



StarFive
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JH-7110 DevKit USB Flash Tool User Guide

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Legal Statements

Important legal notice before reading this documentation.

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Preface

About this guide and technical support information.

About this document

This document mainly introduces how to use JH-7110 DevKit flash tool.

Revision History

Table 0-1 Revision History

Version	Released	Revision
1.0	2024/01/04	The First Official Release.

Notes and notices

The following notes and notices might appear in this guide:

-  **Tip:**
Suggests how to apply the information in a topic or step.
-  **Note:**
Explains a special case or expands on an important point.
-  **Important:**
Points out critical information concerning a topic or step.
-  **CAUTION:**
Indicates that an action or step can cause loss of data, security problems, or performance issues.
-  **Warning:**
Indicates that an action or step can result in physical harm or cause damage to hardware.

1. Overview

JH-7110 DevKit flash tool enables users to:

- Update the file of SPL and U-boot in QSPI Flash.
- Update the file of SPL, U-boot, Kernel, and sdcard .img in EMMC.



Note:

- QSPI Flash can only support updating SPL and U-Boot.
- EMMC supports updating the entire sdcard .img.

2. Preparation

Make sure you perform the following before using the flash tool:

1. Prepare the items listed in the [Prerequisite \(on page 8\)](#).
2. Install driver as described in [Installing Driver \(on page 8\)](#).

Prerequisite

Environment: Windows 10 and above.

Required Hardware:

- JH-7110 DevKit
- USB to Serial Converter
- Type-C cable (USB to Type-C)
- 12 V/5 A power adapter

Installing Driver

To install driver, perform the following steps:

1. Download and unzip the file, [UsbFlashTool <Version>-Windows](#).

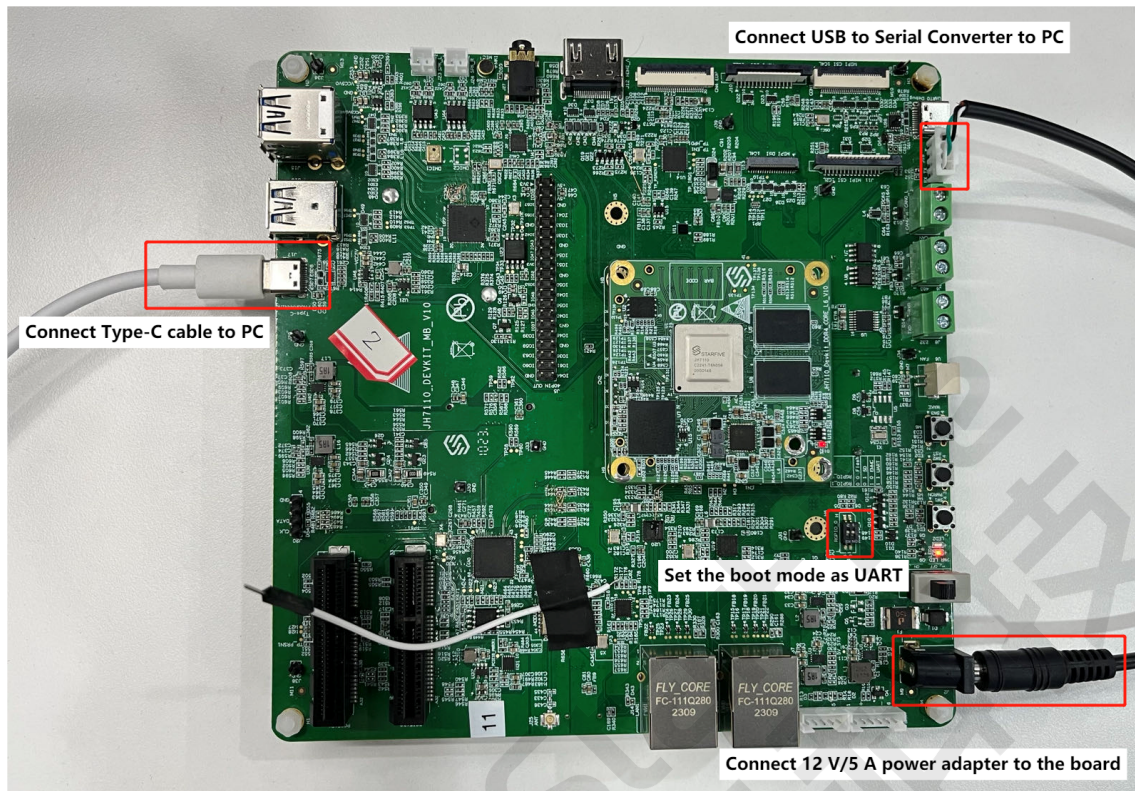


Note:

<Version> is the version number of the flash tool. For example, V2 . 6.

2. Set the boot mode to UART (RGPIO_1, RGPIO_0: 1, 1), then connect the cables as described in the following figure:

Figure 2-1 Wiring

**Tip:**

Refer to this [link](#) to set the boot mode as UART.

- Open the file, `UsbFlashTool_<Version>-Windows`.

**Note:**

<Version> is the version number of the flash tool. For example, V2 . 6.

- Check if serial port settings (**SerialPort**, **Baudrate**, **DataBit**, **StopBit**) are correct .

