EEE3088F RMTDIC001 Demo Notes

FOR THE STM32

PA0-> LEFT ->LED7
PA1-> MIDDLE ->LED6
PA2-> RIGHT ->LED5

DON'T FORGET TO COMMON GROUND STM, SENSOR AND POWER SUPPLY

System Interface Input

Table 1: System Interface Table **Sensor Board Input**

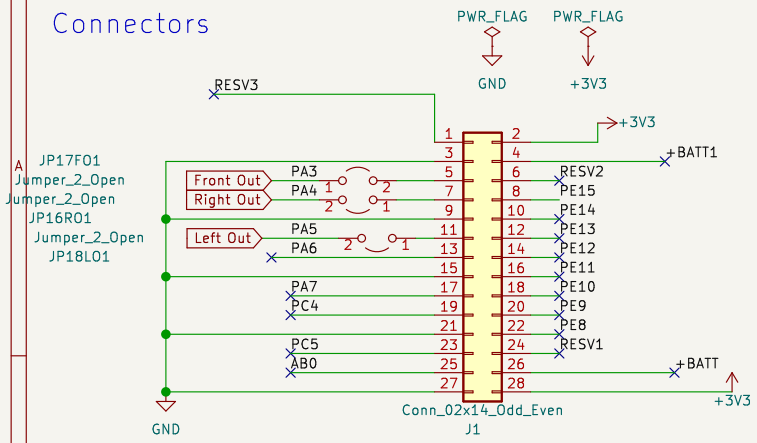
Origin	**Destination**	**Use**
3V3 Supply	Pin 2(Sensor Board)	Power
GND Supply	Pin 3(Sensor Board)	Power
GND Supply	STM Ground Pin	Power
3V3 Supply	Pin 10(Sensor Board)	Input Power
3V3 Supply	Pin 22(Sensor Board)	Input Power
3V3 Supply	Pin 20(Sensor Board)	Input Power

System Interface Output

Table 2: System Interface Table **Sensor Board Output**

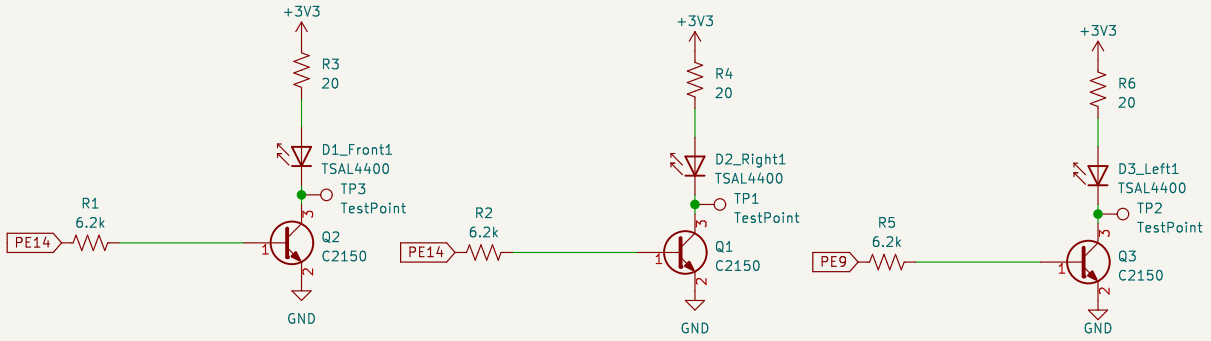
Origin	**Destination**	**Use**
Pin 5(Sensor Board)	PA1 STM	Front sense
Pin 7(Sensor Board)	PA2 STM	Right Sense
Pin 11(Sensor Board)	PA0 STM	Left Sense

