BUGC2

SKU:K033-C

Description

BugC2 is a programmable robot base compatible with the M5StickC series controllers. This base integrates four L9110S motor drivers and DC gear motors, utilizes the STM32F030F4 as its core control chip, and comes equipped with two flexible programmable RGB LEDs, an infrared encoder, and a dedicated battery holder. Through its top slot, BugC2 can closely connect with the M5StickC controller, precisely receiving control commands via the I2C protocol (address 0x38). Beyond providing basic mobility capabilities, BugC2 also features a Type-C charging port, battery reverse connection protection, and voltage detection for enhanced safety and convenience. Its built-in 700mAh 16340 rechargeable lithium battery ensures long-lasting battery life, making it a

nultifunctional and efficient programmable robot platform suitable for various educational and nnovative applications.

Features

- Programmable robot
- Remote control
- Four-way motor driver (L9110S)
- 2xRGB LED
- Infrared remote control decoding
- Battery voltage detection
- Onboard Typec port battery charging
- Battery anti-reverse connection

Includes

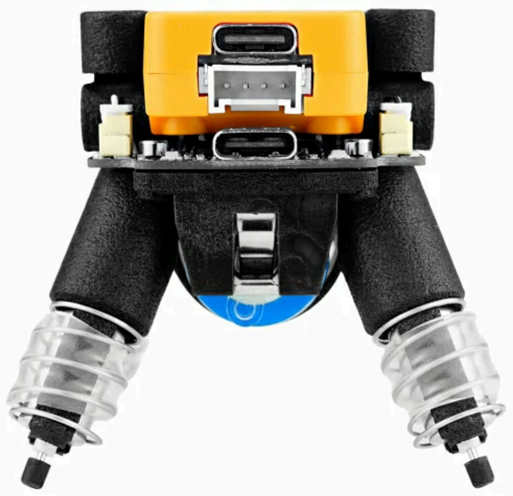
- 1x StickC Plus2
- 1x BugC2 Base
- 12x Silica gel pads

