1. Update the extension board firmware

1.1. update firmware declaration

The firmware of the MCU integrated with the ROS expansion board has been burned before delivery. There is no need to update the firmware if it is not necessary.

1.2. download burning software and firmware

Download the burning software

The mcuisp (or flymcu) burning software is required for burning the ROS expansion board MCU firmware. Please visit http://www.mcuisp.com to download the mcuisp (or flymcu) burning software. The mcuisp software provided in the documentation can also be used directly.

The mcuisp software is a green version that does not require installation and can be used by double-clicking.

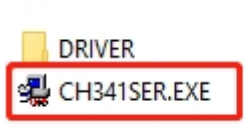
Download the latest firmware of the expansion module

Visit the official website of Yahboom and click [Expansion board MCU Firmware download] in the RDK-X3-Robot data download area to download the latest firmware.

1.3. Install CH340 driver

Because the USB communication of the ROS expansion board uses the CH340 chip, you need to install the CH340 chip driver. If the CH340 driver has been installed on the computer, you do not need to install it again.

Unzip [Uart drive (CH340).zip] in the course materials, double-click to open CH341SER.EXE program



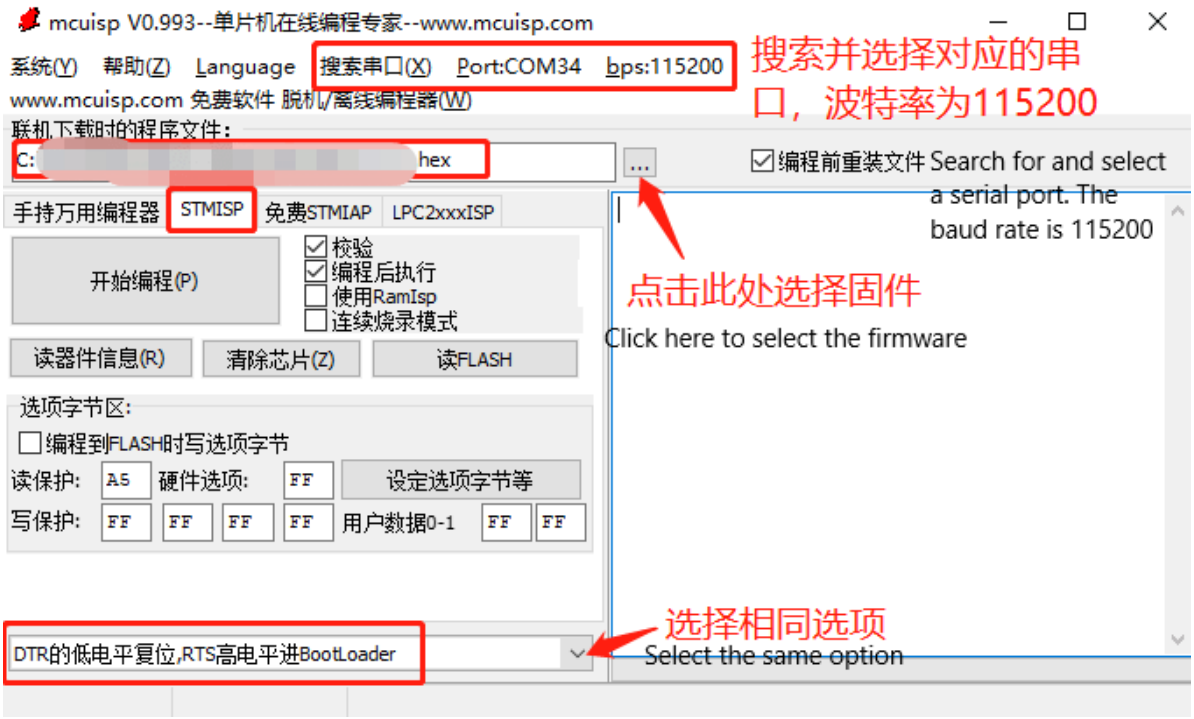
Click Install. After the installation is complete, a message is displayed indicating that the installation is successful.

1.4. Connect your computer to the ROS extension board

Note: Before connecting the ROS expansion board to your computer, unplug the Micro USB data cable and power cable from the Jetson Nano.

Plug one end of the USB cable into the USB port of the computer and the other end into the Micro USB port of the ROS expansion board.

