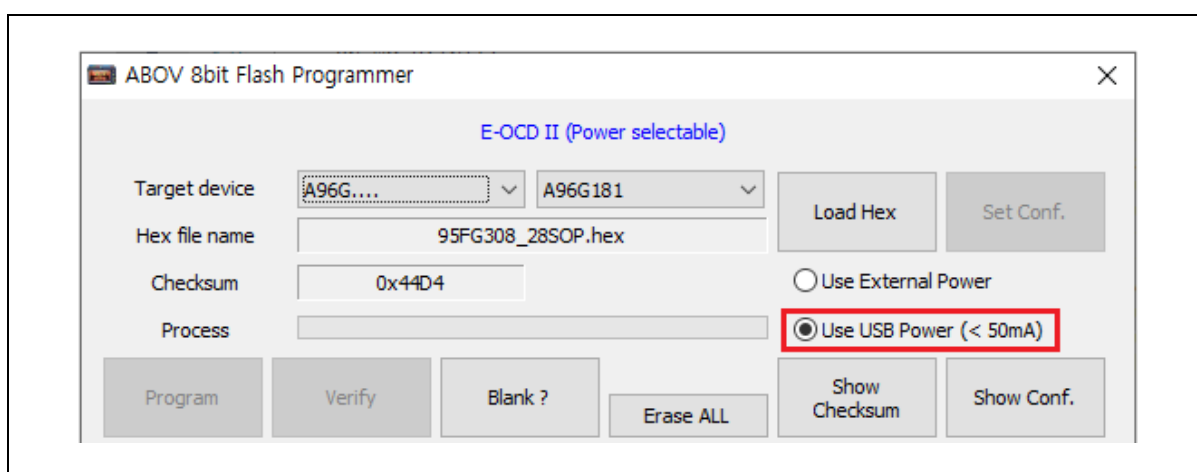


Figure 8. Select 'Use USB Power'

3.5 Device Programming

3.5.1 Button 'Program'

Click this button to start programming a target device. This button remains disabled until a HEX file is loaded.

The programming sequence is as follows:

1. Erase all contents of the target device.
2. Send HEX data to program the target device.
3. Verify the target device for each byte.
4. Send device configuration to program the target device if available.
5. Verify the target device configuration bytes.

3.5.2 Button 'Verify'

Click this button to start verifying a target device checksum and configuration. This button remains disabled until a HEX file is loaded.

The verification sequence is as follows:

1. Verify the target device for each byte.
2. Verify the target device configuration bytes.

3.5.3 Button 'Blank?'

Using this button, users can check whether a target device is blank.

The blank sequence is as follows:

1. Verify whether the target device is blank or not.
2. Verify whether the target device configuration is blank or not.

3.5.4 Button 'Erase All'

Using this button, users can erase all contents of a target device. Since the button size is smaller than other buttons, it can be protected from accidental clicks.

The sequence is as follows:

1. Erase all contents of the target device.
2. Erase all contents of the target device configuration.

3.5.5 Button 'Show Checksum'

It shows a target device's checksum.

The sequence is as follows:

1. Read the target device each byte and calculate checksum.
2. Open checksum dialog box to show the value.

3.5.6 Button 'Show Conf (Configuration)'

It shows a target device's configuration.

The sequence is as follows:

1. Read target device's configuration.
2. Open a configuration dialog box to show settings, but it does not allow editing.

3.6 Hex Viewer

aFlasher8 Program provides a function of Hex Viewer as shown in Figure 9. The Hex Viewer is located in the low of the Start menu, and shows Hex Data and Configuration Buffer values of the HEX file (Code) that is loaded. Users can select a unit for the Hex Data and view it using the unit. The Hex Viewer is not edited to prevent keyboard inputs due to carelessness.