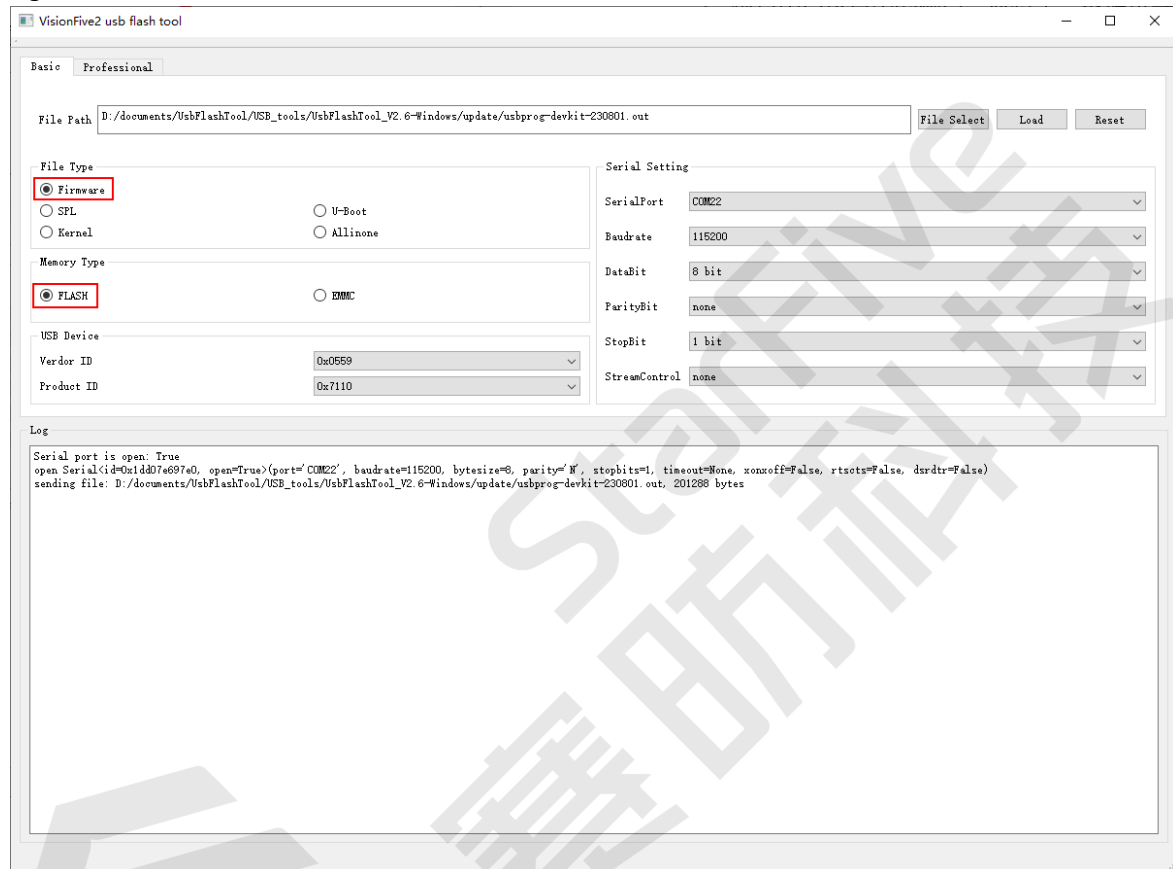
Figure 2-2 Serial Port Settings

Serial Setting	
SerialPort	COM4
Baudrate	115200
DataBit	8 bit
ParityBit	none
StopBit	1 bit
StreamControl	none

5. Select **Firmware** under file type and select **Flash** under memory type, and then choose the file of usbprog-devkit-<Date>.out and click **Load**.

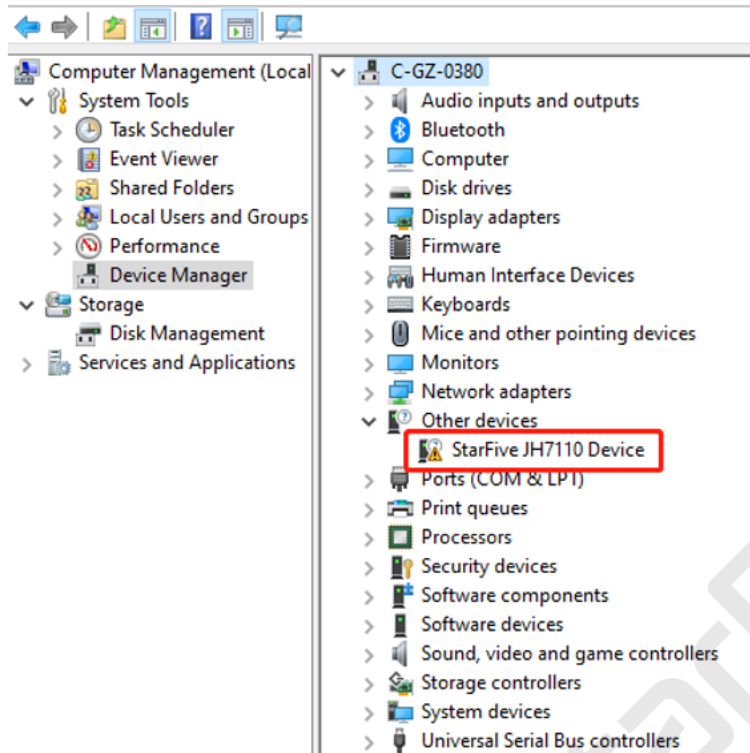
**Note:**

<Date> indicates the update time. For example, 230801.

Figure 2-3 Select Frimware File

6. Open Device Manager and you will see **StarFive JH7110 Device**. If the device does not appear in the Device Manager, make sure your USB cable connection is correct (only when the device appears that you can install the driver).