1.5. Configure burning software



If multiple serial port numbers appear when searching for the serial port, you are not sure which one is the ROS expansion board. Solution 1: Unplug other USB ports and search; Solution 2: First unplug the USB data cable of the ROS expansion board, click Search serial port, record the serial port number found, insert the USB data cable of the ROS expansion board, search for the serial port again, compare before and after twice, the newly added serial port number is the serial port number of the ROS expansion board.

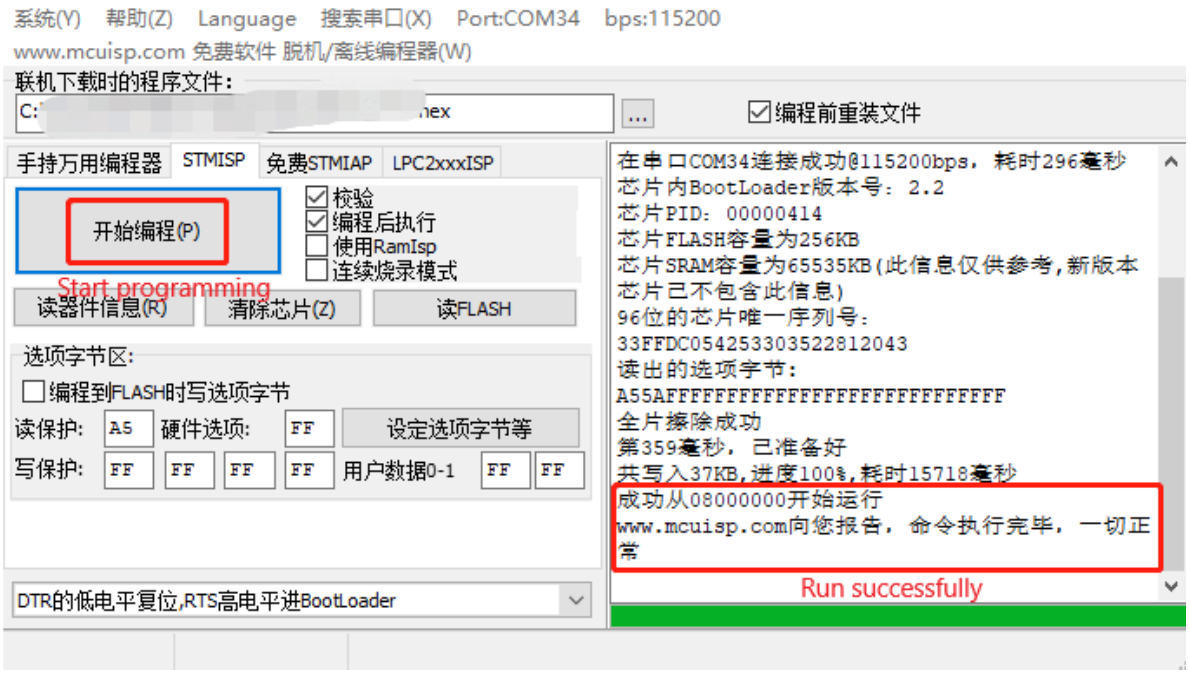
When selecting the firmware, you need to select the firmware path downloaded in the first step. The path must not contain Chinese or special symbols.

The last is the configuration selection at the bottom, be sure to select the [low level reset of DTR, high level into the BootLoader of RTS] option, otherwise the download may fail.

1.6. Start burning firmware

Please first put the MCU on the expansion board into burning mode:

First hold down the BOOT0 key on the expansion board, then press the RESET key, and finally release the BOOT0 key.



Click [Start programming], and the mcuisp burning software will burn the firmware we selected in the previous step to the MCU of the ROS expansion board. When the right side appears [successful from 08000000 start to run www.mcuisp.com to report to you, command execution is completed, everything is normal] prompt means that the download is successful.
Note:
① Before starting burning, please make sure that the serial port number of the ROS expansion board is accessible, that is, there is no serial assistant occupying it.

② To enter the burning mode of ROS expansion board, press and hold the BOOT0 key on the expansion board first, then press the RESET key, and finally release the BOOT0 key.

③ Since the ROS expansion board supports multiple car types, the motor parameters of different models are different, and after updating the firmware, all the data will be reset to the factory default information, please follow the course of setting the car type to adapt the current car type.