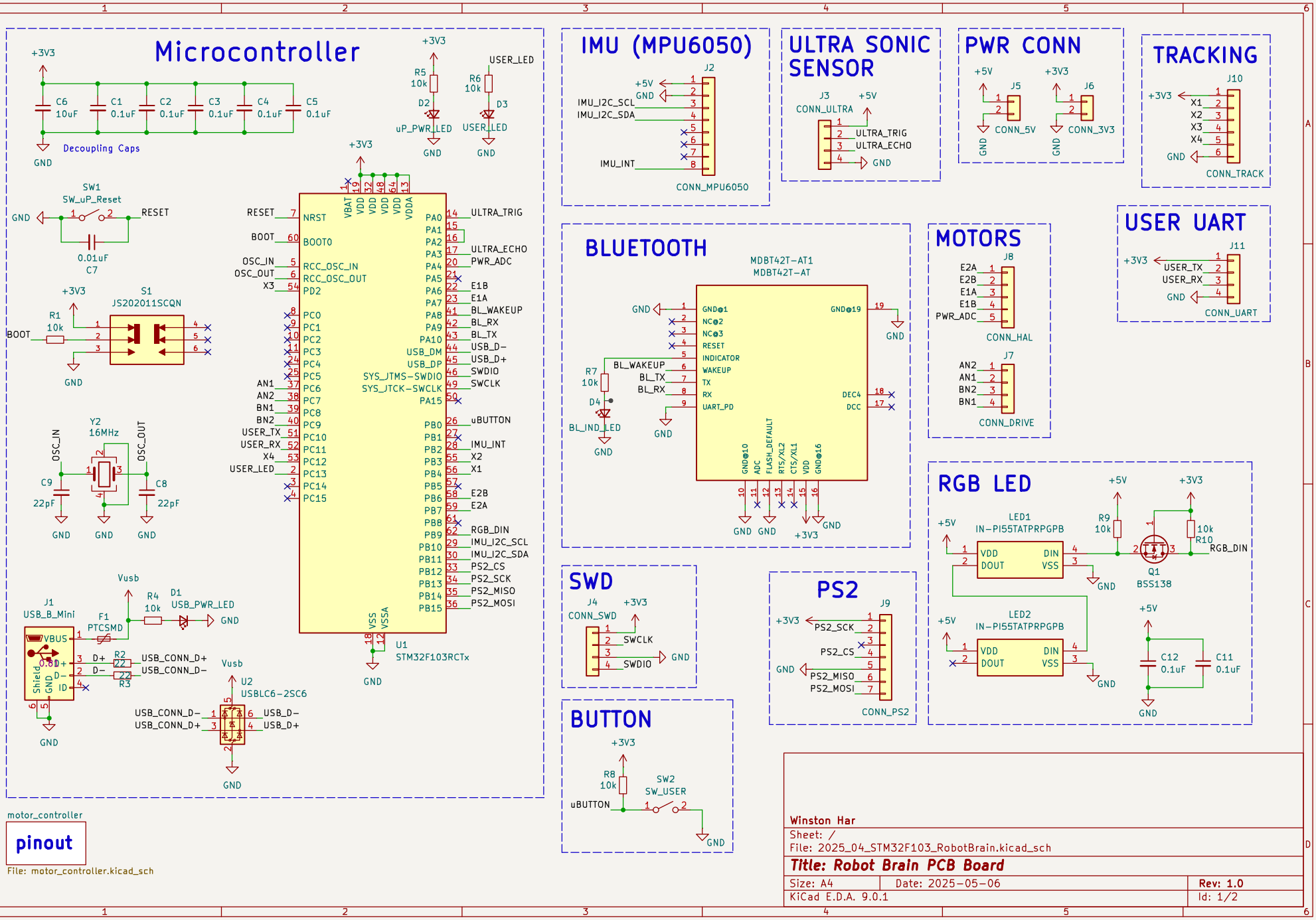
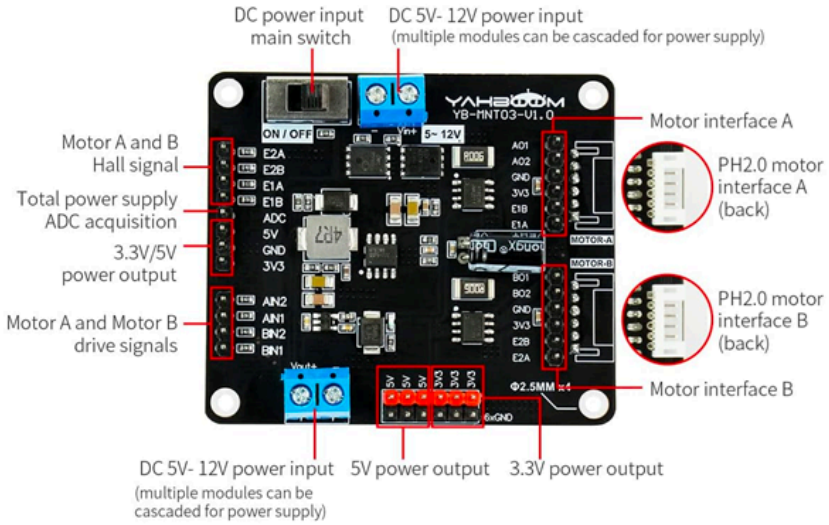

