



Wireless communication

Engineering physics' Robot competition 2023

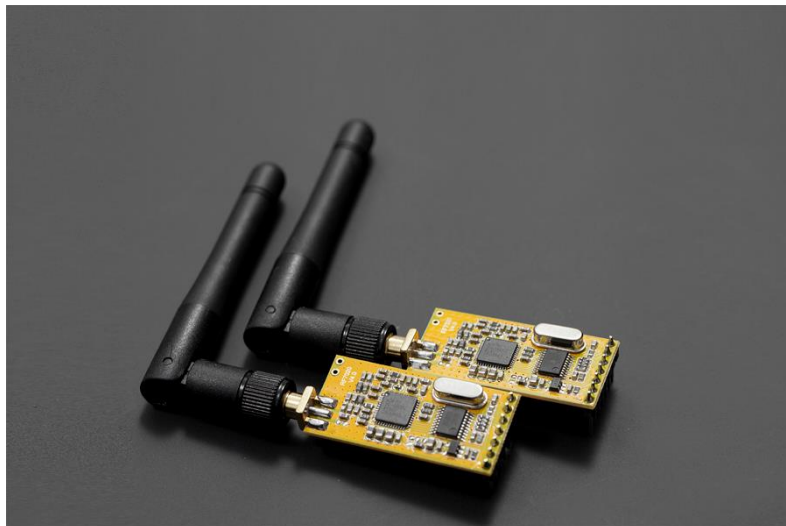




Table of contents

- 1 Introduction..... 3
- 2 Computer side 3
 - 2.1 Software 3
- 3 Robot side..... 4





1 Introduction

To control the robot wirelessly, we use a pair of APC220 radio modules from DFRobot. They function in practice as a USB extender. The only difference for you is that instead of choosing the COM port for the wired Romeo card, you instead choose the COM port for the connected radio module.

2 Computer side

Figure 1 shows how the radio module is connected to the computer via a USB-UART adapter. You can recognize the radio module intended for the computer by the fact that a pin on the module is bent. This is needed for it to work.

NOTE: The radio module has only been tested on Windows so it may not work on Mac or Linux.

2.1 Software

For the USB-UART adapter to work, the drivers for it need to be downloaded. The link to the download page can be found here: <https://www.silabs.com/developers/usb-to-uart-bridge-vcp-drivers?tab=downloads>



Figure 1. The radio module with a bent pin plugged in via a USB-UART adapter.



3 Robot side

Figure 2 shows how the radio module can be plugged directly into the Romeo card. If you want to mount the radio module elsewhere, you can use male-female extension cables. It is the radio module without a bent pin that is used for the Romeo card.

NOTE: When uploading a sketch to the Romeo card, you must still use the USB cable. In order to upload the sketch, the radio module must be disconnected. The same applies to the radio module: If you want the radio module to work, the USB cable must be disconnected. You can therefore only use either cord or radio receiver.

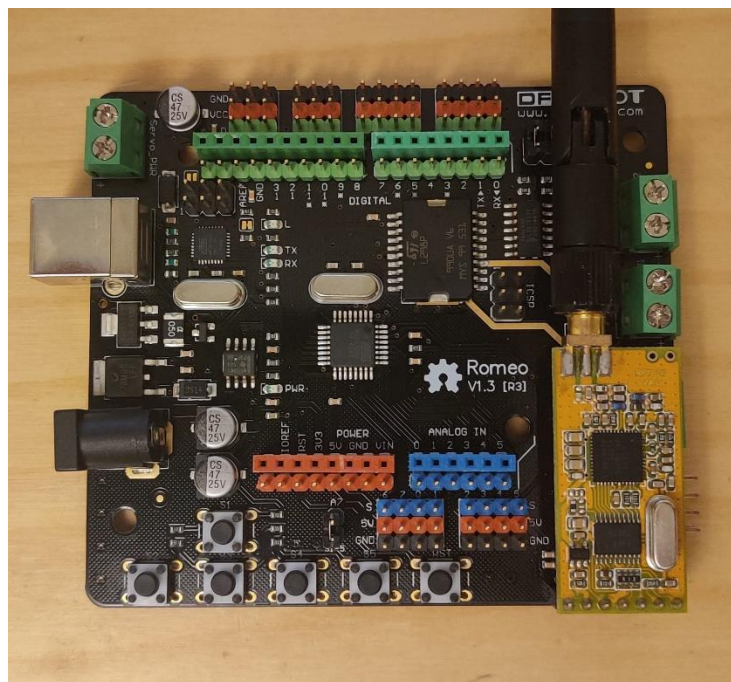


Figure 2. The radio module without a bent pin plugged directly into the Romeo card.