How to Burn the Bootloader of Arduino with FT232

Contents

1. Hardware configuration

Please operate the connections of the relative pin headers on the UNO PLUS, as Figure 1 shows.
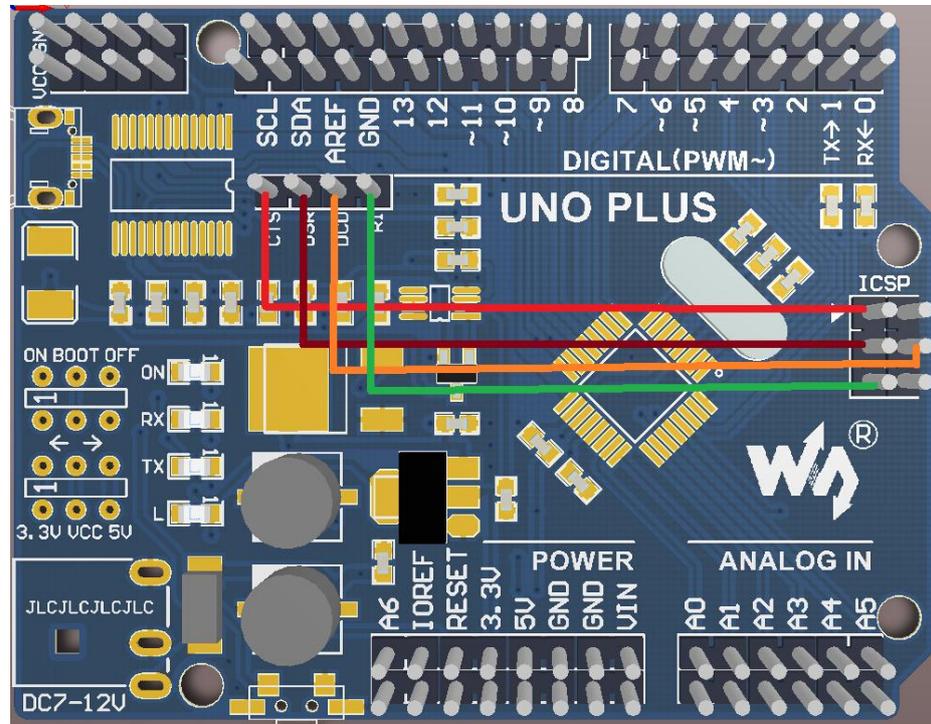
Figure 1: The hardware connections on UNO PLUS

2. Setting avrdude-GUI

1) Unzip the package FT232RL AVRDUDE under the directory of Software, and open the file avrdude-GUI (located at the folder avrdude-GUI-1.0.5). Then, you will enter the following interface, as Figure 2 shows.
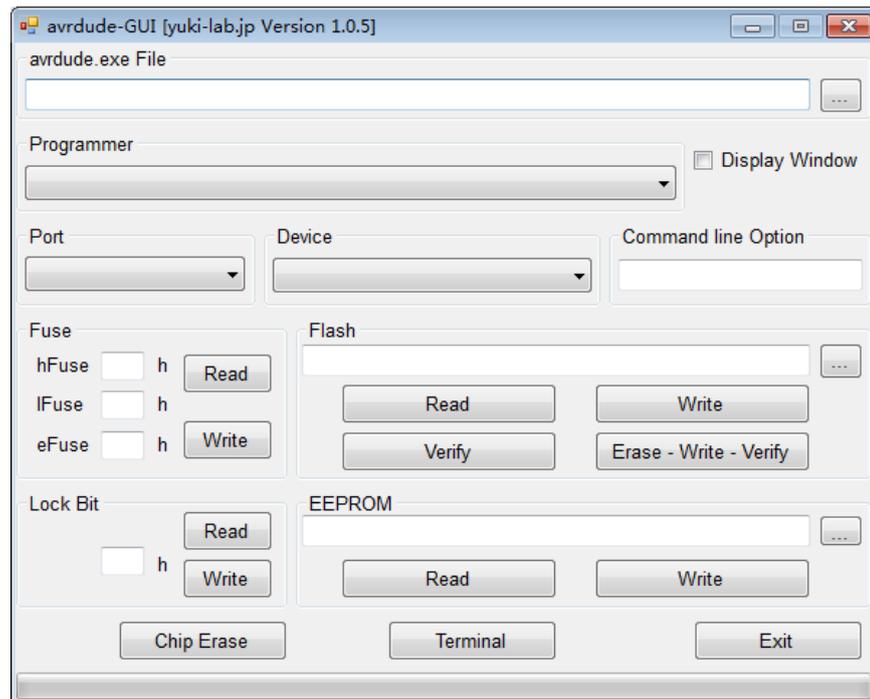
Figure 2: avrdude-GUI interface

2) Fill in the path of avrdude.exe in the box under the tab Avrdude.exe File. You can also click the browse button (...) on the right of the box to select the corresponding path.