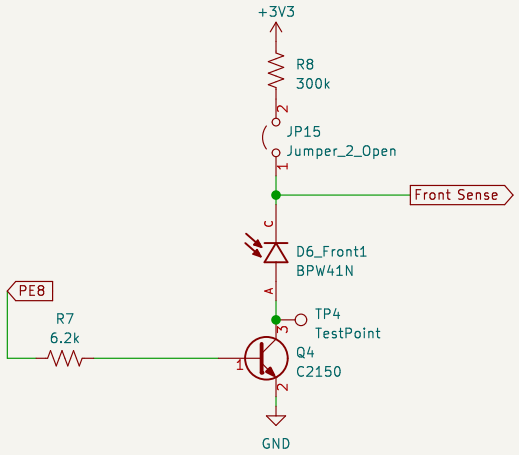
Connectors

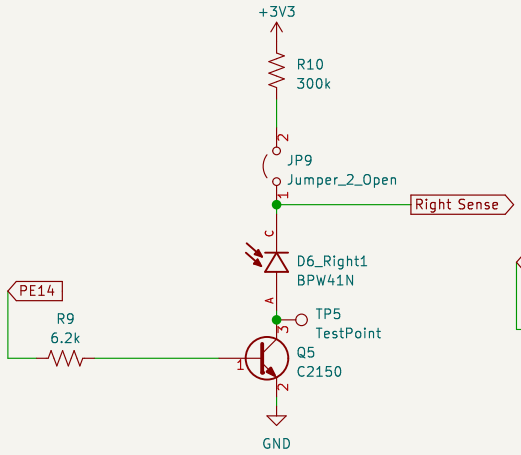


IR Emmitters

The Emmitters+ Photodiodes complete the sesnor circuit
The IR Emitters emmit light at 940nm wavelength
Optimal and exactly matched with the photodiode sesnitivity







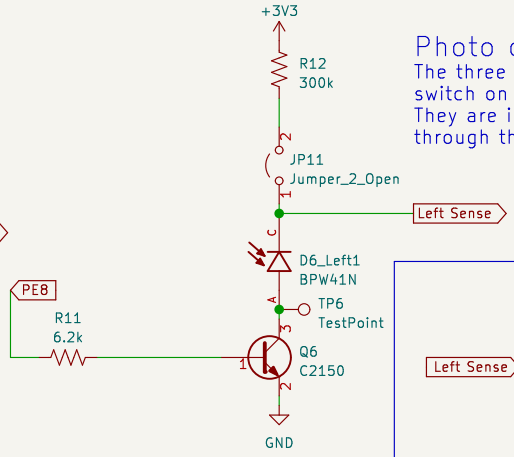
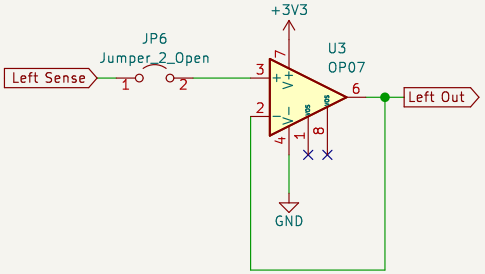
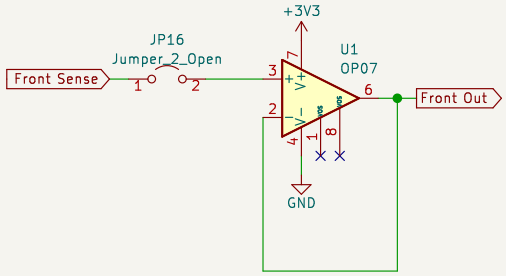


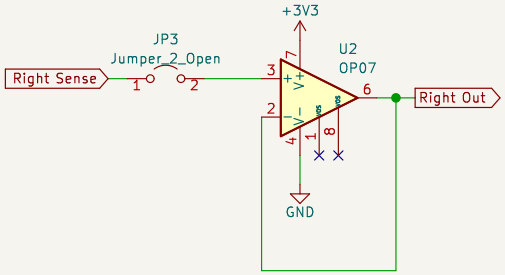
Photo diodes

The three photodiodes for Front, Left and Right
switch on and off to save power
They are in sync with the IR Emmitters
through the BJTs.



Sensor Outputs





Ramotlou Dichochi
RMTDIC001
EEE3088F
University of Cape Town

Sheet:
File: MicroMouse Sensor .kicad_sch

Title: Micro Mouse Sensor

Size: A4	Date: 2024-05-10	**Rev: v5.0**
KiCad E.D.A. kicad (7.0.0-0)		Id: 1/1