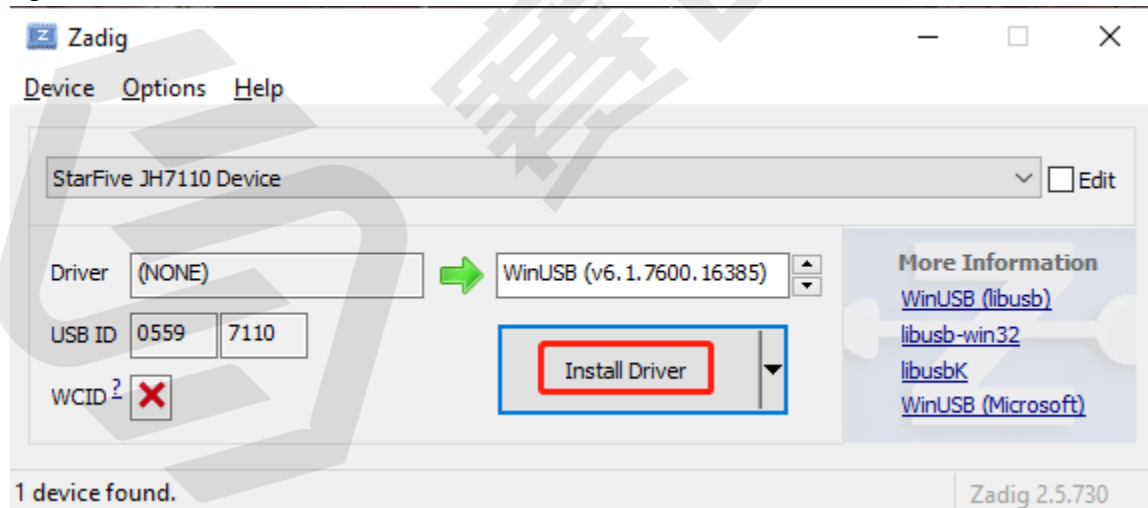
Figure 2-4 Device Manager



7. Open zadig-2.5.exe in the folder UsbFlashTool_<Version>-Windows, click **Options > List All Devices**, choose **StarFive JH7110 Device** and click **Install Driver**.

Result:

Figure 2-5 Install Driver



The installation is successful.

8. Reboot JH-7110 DevKit and UsbFlashTool_<Version>-Windows.



Note:

<Version> is the version number of the flash tool. For example, V2 . 6.



Note:

Driver installation is only required for the first use.



3. Using JH-7110 DevKit Flash Tool

This chapter introduces two sections to use VisionFive 2 flash tool:

- [Basic Mode \(on page 13\)](#)
- [Professional Mode \(on page 18\)](#)

3.1. Basic Mode

To use the VisionFive 2 flash tool in basic mode, follow the steps below:



Important:

- **Firmware** should be burned at first; If there is a problem when burning, you can power off and restart, and reset again.
- Make sure you select the correct memory type.
- **Kernel** and **Allinone** can only burn into EMMC.
- The file path can be customized in basic mode while in professional mode, files should be under update directory.

1. Burn **Firmware**:

- a. Select **Firmware** under file type.
- b. Select **Flash** under memory type.
- c. Select the file of usbprog-devkit-<Date>.out by clicking **File Select**.

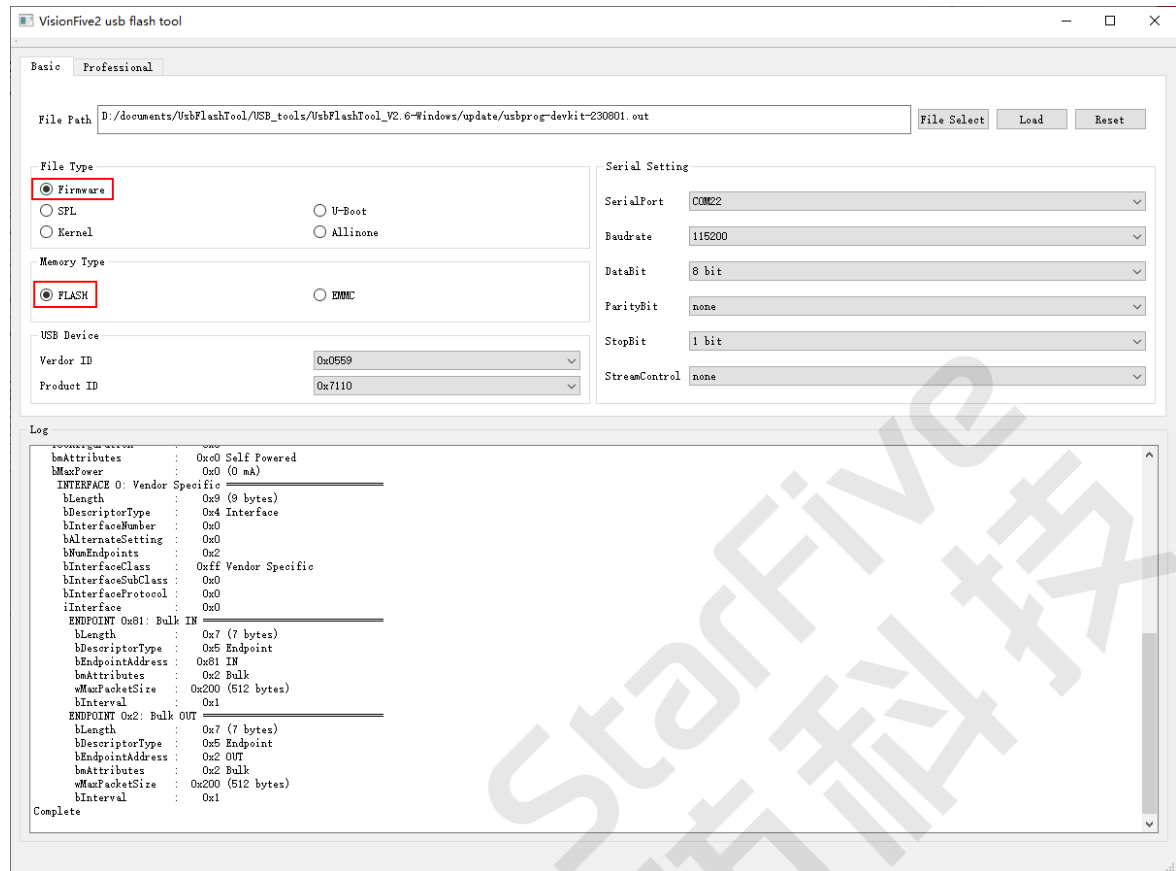


Note:

<Date> indicates the update time. For example, 230801.

