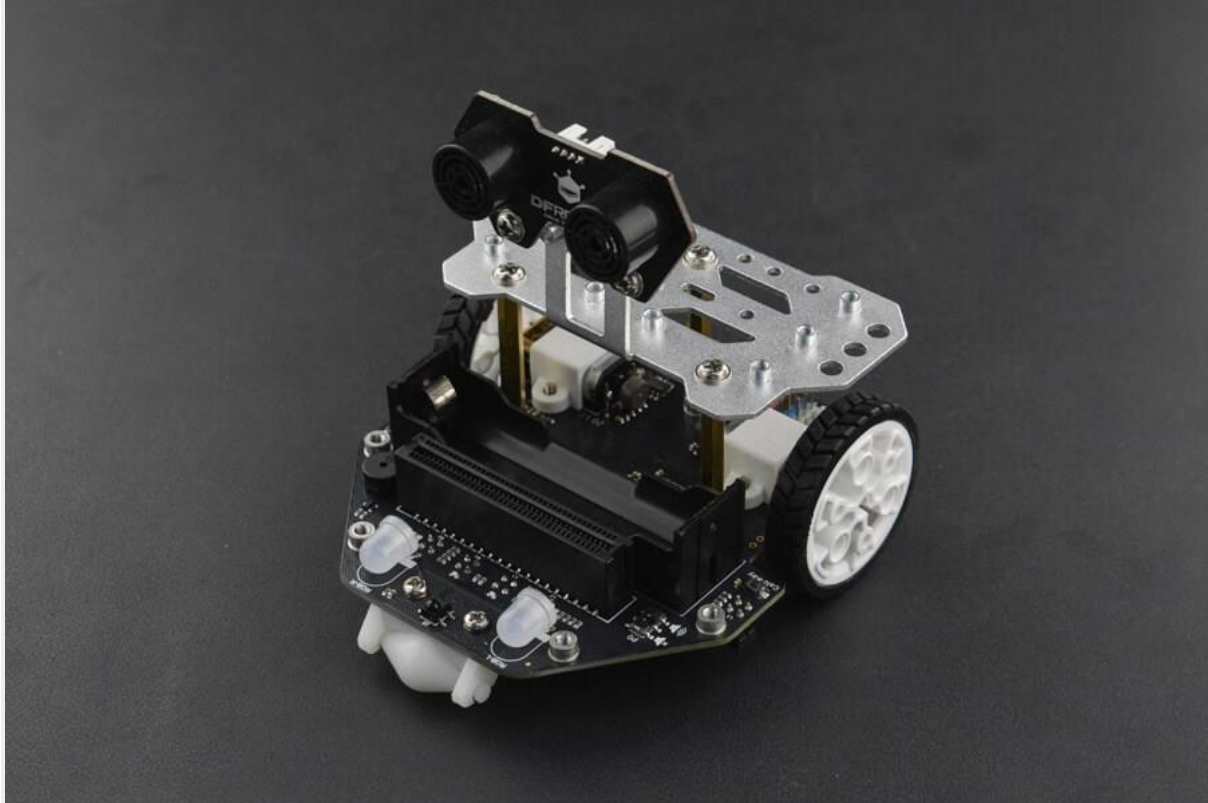# micro:Maqueen Plus - an Advanced STEM Education Robot for micro:bit

SKU:MBT0021-EN

INTRODUCTION

News: **micro:Maqueen Plus has been named a Winner in the Hardware: Emerging Tech/eSports for the 2020 Tech & Learning Awards of Excellence.**

micro: Maqueen Plus is an **advanced** version of micro:Maqueen Lite (4.0), which is more powerful and intelligent. Optimized with **better power management** and **larger capacity power supply**, it can be perfectly compatible with HuskyLens AI Vision Sensor, which makes it an accessible **AI robot teaching tool**.

In addition, micro:Maqueen Plus comes with a **larger and more stable chassis**, **more built-in functions** and **more expansion ports**, it is not only suitable for classroom teaching, but also can be suitable for **after-school extended exercises and robot competitions**.

(**Note: micro:bit board and batteries are not included.**)

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Selection Guide for micro:Maqueen series

Name	micro: Maqueen Lite	micro: Maqueen Plus
Power supply	3 AAA Batteries or CR123A Lithium battery (600~800mA)	18650 Li-ion battery (2300mA~2500mA)
Charging circuit	×	√
Power display	×	√
Encoder and PID control	×	√
Support for installing Huskylens AI camera	×	√
Support for line-tracking sensor calibration	√	√
Support for analog reading of line-tracking sensor	×	√
Number of line-tracking sensor	2	6
Number of IO expansion port	4	12
Number of servo port	2	3
Number of mechanic expansion thread	2	16
Motor rated rotation speed	133 rpm	260 rpm
LED color	Red LED	Large size RGB LED with 7 colors
Ultrasonic Model	H-SR04	DFRobot high-quality URM10 ultrasonic sensor
Continuous usage time with Huskylens	30min	180min
Standard continuous usage time	8h	24h
Come with line-tracking map	×	√
Onboard IR receiver and buzzer	√	√
Onboard WS2812 RGB LED	√	×

Application Scenario	Entry level classroom teaching	Intermediate level teaching, after school workshop, robot competition

High Capacity Lithium Battery

• Powered by18650 high capacity lithium battery.

• Onboard charging circuit and battery indicator.

Competition-level Sensors

• 6 line tracking sensors to allow complex routine programs and complicated maze algorithms.

• Supports analog readings and sensor calibrations with only one key.

Rich Extension Interfaces

• 9 GPIO expansion ports, 3 I2C extension ports, 3 servo expansion ports.

• 12 M3 threaded connections.

• Fully compatible with micro: Maqueen Mechanic and [HuskyLens AI vision sensor](#).

High Speed Metal Motor

• 260 RPM high speed metal motor; higher travel speed and well suitable for robot competitions.

Motor with Encoder and PID Control

• 2 encoders to read real-time speed and direction, thus multiple cars running in the same map can be smoother.

• PID control for a stronger moment force in low speed.

Abundant Configurations

• 2 large-size RGB LEDs, supports 6 colors displaying.

• Onboard infrared receiving sensor and buzzer.

• Free high-quality ultrasonic sensor, which performs better than SR04 version.

• One free line-tracking map for user-friendly experience.

Large and Stable

A larger size and more stable chassis than micro: Maqueen Lite, which is available for combining with more accessories.

SPECIFICATION

- Power Supply: 3.7V-18650 lithium battery
- Charging Voltage: 5V

- Charging Current: 900mACharging Time: 4h

- Battery Indicator: 4 LEDs

- Drive Motor: N20 motor 260 rpm

- Buzzer * 1

- RGB-LED * 2

- GPIO Expansion Ports：P0 P1 P2 P8 P12 P13 P14 P15 P16

- I2C Expansion Ports * 3

- Servo Expansion Ports *3

- Line Tracking Sensors *6

- Line Tracking Sensor Output Data: analog + digital

- Line Sensor Calibration: support

- Infrared Receiving Sensor *1

- Ultrasonic Sensor: URM10

- Top Metal Plate * 1

- M3 threaded connections *12

- Map Size: 50cm*50cm

- Dimension: 107x100mm/4.21 x3.94"