OpenFIRE

LIGHT GUN

FIRMWARE & GUI

HARDWARE GUIDE

CONTENTS

Version 1.0

CAMERA

DF ROBOT IR CAMERA

3V3 OUT

GND

GP21

GP20

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LED
USB
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BOOTSEL
DEBUG
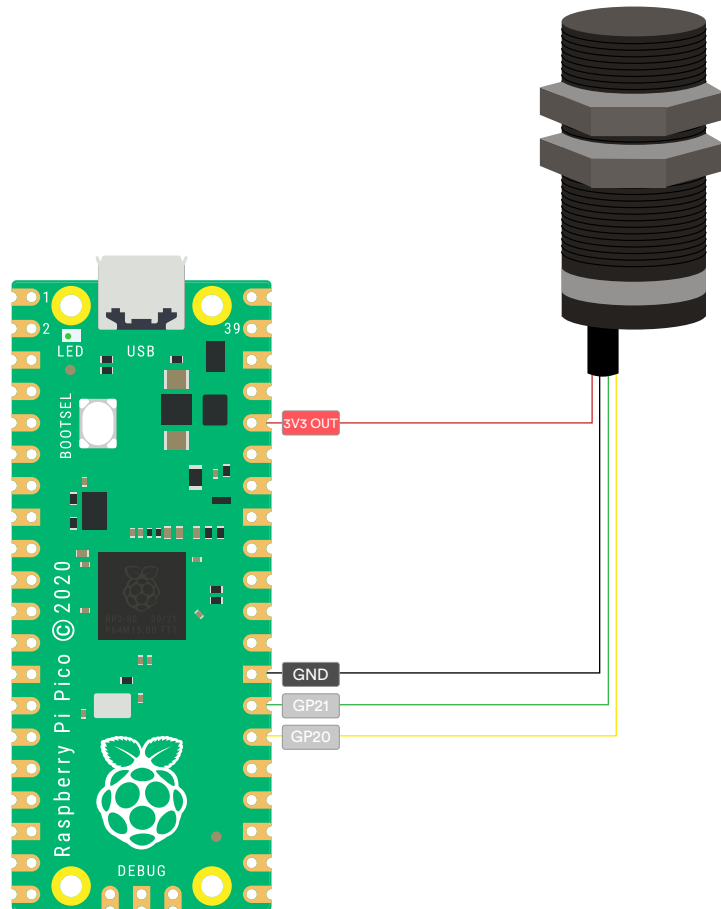
Camera Alignment
(test in App after construction
for best results)
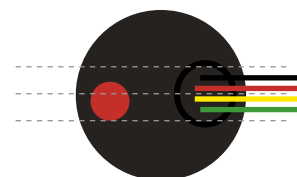
Red - VCC+
Black - GND
Green - SCL
Yellow - SDA

STATUS LED

4-PIN COMMON CATHODE

NOTE:
Individual pins can be reassigned in the App if needed.

GND
GP10
GP11
GP12

220Ω

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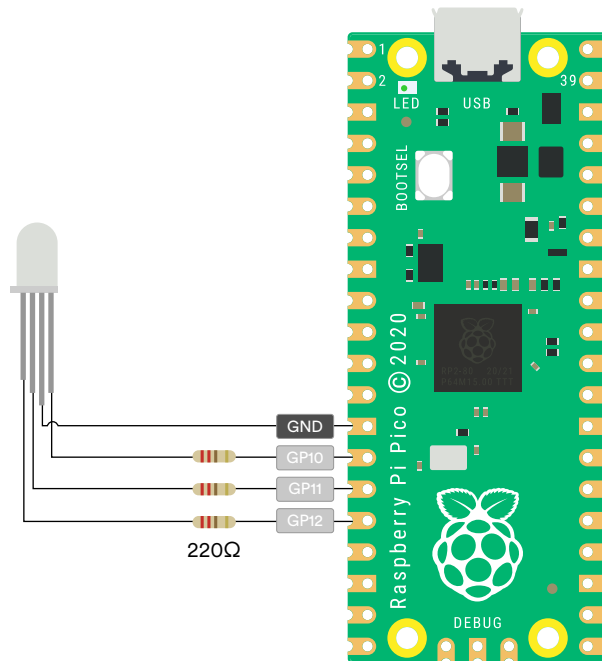
Common Cathode RGB LED
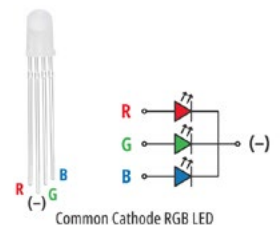
STATUS LED

4-PIN COMMON ANODE

NOTE:
Individual pins can be reassigned in the App if needed.