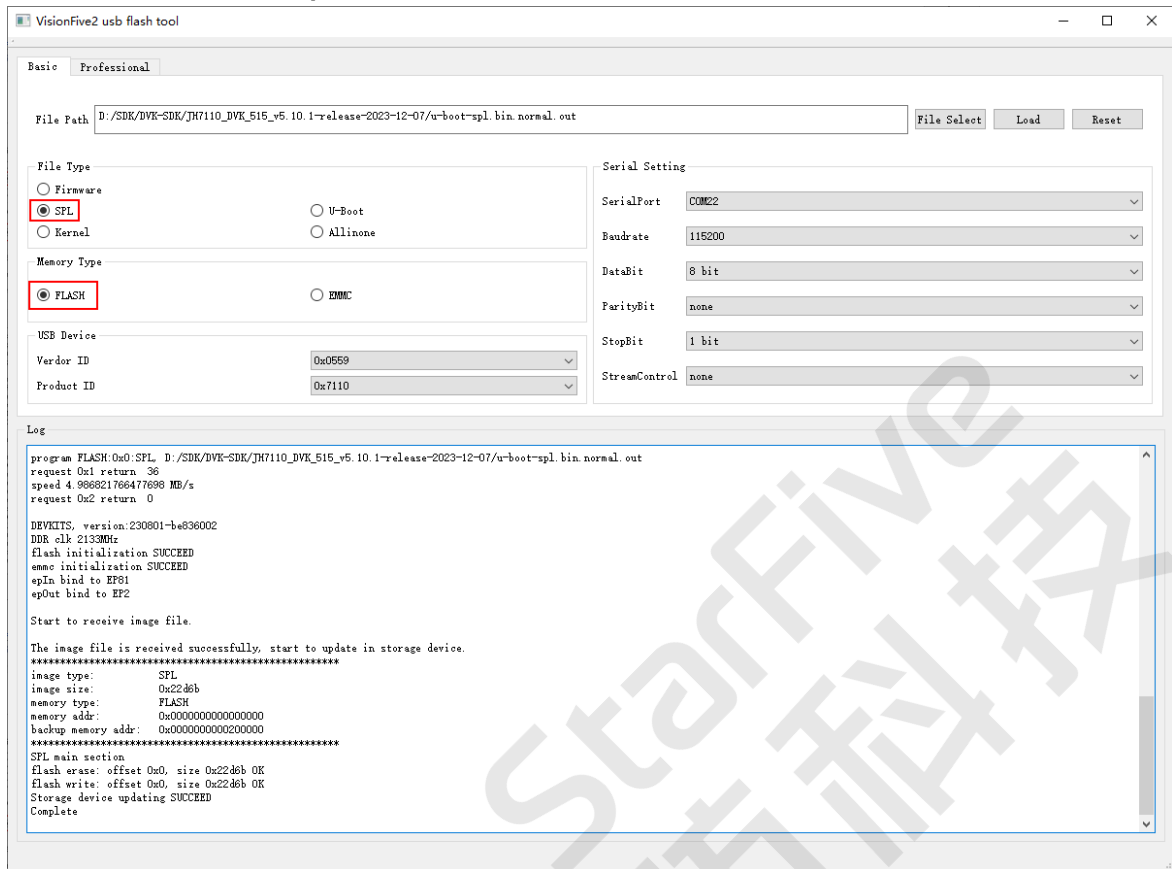
- d. Click **Load**.

