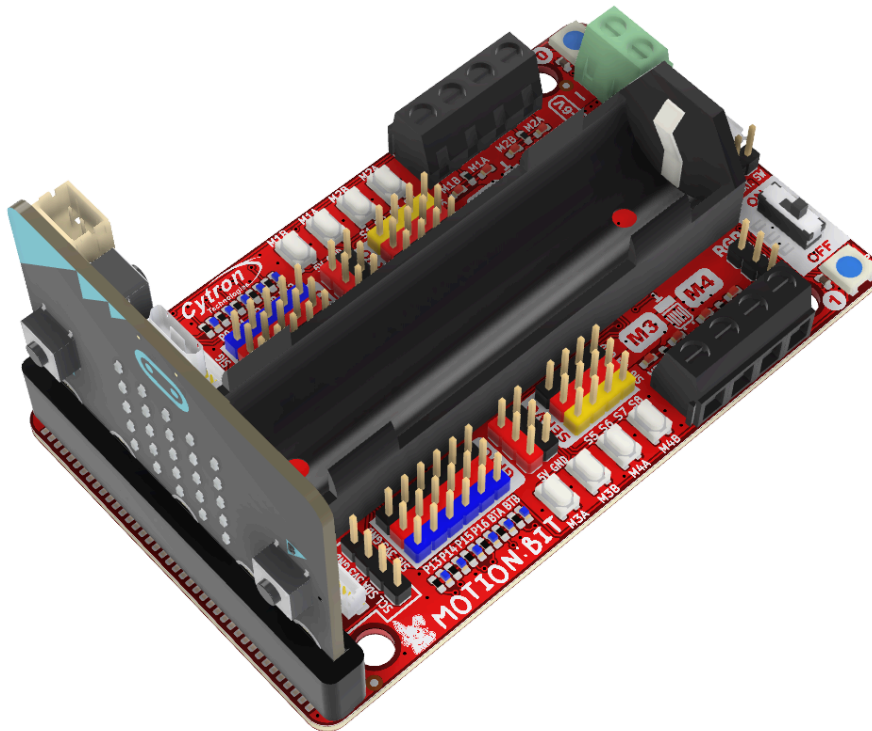




MOTION:BIT

Simplifying Motion Control with micro:bit



Datasheet

Rev 1.0
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1. BOARD LAYOUT & FUNCTION

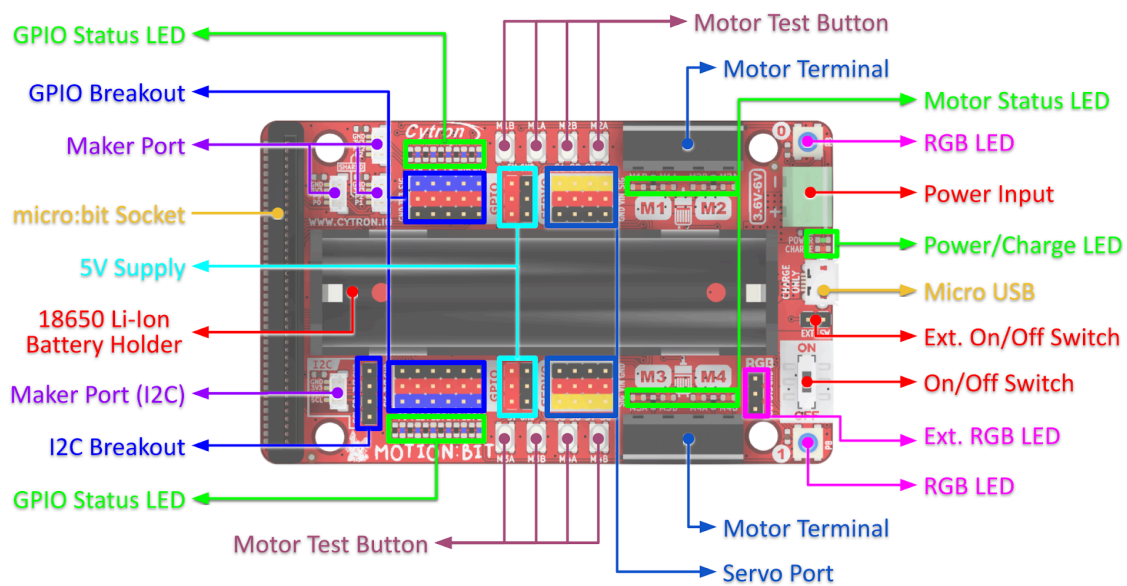


Figure 1: MOTION:BIT Board Functions

Function	Description
GPIO Status LEDs	LED indicator for digital IO. Turn on when the IO state is high.
GPIOs Breakout	Micro:bit GPIOs breakout. Arranged in color-coded GVS format. With 3.3V power output for each GPIO. These pins are broken out: P0, P1, P2, Button A, Button B, P9, P12, P13, P14, P15, P16.
Maker Ports	JST-SH 4-Ways Connector for external modules. Compatible with Qwiic, STEMMA QT and Grove (Via Conversion Cable). These pins are available on Maker Ports: P0-P9, P1-P2, P2-P12
micro:bit Socket	Plug in micro:bit here. Make sure the LEDs on micro:bit are facing out.
5V Supply	5V output for external sensors/modules.
18650 Li-Ion Battery Holder	Insert the 18650 Li-Ion battery here.
Maker Port (I2C)	JST-SH 4-Ways Connector for external modules. Compatible with Qwiic, STEMMA QT and Grove (Via Conversion Cable). This port is for I2C modules only.
I2C Breakout	Breakout of micro:bit I2C pins.
Motor Test Buttons	Press to test the functionality of the motor driver. Motor will run at full speed.