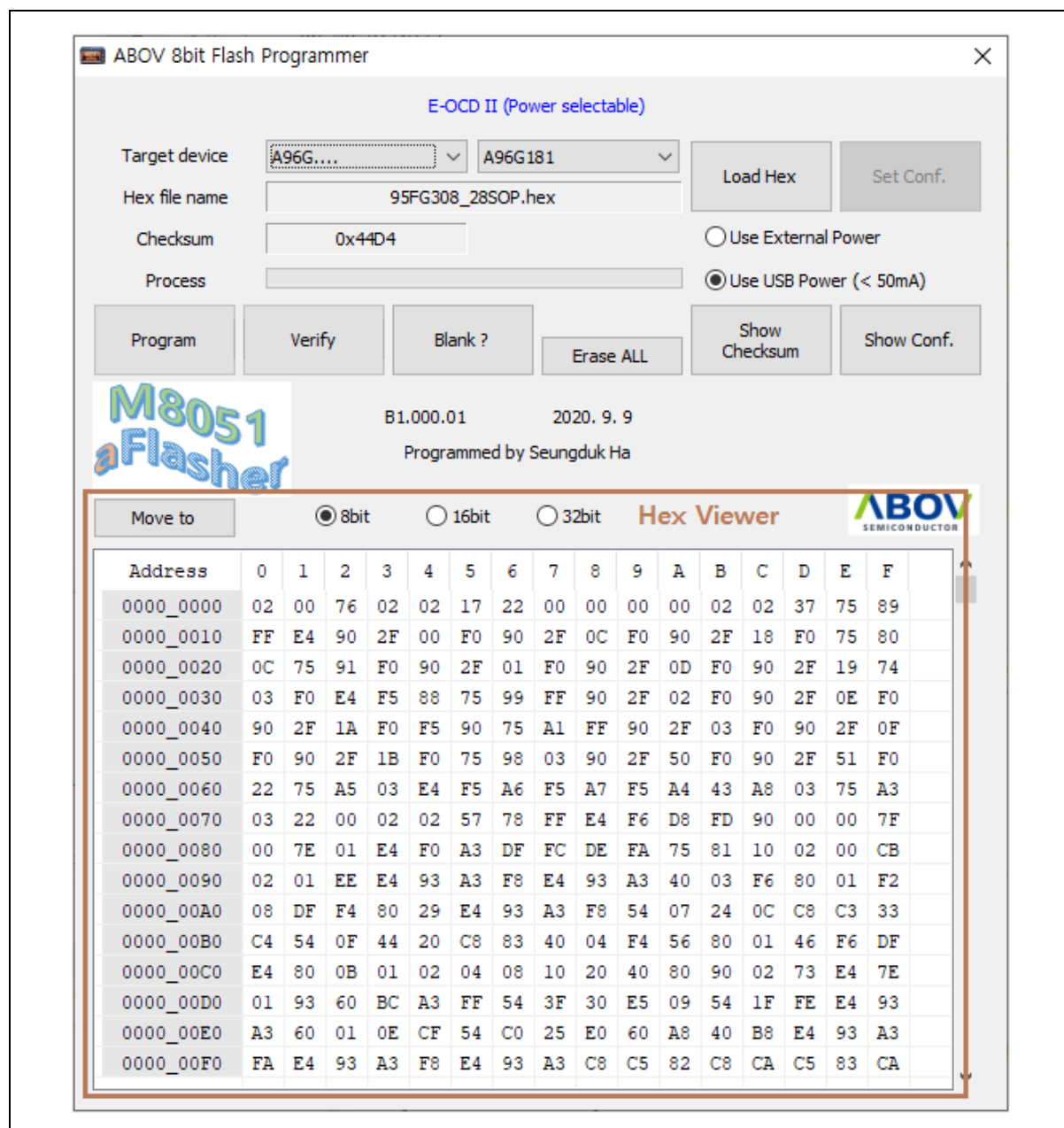


Figure 9. Hex Viewer

3.6.1 Button 'Move to'

On the Hex Viewer, users can move the Start address of screen output to the address that users want. To do this, click on the 'Move to' button.