Figure 3-1 Select Firmware File

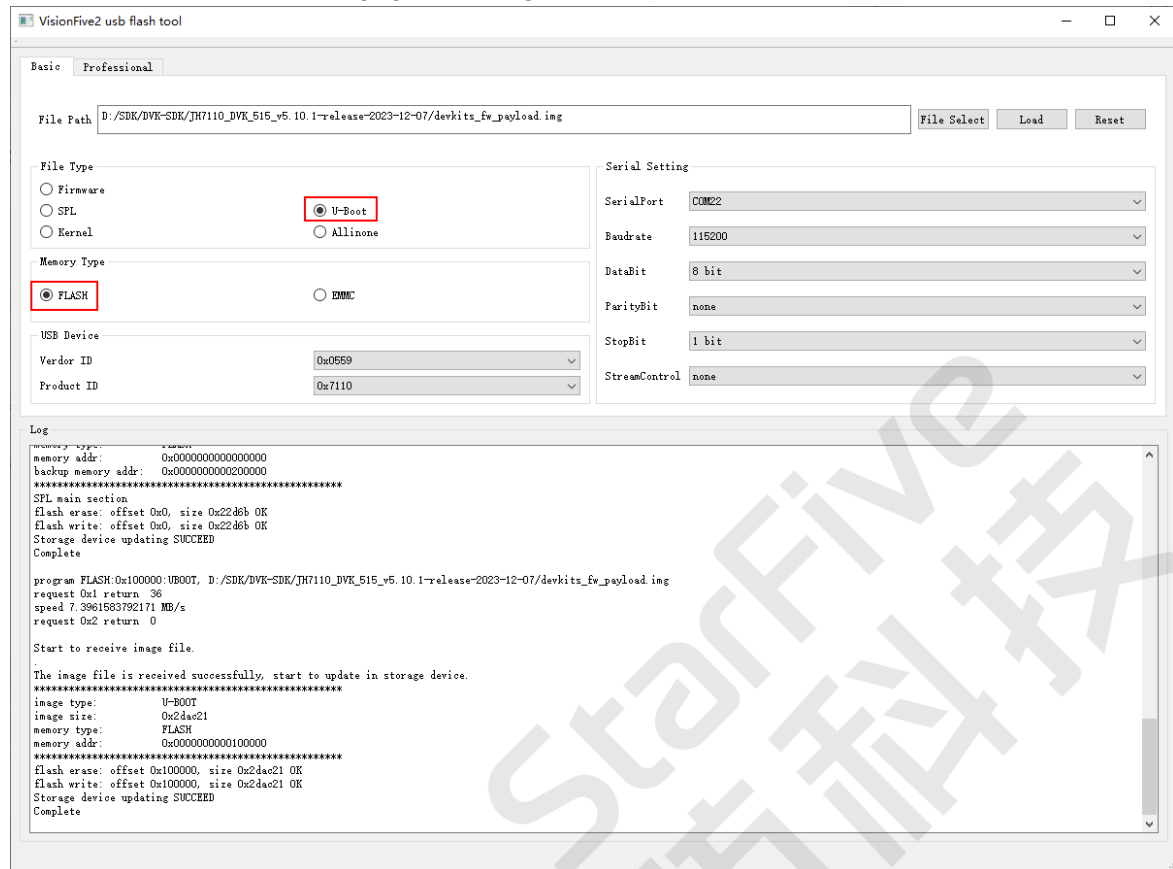


2. Burn SPL:

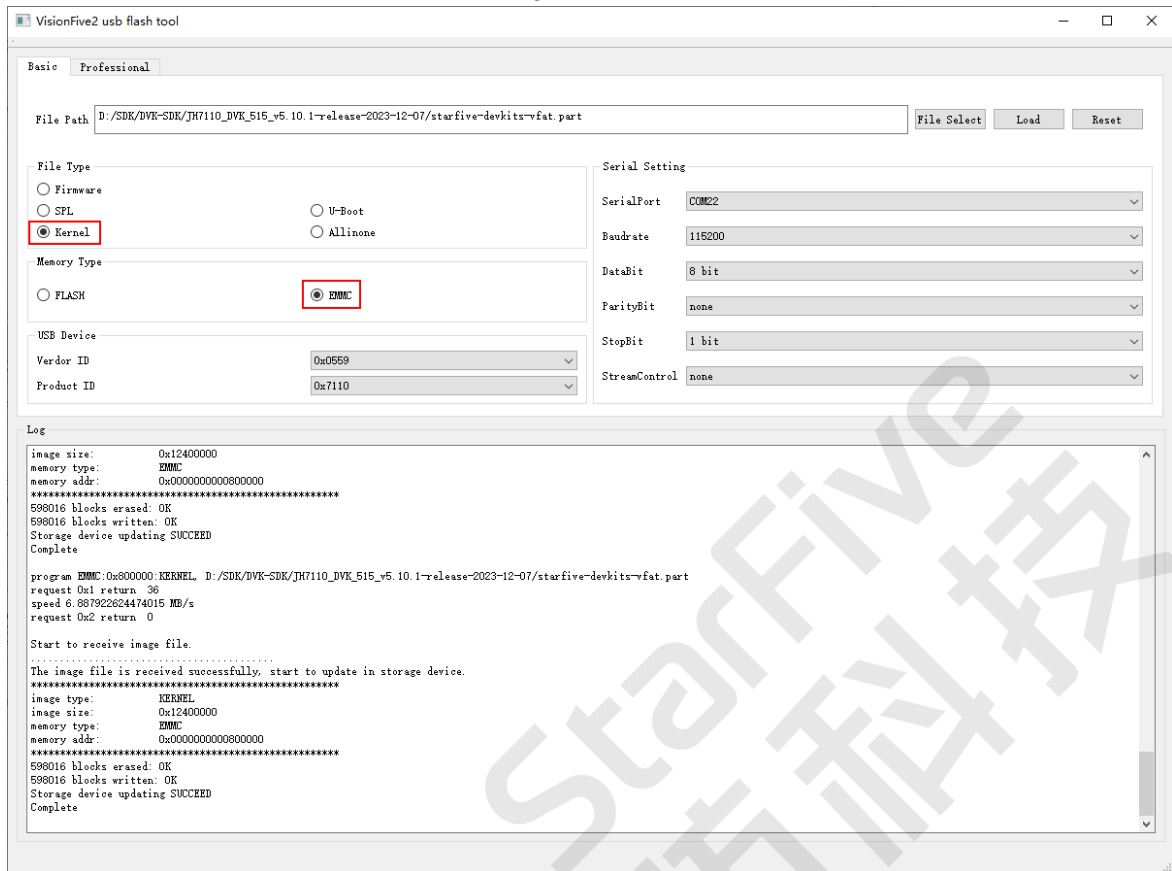
- a. Select **SPL** under file type.
- b. Select **Flash** under memory mode.
- c. Select u-boot-spl.bin.normal.out by clicking **File Select**.
- d. Click **Load**.

Figure 3-2 Burn u-boot - spl . bin . normal . out**3. Burn U-Boot:**

- a. Select **U-Boot** under file type.
- b. Select **Flash** under memory type.
- c. Select devkits_fw_payload.img by clicking **File Select**.
- d. Click **Load**.