Applications

- Remote motor control
- Robot control
- Intelligent toy

Specification

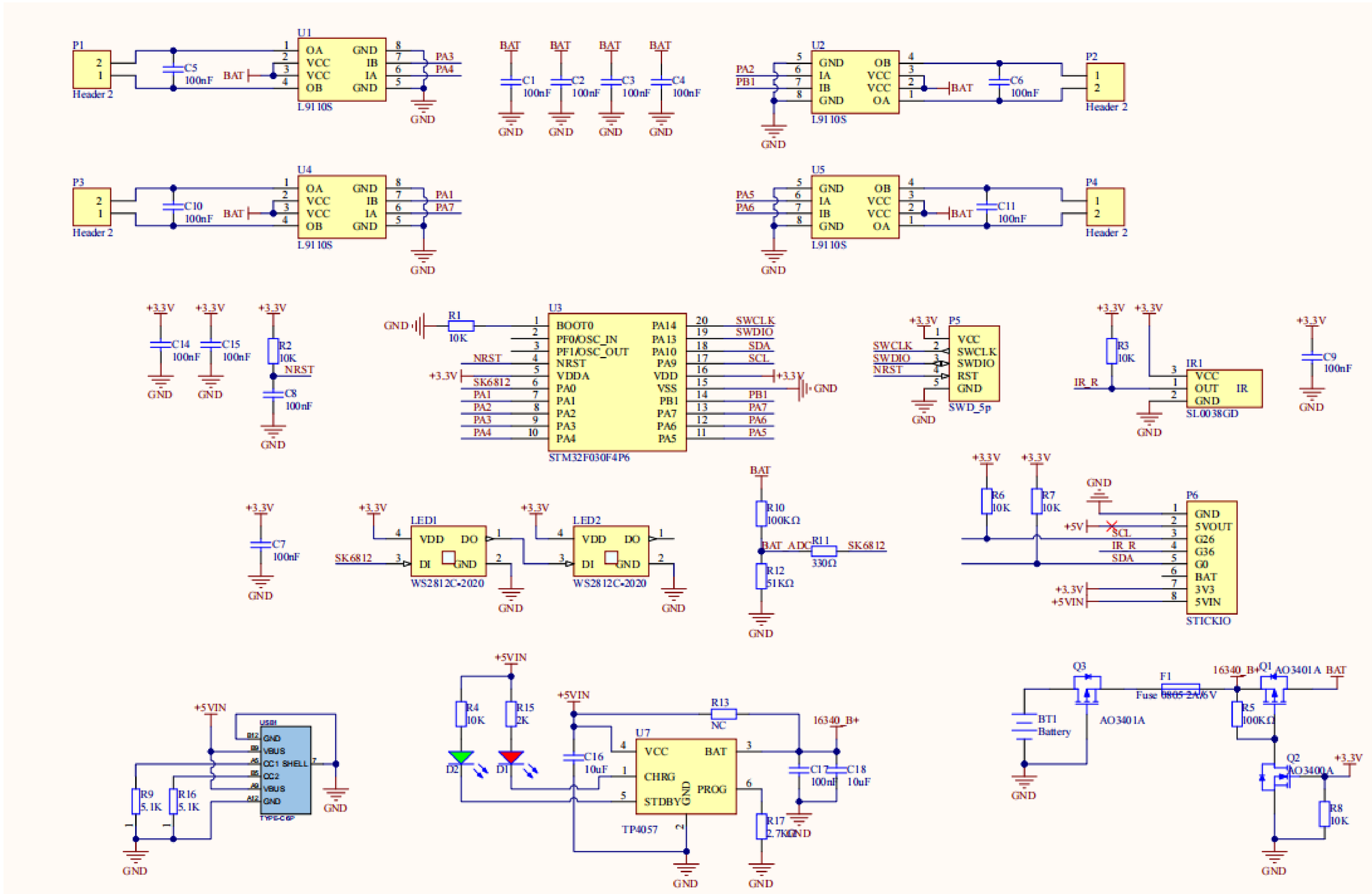
Resources	Parameters
Motor drive	L9110S
Infrared receiver	SL0038GD
RGB	WS2812C-2020
Battery capacity	700（specification：16340）
Standby current	Avg:DC4.2V/20.8uA
2orking current	Avg:DC4.2V/285.1mA
IR detection distance（StickC Plus2）	Infrared emission distance (linear distance) at 180° : 560CM Infrared emission distance at 90° : 400CM
Operating temperature	0-40°C
Product Size	55*40*25mm
Package Size	71.7*70*58mm
Product Weight	74,5g
Package Weight	87.9g


Related Link

- L9110S

Schematic



EasyLoader

- **Windows**
  - Easyloader-BugC2 Demo

PinMap

STM32 F030F4 P6	PA1	PA2	PA3	PA4	PA1	PB1	PA
Motor1 (left front)			1B	1A			
Motor2 (Left Rear)	1B						
Motor3 (Right Rear)							1/
Motor4 (Right front)		1A				1B	
BAT_Detect(WS2812)							

STICKC PLUS2(ESP32-PICO-V3-02)	G36
IR(SL0038GD)	IR_R

Protocol

M5Stack BugC I2C Protocol																	V1 (FW Version) 2022/11/29
REG MAP(Addr:0x38)		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	note
MOTOR SPEED	0x00 W/R	front_left_speed	front_right_speed	rear_left_speed	rear_right_speed													speed: 0~-100; 0~100
RGB	0x10 W	RGB select	RGB_R	RGB_G	RGB_B													RGB select: 0: FRONT_LEFT RGB 1: FRONT_RIGHT RGB
ADC 8Bits	0x20 R	ADC 8Bits																0~255
ADC 12Bits	0x30 R	ADC 12Bits-L	ADC 12Bits-H															0~4095
Firmware Version	0xF0 R															Version		**Version:** firmware version number
I2C Address	0xF0 R/W																Address	**Address:** 1~127

Examples

Arduino

- Hat-BugC2 Lib
- Hat-BugC2 STM32 Internal Firmware

Video