Servos Port	Connectors for 8x RC servo motors. V+ voltage is equal to power source voltage.
Motor Terminals	Connect to the motor terminal. Motor voltage at full speed is equal to power source voltage. Motor direction is dependent on the polarity.
RGB LEDs	User programmable WS2812B RGB LEDs. Connected to P8.
Ext. RGB LED	For external WS2812B RGB LEDs. Daisy-chained to onboard RGB LED. (Connected to Dout pin of RGB LED 1).
On/Off Switch	Turn On/Off the power.
Ext. On/Off Switch	Header for external On/Off switch. The onboard switch must be in Off position to use the external switch.
Micro USB	Micro USB port for charging the battery or power up the Motion:Bit. No data transmission on this port.
Power/Charge LED	LED indicator for: <ul style="list-style-type: none"> • Power - Turn on whenever the board is powered up. • Charge - Turn on when charging is in progress. Turn off when full.
Power Input	Terminal for external 3.6V - 6V power input. Can be used for external LiPo or 4x AA batteries.
Motor Status LEDs	Turn on when the motor is running.

Table 1: MOTION:BIT Board Functions

2. SPECIFICATIONS

No	Parameters	Min	Max	Unit	
1	Power Input Voltage	3.6	6	V	
2	Analog Input Voltage	0	3.3	V	
3	Total +3V3 Output Current (GPIO Breakout & Grove Ports)	-	200	mA	
4	Total +5V Output Current	-	300	mA	
5	Maximum DC Motor Current	Continuous	-	1	A
		Peak (< 5 seconds)	-	1.5	A

Table 2: MOTION:BIT Absolute Maximum Ratings

3. DIMENSION

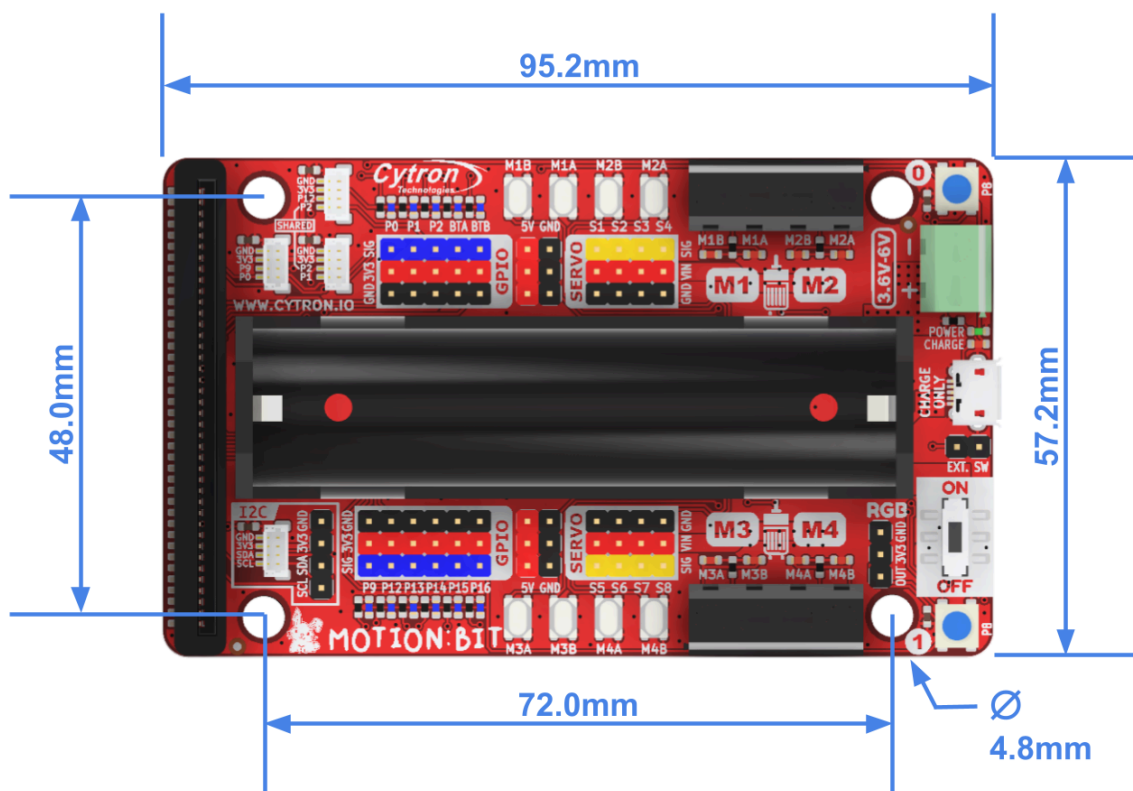


Figure 2: MOTION:BIT Dimension

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