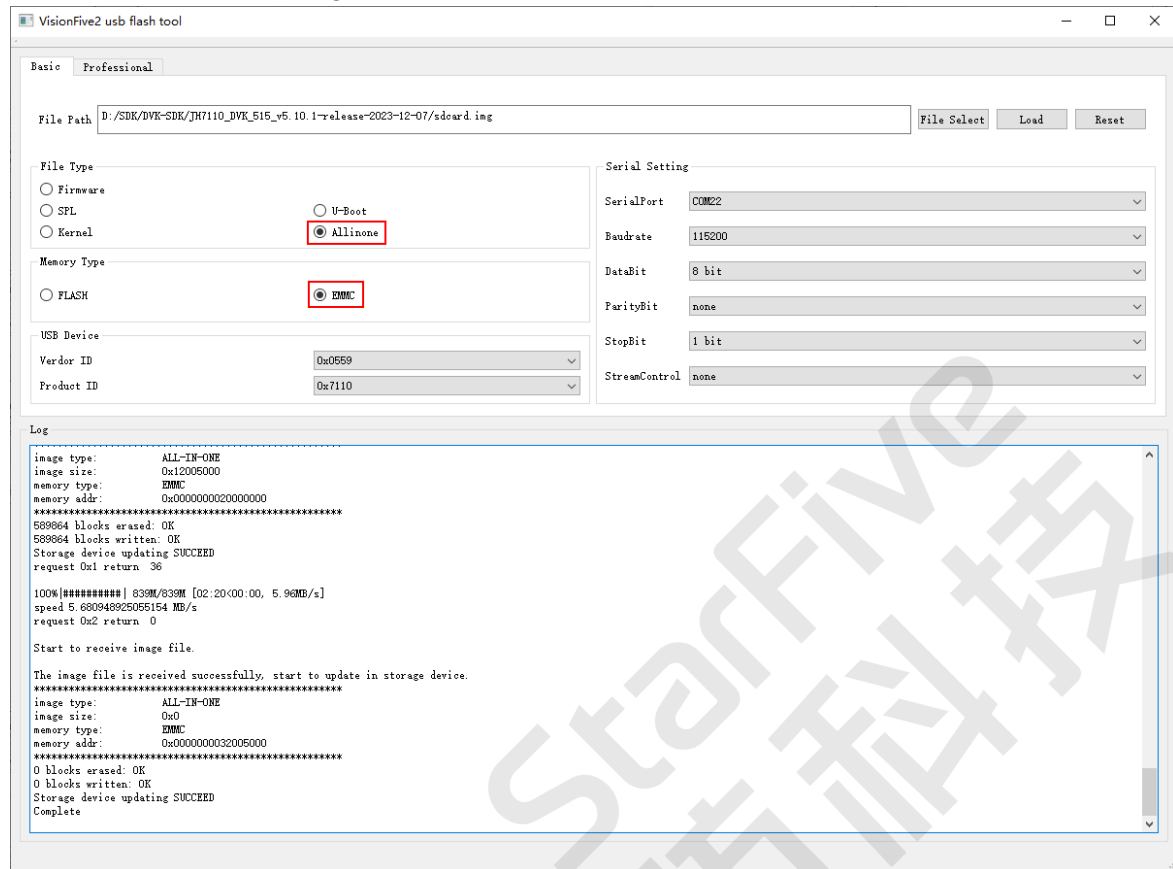
Figure 3-3 Burn devkits_fw_payload.img**4. Burn Kernel:**

- Select **Kernel** under file type.
- Select **EMMC** under memory type.
- Select starfive-devkits-vfat.part by clicking **File Select**.
- Click **Load**.

Figure 3-4 Burn starfive-devkits-vfat .part

5. Burn sdcard .img:

- Select **Allinone** under file type.
- Select **EMMC** under memory type.
- Select `sdcard .img` by clicking **Select File**.
- Click **Load**.

Figure 3-5 Burn sdcard .img**Result:**

You will see the output **Complete**, which indicates that the image is burnt successfully.

3.2. Professional Mode

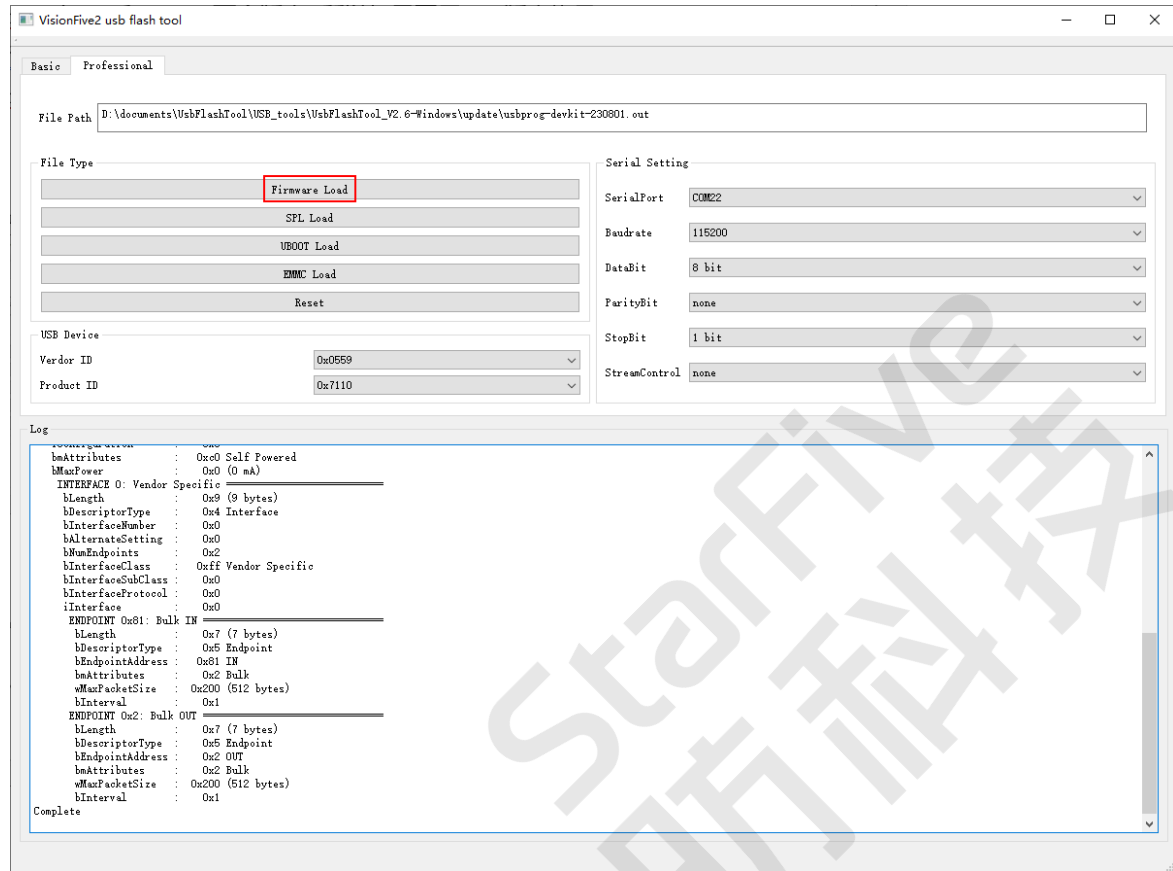
To use the VisionFive 2 flash tool in professional mode, follow the steps below:

**Important:**

- All files need to burn should be placed under update directory.
- The system can automatically recognize burning keywords:
 - The keyword of **Firmware Load**: usbprog
 - The keyword of **SPL Load**: spl
 - The keyword of **UBOOT Load**: payload
 - The keyword of **EMMC Load**: img
- There are 2 usbprog files, one for VisionFive 2, the other for JH-7110 DevKit. Please make sure only one usbprog file under update directory.

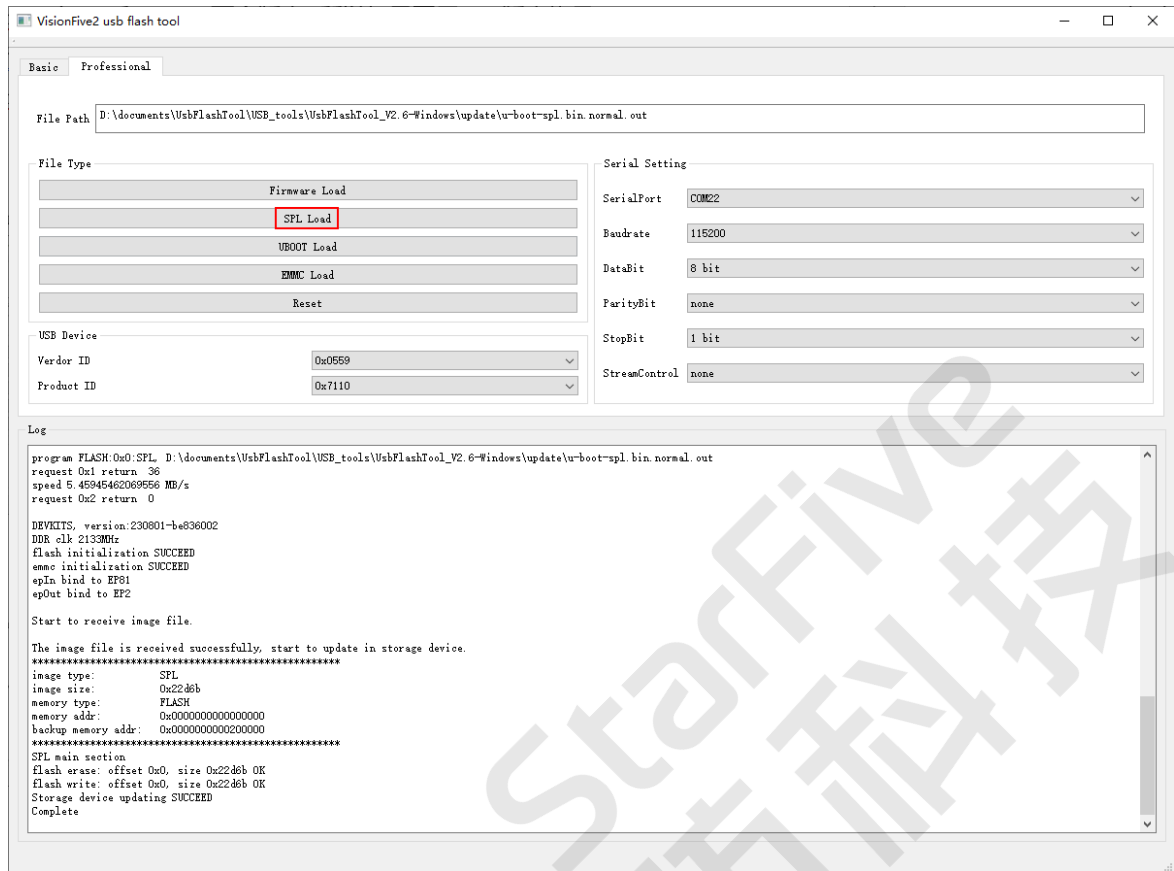
1. Click **Firmware Load**, and Firmware will be automatically burnt.