Microcontroller
Decoupling Caps
C6 10uF
C1 0.1uF
C2 0.1uF
C3 0.1uF
C4 0.1uF
C5 0.1uF
SW1 SW_uP_Reset
0.01uF C7
S1 JS202011SCQN
R1 10k
Y2 16MHz
C9 22pF
C8 22pF
R5 10k
R6 10k
D2 uP_PWR_LED
D3 USER_LED
U1 STM32F103RCTx
J1 USB_B_Mini
F1 PTCSMD
R4 10k
D1 USB_PWR_LED
R2 22
R3 22
U2 USBLC6-2SC6
motor_controller
pinout
File: motor_controller.kicad_sch
IMU (MPU6050)
J2
CONN_MPU6050
ULTRA SONIC SENSOR
J3 CONN_ULTRA
PWR CONN
J5 CONN_5V
J6 CONN_3V3
TRACKING
J10 CONN_TRACK
USER UART
J11 CONN_UART
BLUETOOTH
MDBT42T-AT1
MDBT42T-AT
R7 10k
D4 BL_IND_LED
MOTORS
J8 CONN_HAL
J7 CONN_DRIVE
RGB LED
LED1 IN-PI55TATPRPGPB
LED2 IN-PI55TATPRPGPB
R9 10k
R10 10k
Q1 BSS138
C12 0.1uF
C11 0.1uF
SWD
J4 CONN_SWD
PS2
J9 CONN_PS2
BUTTON
R8 10k
SW2 SW_USER
Winston Har
Sheet: /
File: 2025_04_STM32F103_RobotBrain.kicad_sch
Title: Robot Brain PCB Board
Size: A4
Date: 2025-05-06
Rev: 1.0
KiCad E.D.A. 9.0.1
Id: 1/2

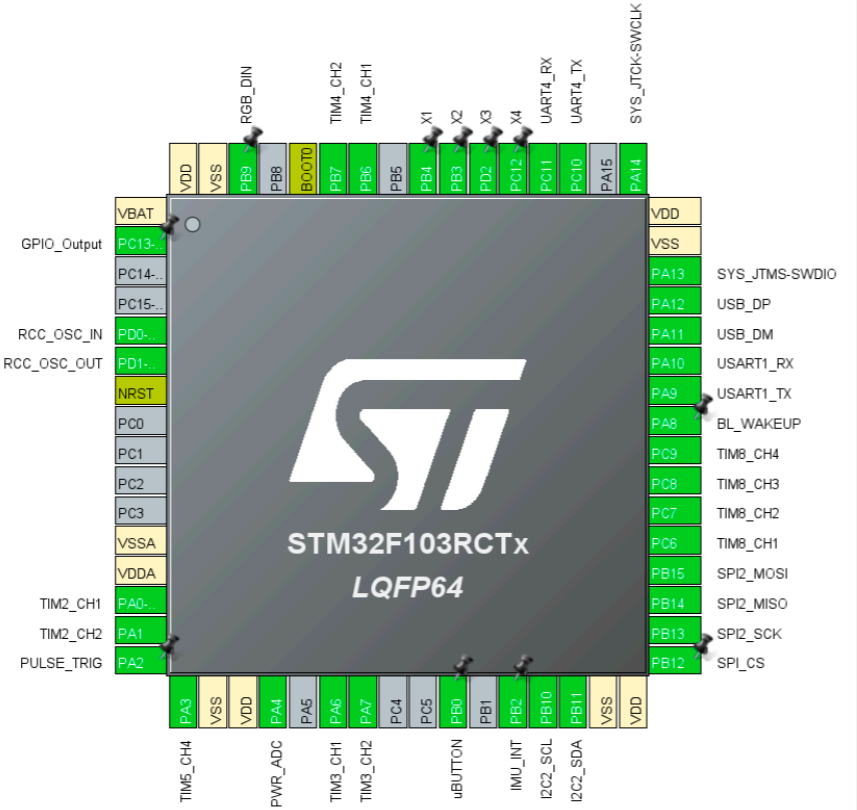
https://www.amazon.com/Yahboom-Controller-AT8236-H-Bridge-Raspberry/dp/B0BVVZT37H?th=1

Interface Description



Pin details

Interface type	Pin name	Pin description	Interface type	Pin name	Pin description
MCU/host interface	E1A	Motor 1 Hall signal A	Motor port	AO1	Motor 1 power supply+
	E1B	Motor 1 Hall signal B		AO2	Motor 1 power supply-
	E2A	Motor 2 Hall signal A		GND	GND
	E2B	Motor 2 Hall signal B		3V3	Motor 1 Hall power supply
	ADC	Collect VM input voltage		E1B	Motor 1 Hall signal B
	5V	Output 5V3A power supply		E1A	Motor 1 Hall signal A
	GND	GND		BO1	Motor 2 power supply+
	3V3	Output 3.3V voltage		BO2	Motor 2 power supply-
	AIN1	Motor 1 drive signal 1		GND	GND
	AIN2	Motor 1 drive signal 2		3V3	Motor 2 Hall power supply
	BIN1	Motor 2 drive signal 1		E2B	Motor 2 Hall signal B
	BIN2	Motor 2 drive signal 2		E2A	Motor 2 Hall signal A



Sheet: /motor_controller/
File: motor_controller.kicad_sch

Title:

Size: A4	Date: 2025-04-30	Rev:
KiCad E.D.A. 9.0.1		Id: 2/2