

Common Problem Analysis

1. Why is the connection too slow after executing the SSH remote login command?

Answer: The `~/.bashrc` file will be executed when logging in. Since the `setup.bash` files of multiple ROS workspaces are written to this file, the loading will be slightly slower.

2. Why does the device error occur when driving the depth camera or radar?

Answer: If there is no problem with the hardware connection, please exit the program and replug the device USB cable.

3. How does RDK X3/X5 control the expansion board? How to communicate with the expansion board?

Answer: RDK X3/X5 sends serial port data and transmits it to the expansion board through the USB port. The expansion board integrates a single-chip microcomputer, which receives and parses the serial port data, and then processes the specific commands to be executed.

4. How is the robot powered? Does RDK X3/X5 need additional power?

A: The car is equipped with a battery pack when it leaves the factory. Insert the battery pack into the DC 8V power T-type interface of the expansion board, turn on the main power switch, and the expansion board integrates a voltage conversion chip to provide DC 5V power, which is transmitted to the RDK X3/X5 through the TypeC 5V power line.

5. Which functions on the expansion board are managed by the MCU?

A: The parts managed by the MCU on the expansion board include: active buzzer, attitude sensor, motor, button KEY1, RESET button, SBUS interface, CAN interface, etc.

6. How to update the MCU firmware on the expansion board? Why do you need to update the MCU firmware?

A: The MCU integrated in the expansion board has been burned with firmware when it leaves the factory. Please do not update the firmware unless necessary. If you need to update the firmware, please refer to the firmware update tutorial to update the MCU firmware.

7. After updating the firmware, why do you need to set the car type and how do you set the car type?

Answer: Since the ROS driver board firmware is compatible with multiple robot cars, the data of the ROS driver board will be reset to the initial state after the firmware is updated. At this time, you need to set the car type for the ROS driver board to RDK X3/X5 car. There are three ways to set the car type. The first is to manually operate according to the tutorial for setting the car type; the second is to restart the APP control program once; the third is to automatically set the car type to RDK X3/X5 car every time you run the ROS routine.

8. Why do you need to close the APP control program? What impact does it have on program development?

Answer: In order to experience the convenience of the control program, the robot automatically runs the APP control program when it is turned on, but it will occupy resources such as the camera and serial port. Before actually developing the ROS routine, you need to close the APP control program first to avoid errors caused by the ROS routine calling resources such as the camera and serial port. If you do not use APP control for a long time, you can permanently close the APP control program according to the tutorial.