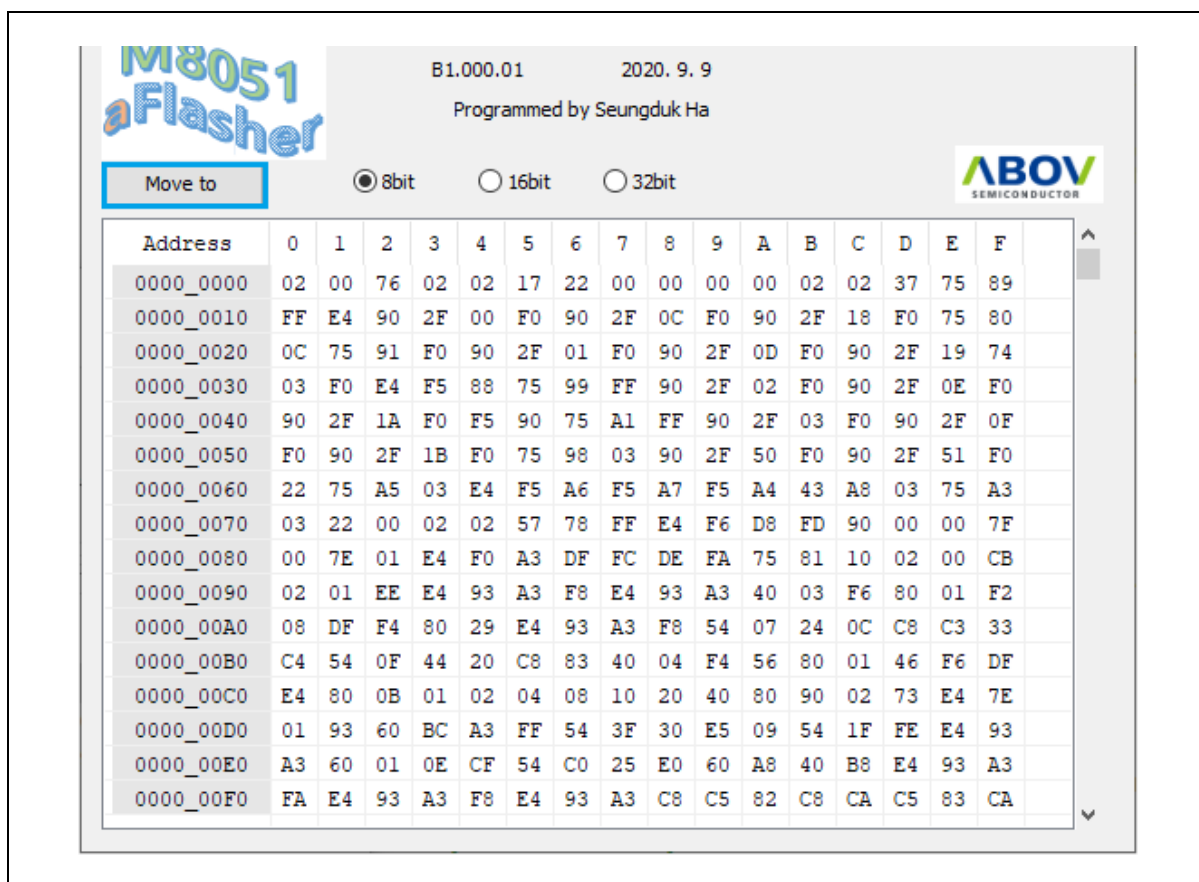


Figure 10. Button 'Move to'

When pressing the button, the 'Move to' dialog window displays on the screen. The address input value is 32-bit long by default.

On the Address input dialog window, the address input value is required to be divided into Upper 16-bit address and Lower 16-bit address as shown in Figure 11. After entering the address that users want, click on the 'OK' button.

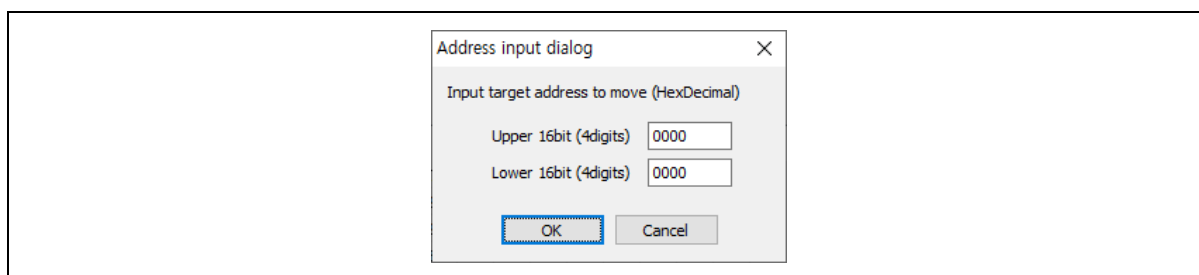


Figure 11. Dialog Window 'Move to'

3.6.2 Data Unit Selection

Users can select a Data Unit and use it to view the Code on the Hex Viewer. 8-bit, 16-bit, and 32-bit Data Units are available for the selection.

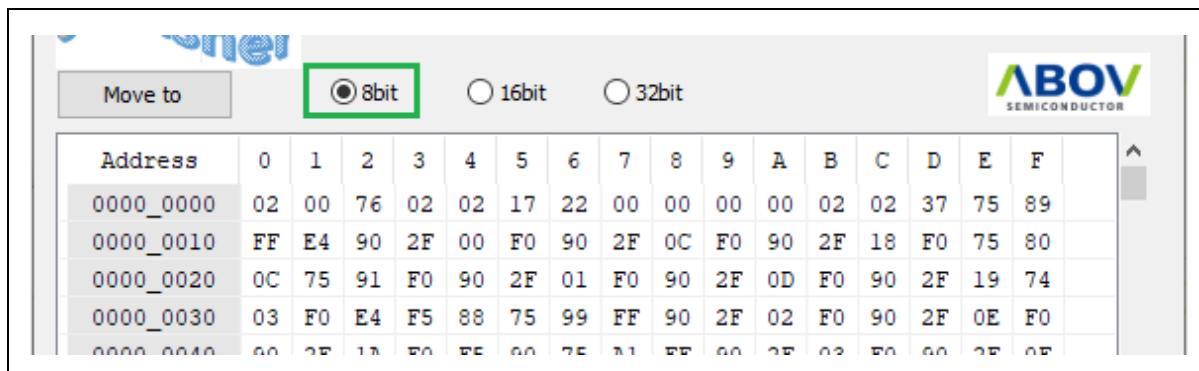


Figure 12. 8-bit Data Unit (Two Hex Digits)