3) Select FT232R Synchronous BitBang (diecimila) under the pull-down menu Programmer.

4) Choose the corresponding Part number of the CPU under the pull-down menu Device. UNO PLUS uses an on-board CPU ATmega328P-AU, so ATmega328P(m328p) is selected in here.

5) Input the interface information to the box under the tab Command line Option: -P ft0.
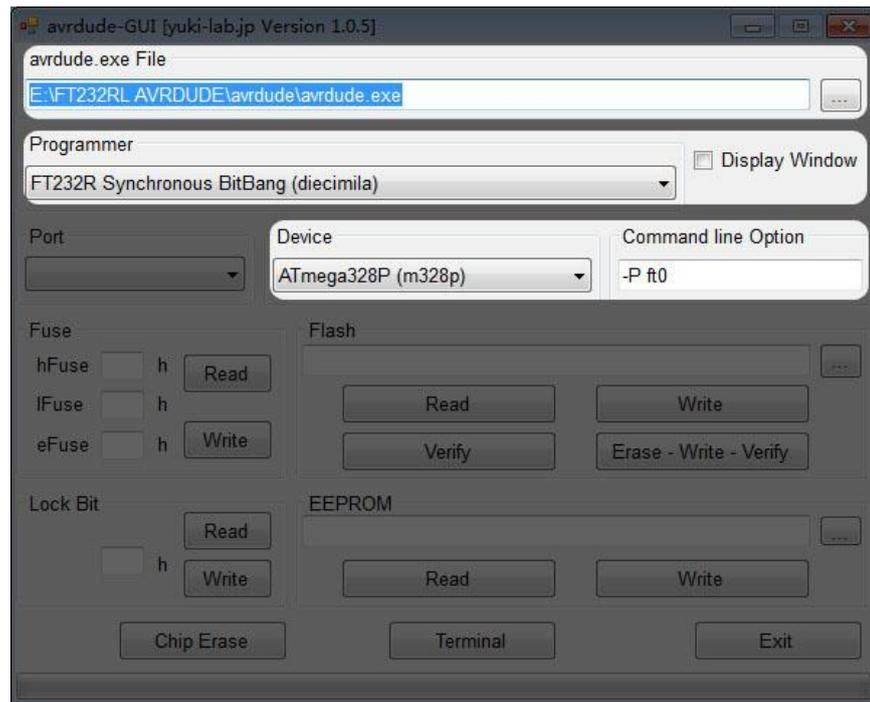
Figure 3: Setting avrdude-GUI

3. Configuring the Fuse Bit of UNO PLUS

1) Click the buttons Read in the areas of Fuse and Lock Bit to read out the Fuse Bit settings, as Figure 4 shows.
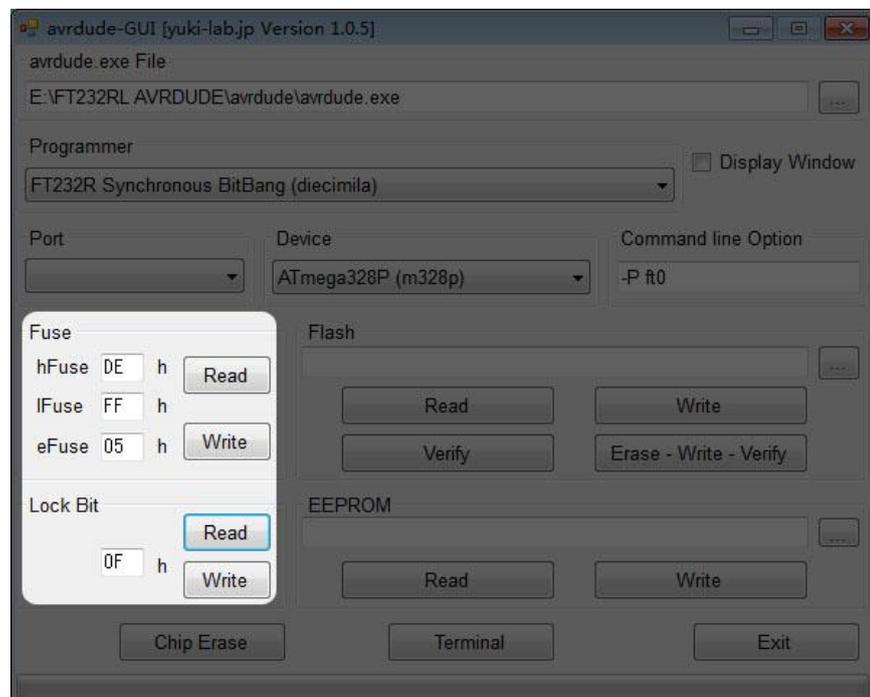
Figure 4: Reading out the Fuse Bit settings

