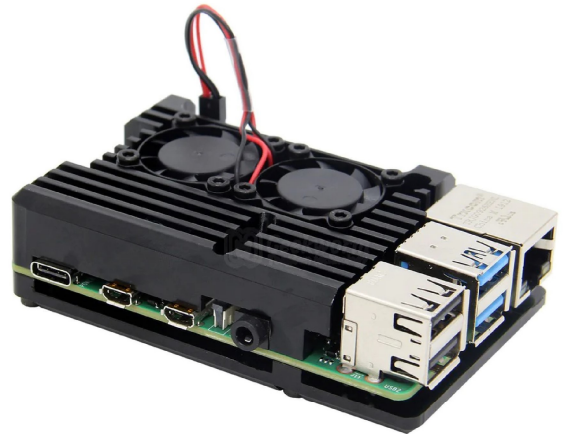


## **GARBAGE COLLECTOR ROBOT COMPONENTS**



**Nvidia Nano**



**Raspperri pi 4**



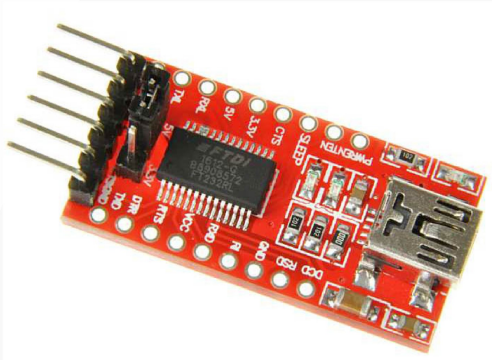
**USB-C TO  
5.5mm Adapter**



**Powerbank ( Not included)\***

**\*Specifications at the end of file**

## GARBAGE COLLECTOR ROBOT COMPONENTS



**USB UART**



**USB A TO USB MINI**



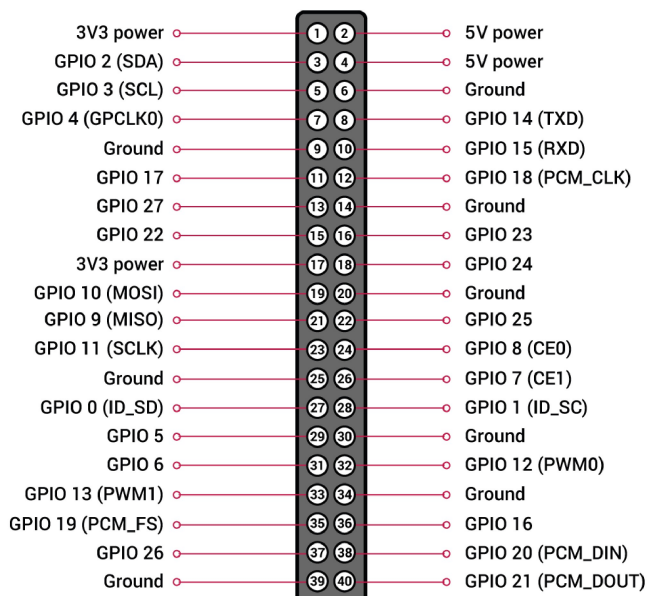
**BARREL JACKS**



**BOLTS AND NUTS**

## STEPS TO CONNECT THE PLATFORM

- 1.- Mount the garbage bin and other plastic pieces to the platform using cable ties or other material to keep the pieces in position.
- 2.- Mount the arm and the Camera with its stand with the supplied bolts and nuts
- 3.- Tie the Nvidia Nano, Raspberri pi 4 and the Powerbank to the platform.
- 4.- Connect the Platform micro controller to the Raspberri pi using this configuration



Grey pin of the Platform cable to 3v3 power ( pin 1)

Black pin of the Platform cable to Ground ( pin 6 or pin 9)

Purple pin of the Platform cable to GPIO 14 ( pin 8)

Grey pin of the Platform cable to GPIO 15 ( pin 10)

## STEPS TO CONNECT THE ARM

5.- Connect the arm with the supplied barrel jack connector to the 12v batteries.

**Note:** Be careful with the connecting the correct pins of the barrel jack '+' and '-'

6.- Connect the USB UART as follow:

Upper end M5 IO Interface labels

5V0 GND 3V3 G22 G19 G23 G33

Base M5 IO Interface labels

R0  
T0  
R2  
T2  
G2  
G5  
DA  
DA  
AD  
AD  
RST  
BAT  
3V3  
5V  
G

5V 3V3 G 21 22 23 19 18



5V 3V3 G SDA SCL MO MI SCK

3  
1  
16  
17  
2  
5  
25  
26  
35  
36  
RST  
BAT  
3V3  
5V  
G

PIN G in arm to Pin ground in usb uart.