Figure 3-6 Burn Firmware



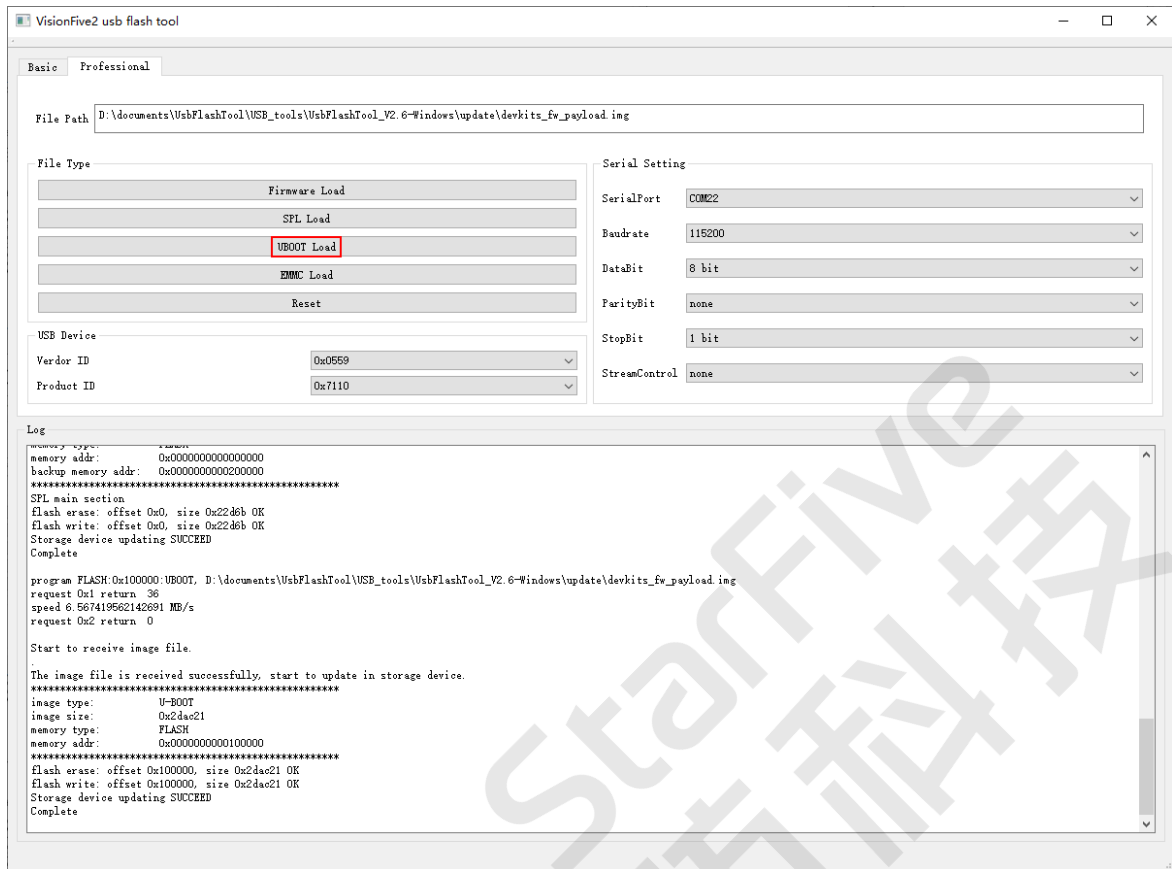
2. Click **SPL Load**, and u-boot - spl . bin . normal . out will be automatically burnt into Flash.

Figure 3-7 Burn SPL

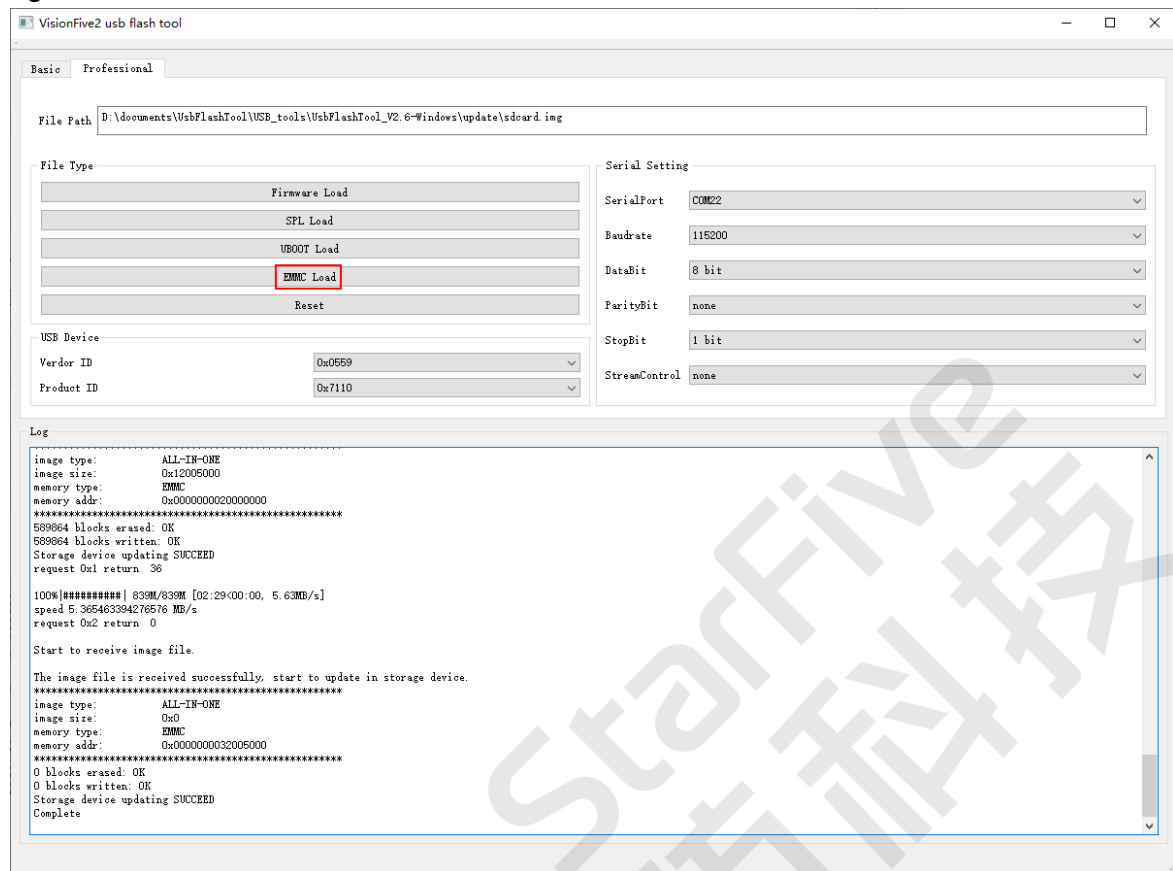


3. Click **UBOOT Load**, and devkits_fw_payload.img will be automatically burnt into Flash.

Figure 3-8 Burn UBOOT



- Click **EMMC Load**, and sdcard .img will be automatically burnt into EMMC.

Figure 3-9 Burn EMMC**Result:**

You will see the output **Complete**, which indicates that the image is burnt successfully.