2) The Fuse Bit settings read out are not always the one that you need. Here is the official recommendation by Arduino:
- high_fuses=0xde
- low_fuses=0xff
- extended_fuses=0x05
- lock_bits=0x0F
- unlock_bits=0x3F

Notices: The relative Fuse Bit configurations for each version of Arduino can be found in the file boards.txt under the Arduino installation folder: hardware\arduino. Users can operate relative configuration as required.

If the read-out settings are different from the official recommendation by Arduino, you should write the official recommendation settings into the CPU. Fill in the relative settings, and click the button Write to end the configuration.

4. Programming Bootloader

1) Fill in the path of optiboot_atmega328-Mini.hex in the box under the tab Flash. You can also click the browse button (. . .) on the right of the box to select the corresponding path.

Arduino provides different Bootloader files for different versions in the installation folder: hardware\arduino\bootloaders. In here, the file optiboot\optiboot_atmega328-Mini.hex is in used.

2) Click the button Erase-Write-Verify to write hex file into the CPU, and wait until the writing finished, as Figure 5 shows.
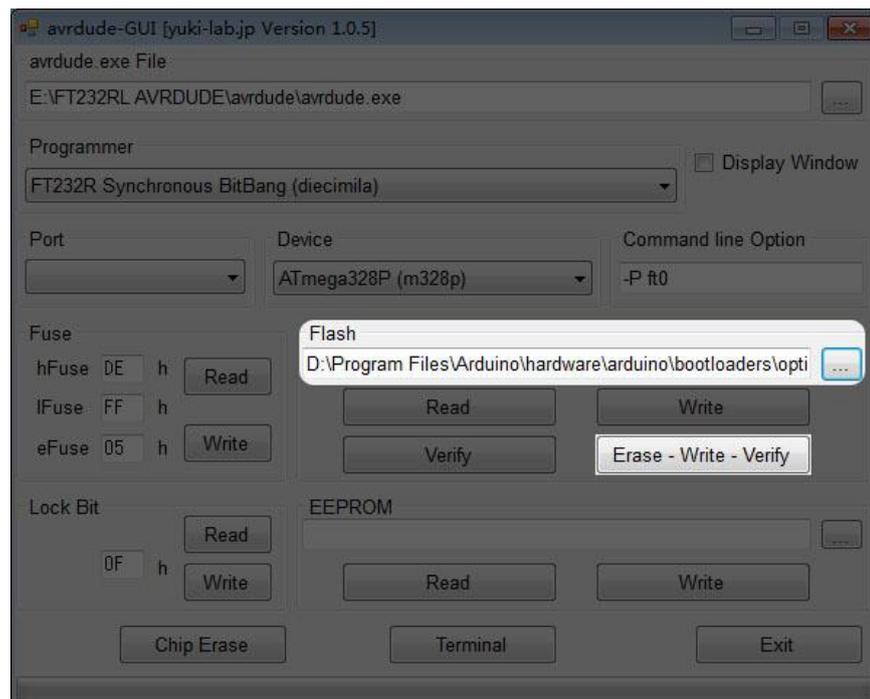
Figure 5: Writing the file Bootloader into the CPU

3) When the programming finished, power off the Board. The Bootloader
    can run properly in the CPU.