PIN 18 in arm to Pin TX in usb uart.

PIN 19 in arm to Pin RX in usb uart.

## **STEPS TO CONFIGURE THE RASPBERRI PI**

- 1.- You need to set up a wifi network using a wifi access point or with your cellphone hotspot using this configuration:**
  - Wifi Network : robot**
  - Wifi Password : robotpassword**
  
- 2.- On your device check the ip address that was assigned to the Raspberri pi and save it so you can connect to the device using this ip address.**
  
- 3.- Using an ssh connection connect to the Raspberri pi using the following credentials:**
  - username: robot**
  - password : robotpassword**
  
- 4.- Edit the file name "Server.py" and change the ip address of the variable "host" to the ip address that you got on the previous step.**

## **STEPS TO CONFIGURE THE NVIDIA NANO**

- 1.- You need to set up a wifi network using a wifi access point or with your cellphone hotspot using this configuration:**
  - Wifi Network : robot**
  - Wifi Password : robotpassword**
  
- 2.- On your device check the ip address that was assigned to the Nvidia and save it so you can connect to the device using this ip address.**
  
- 3.- Using an remote desktop connection connect to the Nvidia Nano using the following credentials:**
  - username: robot**
  - password : robotpassword**
  
- 4.- Connect to the Nvidia and go to the home and edit the script named "recognition\_with\_realsense1.py" and edit the function "def platform\_move" specifically the variable "server\_address" to the ip address of the Raspberri pi, this to have communication with the raspberri pi t move the platform.**

## STEPS TO OPERATE THE ROBOT

- 1.- Once everything is edited , run the script "recognition\_with\_realsense1.py" as follow:

```
sudo python3 recognition_with_realsense1.py --source 0
```

**Note:** --source will depend of the address of the camera , it can be 0 or 1, so change if you receive and error of not receiving frames.

- 2.- Put some trash in front of the camera, the platform should move gradually to the object

## Resources of the Robot with all information

[https://github.com/HellCreator/garbage\\_collector\\_robot](https://github.com/HellCreator/garbage_collector_robot)

<https://www.elephantrobotics.com/wp-content/uploads/2021/03/myCobot-User-Mannul-EN-V20210318.pdf>

[https://sklep.msalamon.pl/produkt/konwerter-usb-uart-ft232rl/?utm\\_source=Google%20Shopping&utm\\_campaign=msalamon&utm\\_medium=cpc&utm\\_term=1892&gclid=CjwKCAiA\\_OetBhAtEiwAPTeQZ7c-EEp-XyGbKjFZKUm75Ci6hwVKsgbDfUYi7wmpF2djK\\_qmxNdRmBoC1EMQAvD\\_BwE](https://sklep.msalamon.pl/produkt/konwerter-usb-uart-ft232rl/?utm_source=Google%20Shopping&utm_campaign=msalamon&utm_medium=cpc&utm_term=1892&gclid=CjwKCAiA_OetBhAtEiwAPTeQZ7c-EEp-XyGbKjFZKUm75Ci6hwVKsgbDfUYi7wmpF2djK_qmxNdRmBoC1EMQAvD_BwE)

<https://wobit.com.pl/en/produkt/7998/mobilne-roboty-edukacyjne-mobot/mobot-explorer-a1-robot-mobilny-z-elektronika/>

[https://allegro.pl/oferta/szybki-mocny-power-bank-xiaomi-mi-50w-20000mah-14112823624?utm\\_feed=aa34192d-eee2-4419-9a9a-de66b9dfae24&utm\\_term=test&utm\\_source=google&utm\\_medium=cpc&utm\\_campaign=\\_elktrk\\_telefony\\_akcesoria\\_pla\\_pmax&ev\\_campaign\\_id=17966351225&gad\\_source=1&gclid=CjwKCAiA\\_OetBhAtEiwAPTeQZ2yp7C\\_gGxU40vNmUihqKiBPqUzL2Ou93CtLVhF88ufn7tU0Kzy85hoCgekQAvD\\_BwE](https://allegro.pl/oferta/szybki-mocny-power-bank-xiaomi-mi-50w-20000mah-14112823624?utm_feed=aa34192d-eee2-4419-9a9a-de66b9dfae24&utm_term=test&utm_source=google&utm_medium=cpc&utm_campaign=_elktrk_telefony_akcesoria_pla_pmax&ev_campaign_id=17966351225&gad_source=1&gclid=CjwKCAiA_OetBhAtEiwAPTeQZ2yp7C_gGxU40vNmUihqKiBPqUzL2Ou93CtLVhF88ufn7tU0Kzy85hoCgekQAvD_BwE)