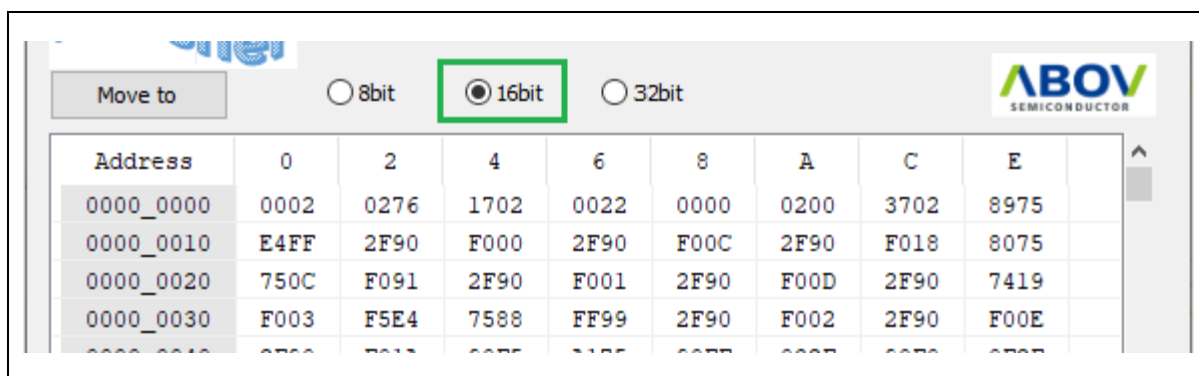


Figure 13. 16-bit Data Unit (Four Hex Digits)

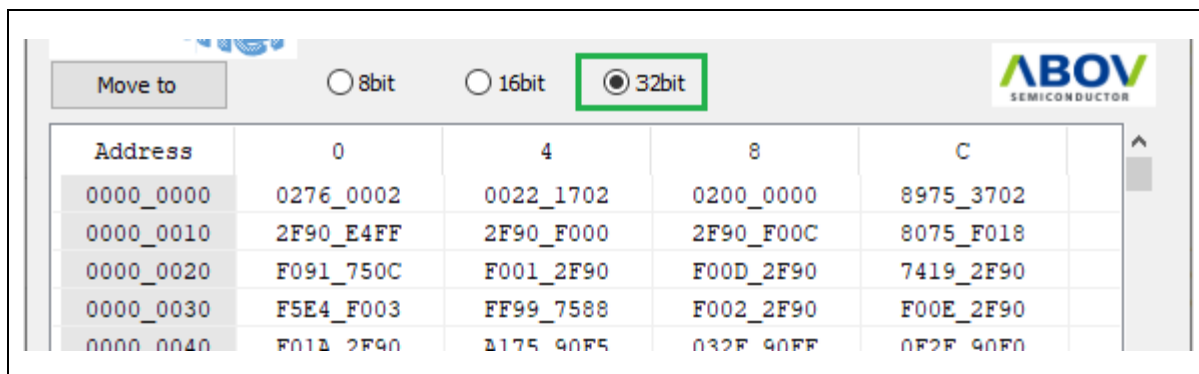


Figure 14. 32-bit Data Unit (Eight Hex Digits with the Under-bar for Readability)

4 Programming Precautions

4.1 Precautions

Device programming mode is selected when power on time.

If a target device is powered before aFlasher8 start controls, the target device is running user mode. This means that aFlasher8 cannot control the target device.

If you use the external power source, the E-OCD II is powered by the target system's power source. In this case, you must follow the sequence listed below:

1. Run aFlasher8 program.
2. Select a target device.
3. Power on your system.
4. Control aFlasher8 program.

4.2 To Avoid Damage to E-COD II Debugger

Users must be aware of the following information:

- E-OCD II does not support hot plugging. When the target system is powered, plugging E-OCD II may damage their hardware permanently.
- E-OCD II is simple and cheap tool. They are suitable for use for a small number of units at the pre-production phase, but their protection circuits are not strong enough to endure mass production. For mass production, E-PGM+ or a third-party programmer is recommended.

Revision History

Version	Date	Description
1.0.0	Oct. 05, 2020	Last revised.
1.0.1	Dec. 03, 2020	New format applied document.

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