3V3 OUT

GP10

GP11

GP12

220Ω

LED

USB

BOOTSEL

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DEBUG

1

2

39

R

G

B

R

(+)

G

B

(+)
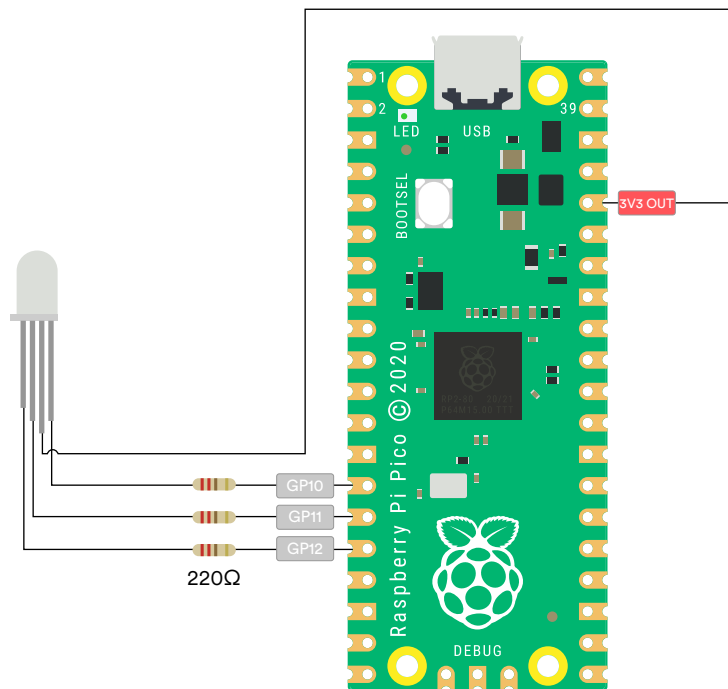
Common Anode RGB LED

STATUS LED

5V NEOPIXEL

VBUS

GND

GP10

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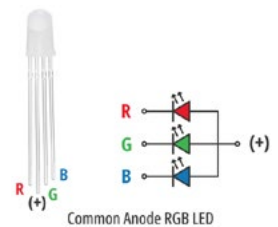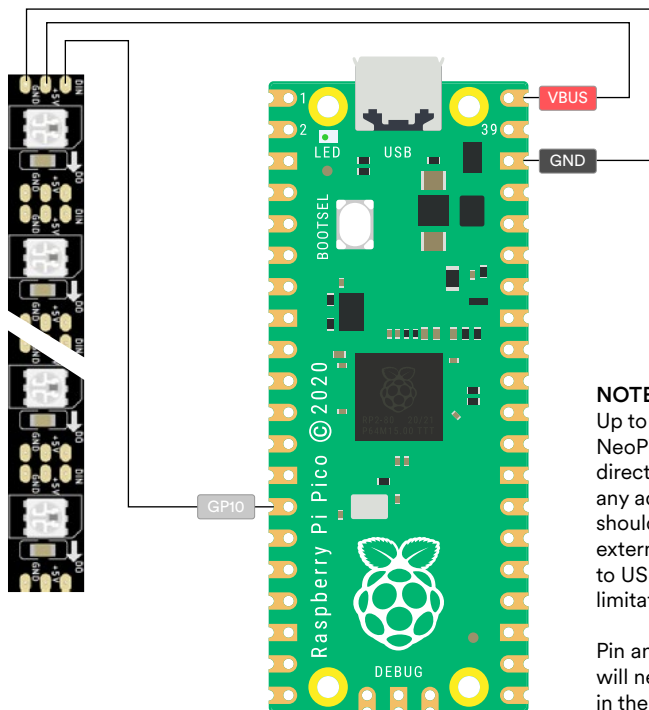
NOTE:
Up to three/four NeoPixels can be run directly off VBUS - any additional pixels should be driven by external voltage due to USB amp draw limitations.

Pin and extra settings will need to be setup in the App.

RUMBLE

DIY SETUP

TRANSISTORS:
2N2222

RUMBLE MOTORS:
N20

Diodes:
1N4001 (Obsolete)
1N4007

VBUS

2N2222

MOTOR

100nF

DIODE

GND

GP17

500-1kΩ

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LED   USB

BOOTSEL

DEBUG

1

2

39

2N2222

COLLECTOR
3

2
BASE

1
EMITTER

TO-92

SOLENOID

DIY SETUP

MOSFET MODULES:
IRL540

SOLENOIDS:
JB-0530 (12V)
JB-0530 (24V)
JF-1039(12V)
JF-1039(24V)

TEMP SENSORS:
TMP36

Diodes:
1N4001 (Obsolete)
1N4007

NOTE:
Temp sensor pin will need to be allocated in the App (analog pins only).

TEMP SENSOR

12/24V SOLENOID

3V3 OUT

100nF

GP28

GND

DIODE

POSITIVE

GROUND

12/24V (4-5A) ADAPTOR

MOSFET

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LED USB

BOOTSEL

DEBUG

GND

100kΩ

GP16

1kΩ

IRL540

N Channel Mosfet

Pin2 | D

G
Pin1

Pin3 | S

G = Gate
D = Drain
S = Source

Pin1 Gate
Drain Pin2
Pin3 Source

TMP36

1) 2.7 V to 5.5 V
2) Vout
3) Ground

1 2 3

SOLENOID

MOSFET MODULE SETUP

MOSFET MODULES:
AOD4184
LR7843

SOLENOIDS:
JB-0530 (12V)
JB-0530 (24V)
JF-1039(12V)
JF-1039(24V)

TEMP SENSORS:
TMP36

Diodes:
1N4001 (Obsolete)
1N4007

NOTE:
Temp sensor pin will need
to be allocated in the App
(analog pins only).

TEMP SENSOR

12/24V SOLENOID

3V3 OUT

100nF

GP28

GND

DIODE

POSITIVE

GROUND

12/24V (4-5A) ADAPTOR

MOSFET MODULE

GND

PWM

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BOOTSEL

LED   USB

1

2

39

DEBUG

GND

GP16

TMP36

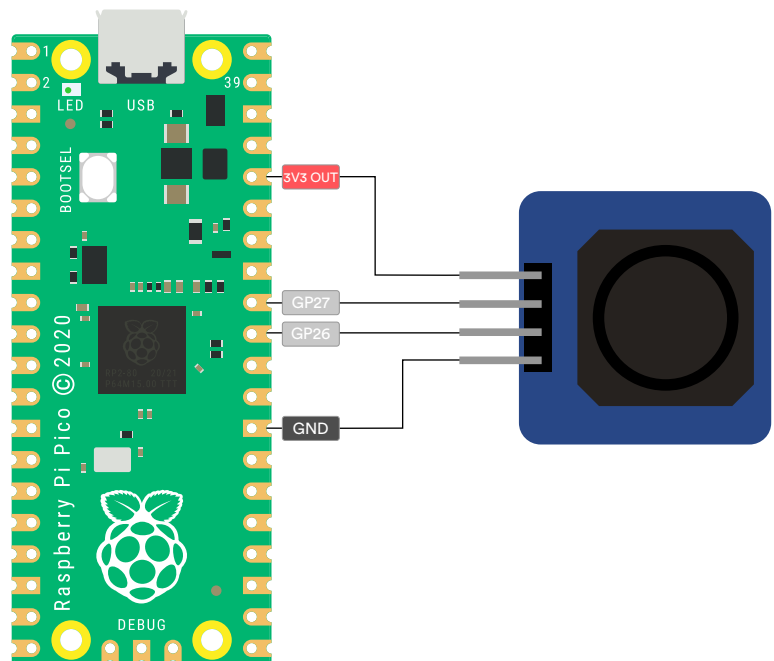1) 2.7 V to 5.5 V
2) Vout
3) Ground
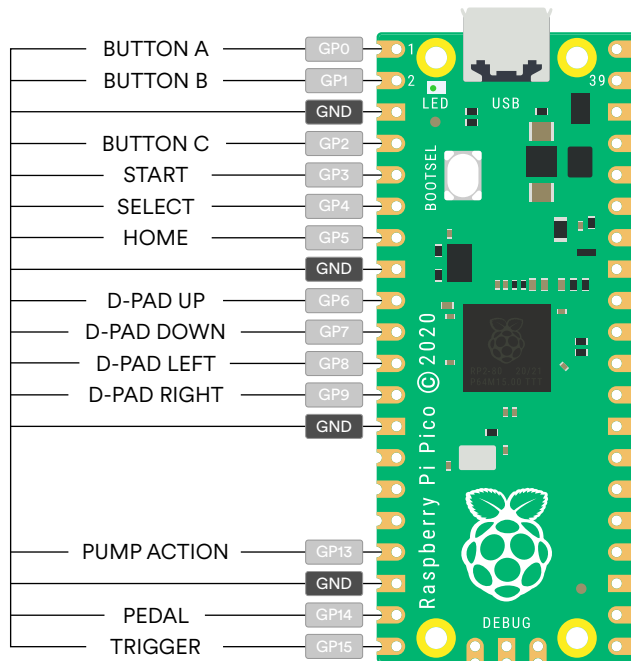
1 2 3

ANALOG STICK

DIY SETUP

NOTE:
There are many versions of these so check your pin-outs carefully.

Suggested Pins (these need to be assigned to analog pins and will need to be allocated in the App).


1
2
LED
USB
39

BOOTSEL

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DEBUG

3V3 OUT

GP27

GP26

GND

BUTTONS
DEFAULT LAYOUT

BUTTON A — GP0
BUTTON B — GP1
GND
BUTTON C — GP2
START — GP3
SELECT — GP4
HOME — GP5
GND
D-PAD UP — GP6
D-PAD DOWN — GP7
D-PAD LEFT — GP8
D-PAD RIGHT — GP9
GND
PUMP ACTION — GP13
GND
PEDAL — GP14
TRIGGER — GP15

LED   USB

BOOTSEL

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DEBUG

Buttons are all assigned internal pull-up resistors so no extra hardware is needed. Any momentary, normally open button will work.
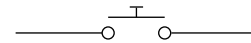
NOTE:
Buttons can be reassigned in the App if needed.